

2022 SEED GUIDE

CORN



Let's leave status quo in the dust.

It's time to tune out all the bluster and focus on what works. CROPLAN® by WinField United gives you the right tools to make the best agronomic decisions for your corn crop. CROPLAN® seed uses the latest data to recommend what hybrids to choose and where to place them to get optimal bang for your buck. And we're one of the only seed brands in the industry to offer zinc as a standard treatment on all commercial hybrids to promote early-season growth and root development. We'll work with you to determine how much, when and where to apply nutrients and crop protection products to generate the most yield and profit potential. Our expertise leads. And it yields.

KEY TAKEAWAYS

- Be familiar with hybrid response to continuous corn (RTCC) and soil type.
- Optimize yield potential by understanding hybrid response to population (RTP).
- 3 Use hybrid response-to-nitrogen (RTN) scores to maximize your nitrogen management plan.
- 4 Understand hybrid ROI potential with fungicide applications by knowing the response-to-fungicide (RTF) score.
- 5 Use quality data from WinField United to make informed decisions.

RESPONSE-TO SCORES DELIVER RESULTS YOU CAN HARVEST¹

Ten years of nationwide Answer Plot® data show that there is a +98.8-bushel-per-acre average response over the four different response-to scores (response to continuous corn, response to population, response to nitrogen, response to fungicide). By using response-to scores to choose hybrids that fit specific management conditions, there are potentially 98.8 bushels per acre at stake, with a range of 31.2 to 178.4 bushels per acre across the four input decisions.

Response to Cont. Corn 15.1 BU/A

Response to Population 8.6 BU/A

Range: 7.3 to 35.1 bu/A

Range: 0.15 to 20.3 bu/A

Response to Nitrogen **66.9 BU/A**

Response to Fungicide
13.6 BU/A

Range: 19.8 to 97.7 bu/A

Range: 3.9 to 25.3 bu/A 6-yr range

MAKE CONTINUOUS CORN COUNT²

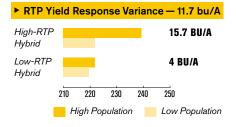
All hybrids have strengths and weaknesses that must be considered when determining how they will respond under different cropping systems and on various soil types.

 Matching hybrids to your cropping system will allow you to achieve optimal yield potential. Good management of residue, insects and disease in addition to vigilant scouting are all critical to sustaining an optimal corn-on-corn system. For good emergence, plant corn at uniform depths and position stronger-emerging hybrids on continuous-corn fields with heavy residue.

► RTCC Average Response — 14.4 bu/A

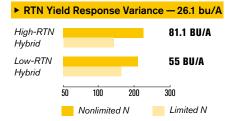
TARGET POPULATIONS²

Planting each hybrid at the right population is key to optimizing its performance potential. A high RTP score identifies a hybrid that shows a potential yield gain with increased populations. A low RTP score indicates a hybrid that does not deliver high yield potential with increased populations.



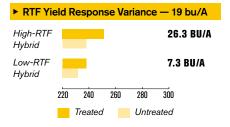
LET NITROGEN NOURISH²

Be sure to consider the RTN scores of the hybrids you choose. Select hybrids with high RTN scores if you are planning to apply additional or late-season nitrogen, and hybrids with moderate or low scores in limited nitrogen environments. Perform appropriate tissue testing to determine optimal application timing for nitrogen, which may help minimize the financial and environmental costs of applying too much.



LEVERAGE FUNGICIDES FOR PLANT HEALTH²

Fungicides are another tool to help you optimize the yield potential of your corn crop. RTF scores help you understand where fungicides may increase yield potential and protect ROI potential.



TURN DATA INTO INSIGHTS

Trusted WinField United advisors help you connect various data sources, analyzing and interpreting different data sets to make personalized recommendations for your farm to achieve more yield and profit potential.



More Than 6 Million Data Points³



20-Plus Years of Answer Plot® Expertise



Nationwide Answer Plot® Locations



Exceptional
Data Accuracy
(low LSDs)

1. Response ranges show the importance of how hybrids respond to each management practice to help ensure the highest yield potential. 2019 nationwide Answer Plot® data. Because of factors outside of WinField United's control, such as weather, product application and any other factors, results to be obtained, including but not limited to yields, financial performance or profits, cannot be predicted or guaranteed by WinField United.
2. 2020 Answer Plot® trial data.

3. 1998–2020 Answer Plot[®] trial data.



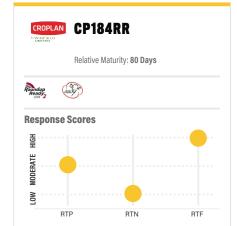


CROPLAN® TRAIT LETTERING FOR CORN HYBRIDS

Descriptive hybrid numbering and trait lettering systems are used for CROPLAN® corn hybrids.

KEY	HYBRID	TRAIT	LOGO		
ss	SmartStax [®]	YieldGard VT Rootworm, Herculex® RW, YieldGard VT PRO® Corn Borer and Herculex® protection, Roundup Ready® 2 Technology and LibertyLink®	SmartStay.		
SS/RIB	SmartStax® RIB Complete® Corn Blend	5% RIB, YieldGard VT Rootworm, Herculex® RW, YieldGard VT PRO® Corn Borer and Herculex® protection, Roundup Ready® 2 Technology and LibertyLink®	SmartStax:		
VT2P	VT Double PRO®	YieldGard VT PRO® Corn Borer protection, Roundup Ready® 2 Technology	√ TDouble _{PR0}		
VT2P/RIB	VT Double PRO® RIB Complete® Corn Blend	5% RIB, YieldGard VT PRO® Corn Borer protection, Roundup Ready® 2 Technology	VTDoublePRO*		
RR	Roundup Ready® Corn 2	Roundup Ready® Corn 2	Roundup Ready:		
DGVT2P	DroughtGard® VT Double PRO® Corn Blend	DroughtGard® YieldGard VT PRO® Corn Borer protection, Roundup Ready® 2 Technology	DroughtGard VTDoublePRO		
DGVT2P/RIB	DroughtGard® VT Double PRO® RIB Complete® Corn Blend	5% RIB, DroughtGard® YieldGard VT PRO® Corn Borer protection, Roundup Ready® 2 Technology	DroughtGard ###################################		
AS3000GT	Agrisure [®] 3000GT	Agrisure $^{\$}$ Corn Borer and Rootworm protection, Glyphosate Tolerant and LibertyLink $^{\$}$	Agrisure LIBERTY 3000GT LINK		
AS3011A	Agrisure Artesian® 3011A	Agrisure Artesian® and Agrisure® Corn Borer, Rootworm, Glyphosate Tolerant and LibertyLink®	Agrisure Artesian 3011A LIBERTY LINK		
AS3111	Agrisure Viptera [®] 3111	Agrisure® Corn Borer, Rootworm and Broad Lepidopteran protection, Glyphosate Tolerant and LibertyLink®	Agrisure Viptera LIBERTY LINK W		
GT	Agrisure® GT	Agrisure® Glyphosate Tolerant	✓ Agrisur€GT		
AS3122-EZ	Agrisure [®] 3122 E-Z Refuge [®]	Agrisure® E-Z Refuge®, Agrisure® Glyphosate Tolerant, Agrisure® Corn Borer and LibertyLink®, Agrisure® Rootworm Protection and Herculex® XTRA Insect Protection	Agrisure 3122 Ez Reduge		
AS3220-EZ	Agrisure Viptera® 3220 E-Z Refuge®	Agrisure Viptera® E-Z Refuge®, Corn Borer, LibertyLink®, Glyphosate Toleran and Herculex® I Insect Protection	Agrisure Viptera 3220 E7 Refuge		
AS3220A-EZ	Agrisure Viptera® 3220A E-Z Refuge®	Agrisure Artesian®, Agrisure® Corn Borer, LibertyLink®, Glyphosate Tolerant and Herculex® I Insect Protection	Agrisure Viptera 3220A E-7 Refuge		





- . Flint-dent hybrid for cool, northern maturity zones • Medium-tall, aggressive-growing hybrid; excellent
- silage potential
- Large flex ear for wide adaptation to most soils and populations tested
- Silage-only product

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight

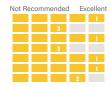


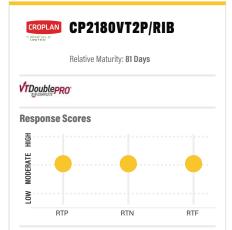
CP2123VT2P/RIB Relative Maturity: 81 Days VTDoublePRO **Response Scores** HIGH MODERATE WO. RTP RTN RTF

- Consistent yield potential and excellent
- · Very early flowering product with fast drydown
- Mostly fixed, girthy ear with good tip fill
- · Excellent moisture-stress tolerance in cool

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight





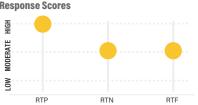
- Position in average to high yield potential acres
- Strong vigor, stalks and roots
- · Maximize yield with moderate to high populations
- Flowers early for RM, keep in zone

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



CP2288VT2P/RIB Relative Maturity: 82 Days **V**TDoublePRO **Response Scores**



- Excellent yield stability across all environments; strong stress tolerance
- Excellent root strength with strong stalks and Goss's wilt tolerance
- · Moderate response to enhanced nitrogen
- · Keep in relative maturity zone

Characteristics

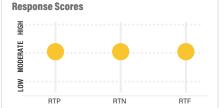
Seedling Vigor Drought Tolerance Root Strength Stavgreen Stalk Quality Dry Down Test Weight



CP2315VT2P/RIB

Relative Maturity: 83 Days

VTDoublePRO



- Excellent drought tolerance to move across variable and tough acres
- Solid agronomics with strong defensive characteristics
- Manage with populations and fungicide
- Flowers early for RM, keep in zone

Characteristics

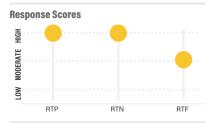
Seedling Vigor Drought Tolerance Root Strength Stavgreen Stalk Quality Dry Down Test Weight



CP2587VT2P/RIB

Relative Maturity: 85 Days

VTDoublePRO



- Strong yield potential across multiple soil types and yield environments
- Strong staygreen and root strength ratings
- Optimize yield with high population and nitrogen
- Fungicide application recommended for gray leaf spot control

Characteristics

Seedling Vigor Drought Tolerance Root Strenath Stavgreen Stalk Quality Dry Down Test Weight



KEY

Scale

1 = Excellent 2 = Strong

Product descriptions and ratings are generated from Answer Plote trials and/or from the genetics supplier and may change as additional data is gathered. 3 = Acceptable





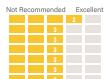
Response Scores - To Be Determined



- Excellent consistency and high yield potential from West to East
- Strong emergence and improved yield potential compared to current line-up
- · Great late-season intactness with a semi-flex ear
- Average Goss's tolerance, use caution in fields with high pressure

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight

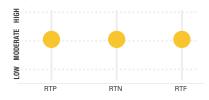


CROPLAN CP2520RR

Relative Maturity: 86 Days



Response Scores



- · Strong stress tolerance on heavy and moderate
- · Excellent roots and drought tolerance
- Nice ear flex for lower populations
- Optimum emergence when planted in warm soils

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight

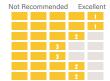


CP2790VT2P/RIB Relative Maturity: 87 Days **V**TDoublePR0 **Response Scores** 표 MODERATE WO-

- · High-yielding product with strong ear flex and
- Right-yielding product with strong ear nex and drought tolerance
 Excellent seedling vigor for early planting
 Strong ear flex with a moderate response-to-nitrogen; can fit a broad range of growing conditions
- · Manage for late-season stalks and Goss's wilt

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight

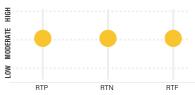


CP2851VT2P/RIB

Relative Maturity: 88 Days

VTDoublePRO

Response Scores



- Great option for Red River Valley and East
- Solid stalks, roots, and emergence
- · Semi-Determinate ear; keep plant densities moderate to high
- Keep on rotated acres

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



CP2845SS/RIB

[VTP2/RIB]⁴

Relative Maturity: 89 Days

SmartStax



Response Scores



- High-yield-potential product for most soil types and environments
- Earlier flowering date and fast drydown
- High response-to-nitrogen and population optimizes yield potential
- Manage placement for Goss's wilt

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight

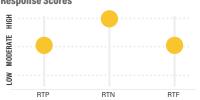


CP2965VT2P/RIB

Relative Maturity: 89 Days

VTDoublePR0

Response Scores



- Yield leader in 85-90 RM in 2018 Answer Plot®
- Excellent early vigor for early planting
- Moderate response-to-population and high response-to-nitrogen help drive additional yield on average to productive soils
- · Acceptable Goss's wilt tolerance

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



Scale 1 = Excellent

2 = Strong

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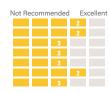


표 MODERATE TOW

- · Well adapted for planting across yield environments and soil types
- Strong early vigor and very good stress tolerance
- · Good ear flex at low populations and maintains ear size at high populations
- Acceptable Goss's wilt tolerance

Characteristics

Seedling Vigor **Drought Tolerance** Root Strength Staygreen Stalk Quality Dry Down Test Weight



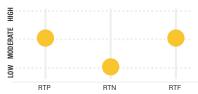
RTF

CP3314VT2P/RIB

Relative Maturity: 93 Days

VTDoublePRO

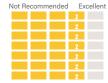




- Tough-acre hybrid for low-yielding environments
- Solid agronomic package
- Flex ear for variable planting populations
- · Manage for Goss's wilt

Characteristics

Seedling Vigor Drought Tolerance Root Strength Stavareen Stalk Quality Dry Down Test Weight

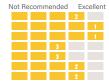


CP3337VT2P/RIB Relative Maturity: 93 Days **V**TDoublePRO **Response Scores** 뜶 MODERATE TOW

- · Solid yield potential with early flowering enables northern movement
- Massive roots for coarse soil types and consistent silking under drought stress
- Moderate response-to-population handles variable plant densities
- Not recommended for acres with Goss's wilt history

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight

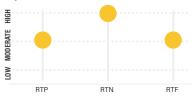


CP3399SS/RIB

[VTP2/RIB]* Relative Maturity: 94 Days

SmartStax

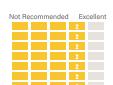
Response Scores



- · Best-positioned in high-vield environments
- Medium-stature hybrid that has strong staygreen
- Optimize yield with enhanced nitrogen management
- · Manage for Goss's wilt

Characteristics

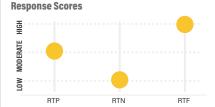
Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



CP3490VT2P/RIB

Relative Maturity: 94 Days

VTDoublePR0°



- High-yield potential hybrid with versatility
- Strong drought tolerance allows placement on
- Excellent emergence allows for early-plant option
- · Acceptable drydown

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Test Weight



CP3499VT2P/RIB

Relative Maturity: 94 Days

VTDoublePR0

Response Scores



- Excellent consistency in all yield environments from east to west
- Offers strong roots, stalks and staygreen
- Some ear flex, although great stress tolerance allows for higher planting populations
- · Medium-short hybrid with medium-low ear placement

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



KEY

Scale

1 = Excellent

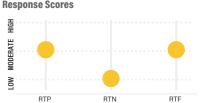
2 = Strong

3 = Acceptable

4 = Manage 5 = Not Recommended Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered.



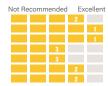




- Excellent choice for light, droughty soils
- Defensive companion to the 99 series with excellent heat stress tolerance
- Moderate and low response scores allow for variable placement and management
- Use caution on heavy, sticky, poorly drained soils; not recommended for Goss's wilt acres

Characteristics

Seedling Vigor **Drought Tolerance** Root Strength Staygreen Stalk Quality Dry Down Test Weight



CROPLAN CP3575SS/RIB

[VTP2/RIB*, CONV] Relative Maturity: 95 Days

SmartStax

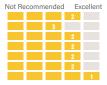
Response Scores



- Excels in moderate- to high-yield environments and moves across all soil types
- Strong stalk quality and root strength
- Has good ear flex for low plant densities, but will respond to higher management
- Manage for Goss's wilt

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



CP3614VT2P/RIB Relative Maturity: 96 Days **V**TDoublePR0° **Response Scores** MODERATE LOW

Tough-acre product ideal for low- to medium-yield environments

RTN

- · Excellent roots and late-season intactness with strong test weight
- High response-to-population; also handles variable populations well
- · Limited capability in high-yield environments

Characteristics

RTP

Seedling Vigor Drought Tolerance Root Strenath Staygreen Stalk Quality Dry Down Test Weight



RTF

CROPLAN CP3699RR Relative Maturity: 96 Days Roundup Ready **Response Scores** HIGH

- MODERATE LOW
- · Adaptable across most soil types; able to move into low-yield environments
- Consistent hybrid handles stress well with excellent emergence, roots and stalks
- Moderate response-to scores provide versatility for positioning and managing this hybrid

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



CP3705SS/RIB

Relative Maturity: 97 Days

SmartStax

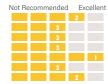
Response Scores



- Excels in both high- and moderate-yield environments
- · Handles stress well; excellent stalks and strong seedling vigor
- High response-to-population and fungicide; able to handle corn-on-corn acres

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



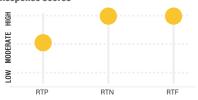
CROPLAN CP3735SS/RIB

Relative Maturity: 97 Days

SmartStax



Response Scores



- · Adaptable east to west; best suited for variable and tough acres
- Excellent test weight and emergence with solid
- Plant at moderate to high densities; fungicide application is recommended
- Keep in RM zone

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight

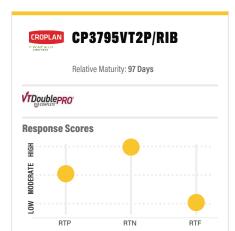


KEY

Scale

- 3 = Acceptable
- 4 = Manage $\mathbf{5} = \mathbf{Not} \; \mathbf{Recommended}$
- Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered.





- Excellent consistency in all yield environments from east to west
- Improved Goss's wilt tolerance over 3899; strong stalks, roots and seedling vigor
- · Optimize yield with enhanced nitrogen management
- Fast-die/fast-dry hybrid with an ear and a stick

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Drv Down Test Weight



CP3899VT2P/RIB Relative Maturity: 98 Days **V**TDoublePR0 **Response Scores** MODERATE LOW RTP RTN RTF Consistent high-yield performance potential across multiple environments and soil types • Excellent seedling vigor; strong stalks, roots and drought tolerance · High response to intensive management; can handle average acres Manage in areas with gray leaf spot and northern corn leaf blight

Not Recommended

Excellent

Characteristics

Drought Tolerance

Seedling Vigor

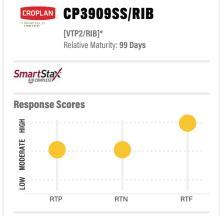
Root Strength

Staygreen

Dry Down

Stalk Quality

Test Weight

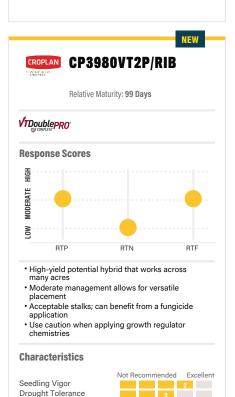


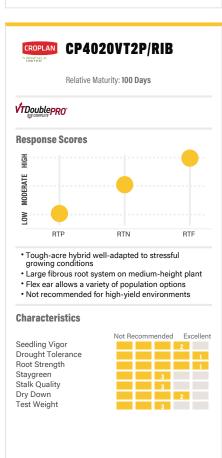
- Stable yield potential across multiple environments; excellent hot-year response
- Early-flowering hybrid with excellent drydown; strong roots and stalks
- Performs well on moderately managed acres with high response-to-fungicide
- · Manage on acres with heavy Goss's wilt pressure

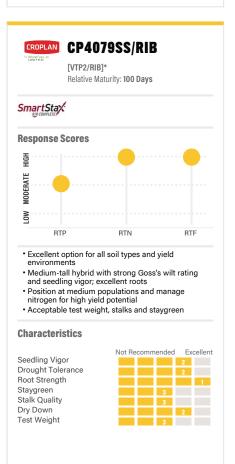
Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight









Scale

Root Strength

Stalk Quality

Staygreen

Dry Down

Test Weight

1 = Excellent

 ${\bf 2} = {\sf Strong}$ 3 = Acceptable

4 = Manage

5 = Not Recommended

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Manage in areas with gray leaf spot and northern

Excellent

corn leaf blight

Characteristics

Drought Tolerance

Seedling Vigor

Root Strength

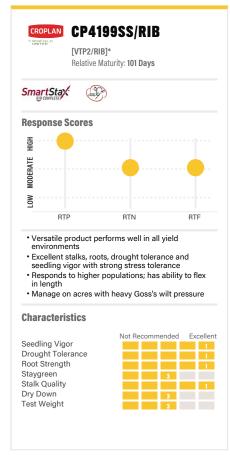
Staygreen

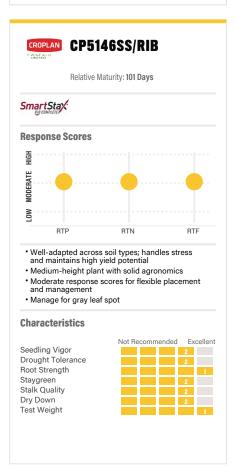
Drv Down

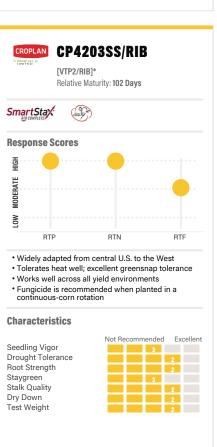
Test Weight

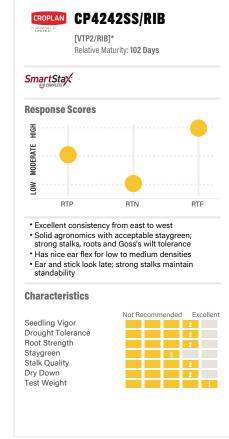
Stalk Quality

CP4188SS/RIB [VTP2/RIB*, CONV] Relative Maturity: 101 Days SmartStax **Response Scores** MODERATE WO. RTP RTN RTF · Works east to west with a widely adapted Very attractive plant type with solid agronomic package Semi-flex ear allows lower densities, but will respond when population is pushed • Handles tough, variable and ideal yield **Characteristics** Not Recommended Excellent Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight









Scale

1 = Excellent

 ${\bf 2} = {\sf Strong}$

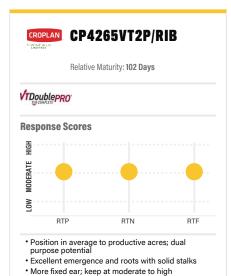
3 = Acceptable

4 = Manage

5 = Not Recommended

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Avoid areas with history of Physoderma node

Not Recommended Excellent

populations

Characteristics

Drought Tolerance

breakage

Seedling Vigor

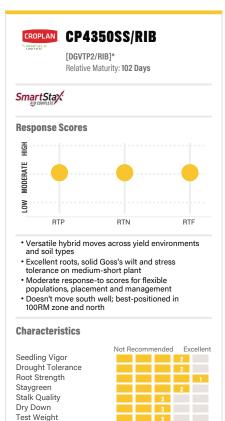
Root Strength

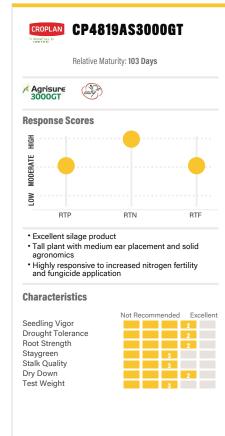
Staygreen

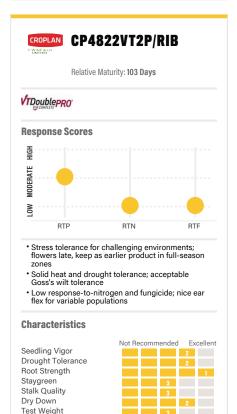
Dry Down

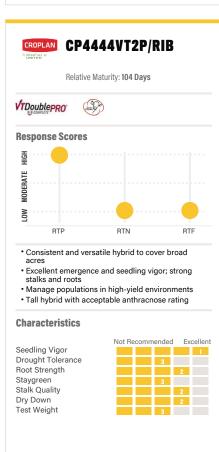
Test Weight

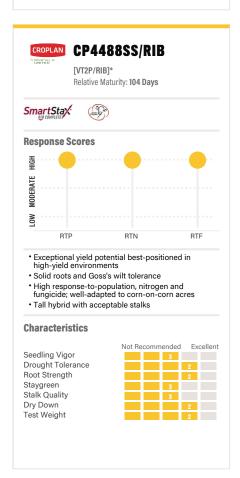
Stalk Quality













Scale

1 = Excellent

 ${\bf 2} = {\sf Strong}$ 3 = Acceptable

4 = Manage

5 = Not Recommended

Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered.



CP4549SS/RIB [VTP2/RIB*] Relative Maturity: 105 Days SmartStax **Response Scores**

- H MODERATE LOW RTP RTN RTF
- Handles stress well with ability to move across yield environments
- Tall plant with solid test weight and Goss's wilt tolerance
- Manage with nitrogen and fungicide; ear flexes to handle variable populations
- Acceptable staygreen, best if kept in rotation

Characteristics

Seedling Vigor **Drought Tolerance** Root Strength Staygreen Stalk Quality Dry Down Test Weight

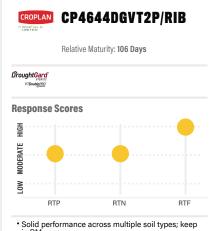


CP4676SS/RIB Relative Maturity: 106 Days SmartStax **Response Scores** MODERATE WO. RTP RTN RTF • Versatile hybrid, position and manage for high • Medium-height hybrid with excellent emergence, seedling vigor and test weight • Position at medium populations and manage nitrogen for high-yield-potential • Fungicide application recommended in areas prone to gray leaf spot **Characteristics**

Not Recommended

3

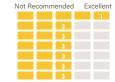
Excellent



- Solid performance across multiple soil types; keep in RM zone
- Excellent emergence and seedling vigor; solid disease package
- Responds to additional management; ear flexes to handle variable populations
- Best-suited for rotation; fungicide application recommended for late-season stalk quality

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



NEW

CROPLAN CP4757VT2P

Relative Maturity: 107 Days

VTDoublepRO*

Response Scores - To Be Determined



- Stable hybrid best suited for the Central and Eastern corn belt
- Excellent yield potential combined with strong drought tolerance
- · Semi-determinate ear requires moderate to moderately-high populations
- Average Goss's tolerance, use caution in fields with high pressure

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



CROPLAN CP4791AS3111

Relative Maturity: 107 Days

Seedling Vigor

Root Strength

Staygreen Stalk Quality

Dry Down

Test Weight

Drought Tolerance



Response Scores



- Solid hybrid moves across yield environments and soil types; moves south of 110RM zone well; dual-purpose option
- Medium-tall plant with outstanding late-season intactness
- Strong ear flex; can handle variable populations; moderate response-to-fungicide
- Best-suited for rotated acres

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



CP4895SS/RIB

[VTP2/RIB]*

Relative Maturity: 108 Days

SmartStax

Response Scores



- Consistent performance in medium soils
- · Medium-height plant with solid agronomics and disease package
- High-yield-potential, especially at medium-to-high plant populations
- Not a "plant first" hybrid to ensure optimum emergence

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



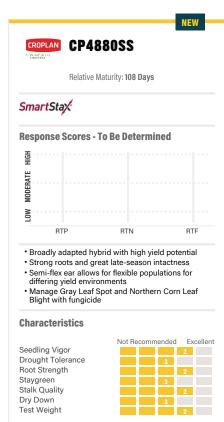
Scale

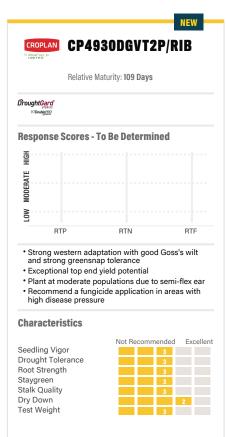
1 = Excellent

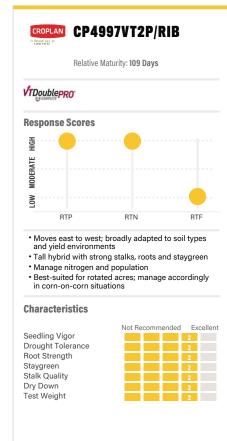
 ${\bf 2} = {\sf Strong}$ 3 = Acceptable

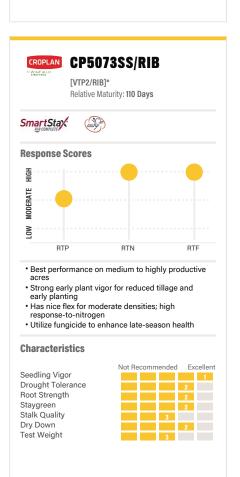
4 = Manage 5 = Not Recommended Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered.

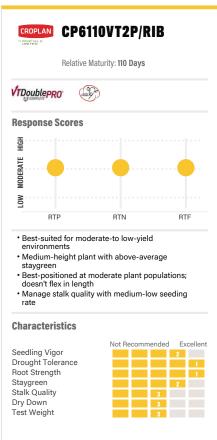


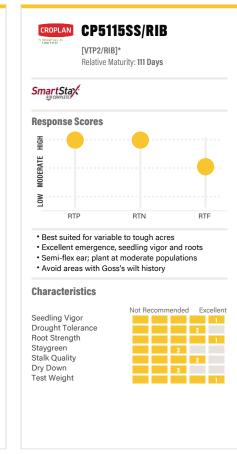












Scale

1 = Excellent

 ${\bf 2} = {\sf Strong}$

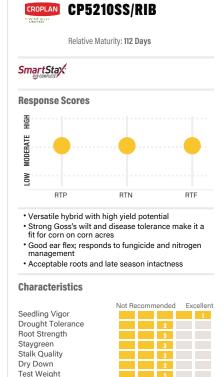
3 = Acceptable

4 = Manage

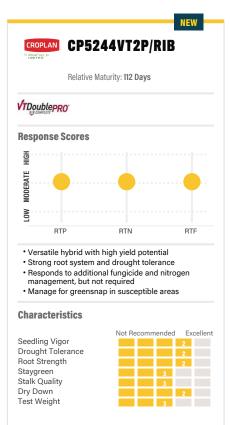
5 = Not Recommended

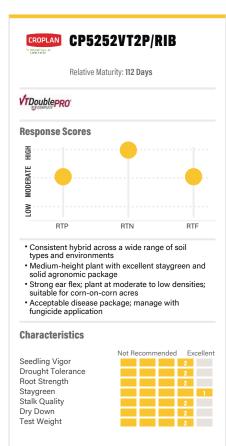
Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered.

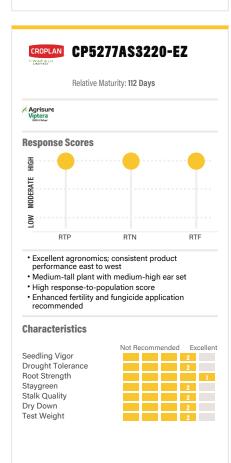


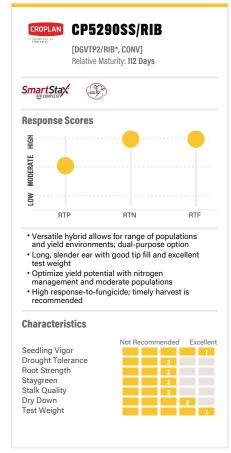


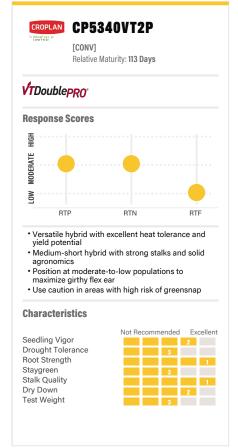
NEW













Scale

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Product descriptions and ratings are generated from Answer Plot[®] trials and/or from the genetics supplier and may change as additional data is gathered.



CP5335SS/RIB [VTP2/RIB]* Relative Maturity: 113 Days SmartStax **Response Scores** HIGH MODERATE LOW RTP RTN RTF

- Tremendous consistency across variable yield environments
- Excellent agronomics, including stalks and late-season intactness; improved Goss's wilt rating over 5370
- Acceptable ear flex for variable densities; strong plant health for continuous corn
- · Benefits from enhanced nitrogen management

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Drv Down Test Weight

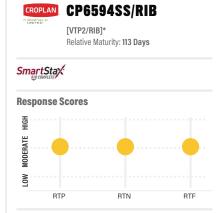


CP5370SS/RIB [VTP2/RIB]⁴ Relative Maturity: 113 Days SmartStax **Response Scores** 퍮 MODERATE LOW RTP RTN RTF Versatile, dual-purpose product; adapted across multiple yield environments • Excellent stalks, roots and test weight; strong drvdown Optimize yield potential with enhanced nitrogen management and mod-high plant densities Best-positioned on rotated acres; ear tip back influenced by genetics

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight





- Widely adapted east to west with excellent heat tolerance and high-yield-potential
- Solid agronomics; excellent stalks and roots; acceptable Goss's wilt tolerance
- Moderate response-to-nitrogen and population
- Take advantage of fast drydown at harvest; keep in 110RM zones

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



NEW CP5497VT2P/RIB Relative Maturity: 114 Days VTDoublePRO **Response Scores** H MODERATE LOW RTP RTN RTF

- Widely adapted east to west across multiple soil types and yield levels
- · Strong roots and drought tolerance with excellent
- Semi-flex ear and high response-to-population score allow positioning across yield environments
- Manage fields with history of Anthracnose and Southern rust

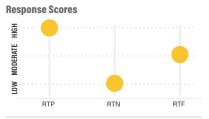
Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



CROPLAN CP6818 CONV

Relative Maturity: 114 Days



- Conventional hybrid widely adapted across yield environments; excellent silage option

 • Excellent roots, stalks and vigor with exceptional
- ability to silk and kernel fill under stress
- Great option for continuous-corn; semi-fixed ear that performs best at moderate-to-high plant densities

Characteristics

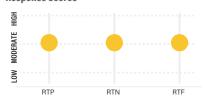
Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



CP5550VT2P/RIB

Relative Maturity: 115 Days

VTDoublePRO Response Scores



- · Position in average to high yield potential acres; dual purpose option
- Solid agronomic and disease package
- Keep plant densities moderate to high
- Acceptable Goss's wilt tolerance

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



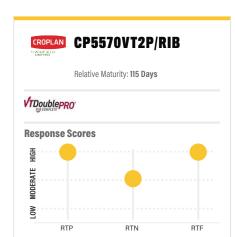
Scale

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 ${\bf 2} = {\sf Strong}$ 3 = Acceptable

4 = Manage 5 = Not Recommended Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered





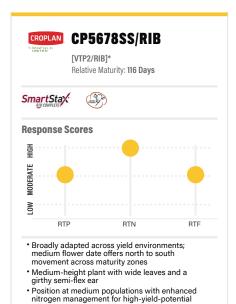
- Excellent yield potential for eastern and southern environments
- Medium plant height and ear placement
- High response-to-population score to push populations and maximize yield potential; fungicide is highly recommended
- · Use caution in areas with high risk of greensnap

Characteristics

Seedling Vigor **Drought Tolerance** Root Strength Staygreen Stalk Quality Dry Down Test Weight



NEW CP5588DGVT2P/RIB Relative Maturity: 115 Days Drought Gard **Response Scores - To Be Determined** MODERATE LOW RTP RTN RTF · Best performance in the central and eastern corn • Top end yield potential with very good stress tolerance · Excellent dual purpose silage potential · Use caution in high Physoderma regions **Characteristics** Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality



Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight

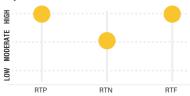


Relative Maturity: 117 Days

CP5789VT2P/RIB

VTDoublePRO

Response Scores



- Versatile hybrid with strong stress tolerance; bestsuited for narrow or twin rows
- Tall plant with excellent stalks, roots, staygreen
- and test weight; great dual-purpose option
 Position at medium-to-high populations;
 moderate response-to-nitrogen score
- · Fungicide application recommended

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



CP5760TRE

Relative Maturity: 117 Days

NEW

Trecepta^a

Dry Down

Test Weight

Response Scores - To Be Determined



- · Best performance on average to highly productive
- Trecepta® trait for ear feeding pests including Western Bean Cutworm
- Semi-flex ear allows for flexible populations for differing yield environments
- · Manage nitrogen to maximize yield potential

Characteristics

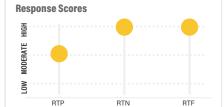
Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



CROPLAN CP5814SS/RIB

Relative Maturity: 118 Days

SmartStax



- Broadly adapted; medium-early flower date for flexibility in moving north and south
 Medium-height plant; strong roots and stalks;
- excellent staygreen
- Semi-flex ear; highly responsive to enhanced nitrogen management
- Fungicide recommended in areas with heavy gray leaf spot pressure

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



Scale

1 = Excellent

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4 = Manage

5 = Not Recommended

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VTDoublePR0

Response Scores



- Broad southern adaptability east to west; excellent silage potential
 Medium-tall plant with strong stalks, staygreen and seedling vigor
 Performs best at medium to medium-high populations.
- populations

 Manage nitrogen for top-end yield potential; fungicide recommended on gray leaf spot areas

Characteristics

Seedling Vigor Drought Tolerance Root Strength Staygreen Stalk Quality Dry Down Test Weight



BRAND CP2790VT2P/RIB* CP2587VT2P/RIB* CP2315VT2P/RIB* CP2330VT2P/RIB* CP2288VT2P/RIB* CP2180VT2P/RIB CP2965VT2P/RIB* CP2845SS/RIB* CP2851VT2P/RIB* **CP2520RR** CP2123VT2P/RIB* CP184RR LI,II, 2M AN I, ROAD O state of the sta of security of the state of the 89 89 88 87 98 85 83 83 82 81 81 80 Strilling of Sandsay J.H. And And And D. And 工 \leq _ ≤ 工 ≤ ェ ≥ I 3 \pm \leq \leq 3 工 \leq Z 3 \leq \leq ≤ \leq 工 \leq \leq 工 工 * Hillison of Hills \leq 工 , the state of the ≤ 工 ≤ 工 \leq ≤ \leq ≤ ≤ ≤ ≤ 工 Safed Janut 3 2235 2210 2200 2175 2190 2125 2075 2075 2065 2025 2010 2000 1 Habitueld 1130 1120 1180 1150 1160 1160 1080 1100 1090 1070 1040 1060 E O lifted let M-E M-L ш ш ≤ т ≤ ≤ ≤ ≤ into the s ≤ M-T M-T M-T ≤ ≤ M-T M-T ≤ ≤ M-T M-L Z ≤ \leq ≤ ≤ ≤ < 3 3 \leq 3 3 Kaller PINK RED SWOR BITEN SF 끋 끋 끈 ŞF SF SD SF SF SF SF SD Josh Allinas 14-16 16-18 16-18 16-18 16-18 18-20 14-18 16-18 16-18 16-2018 - 2016-18 KIJEND WELS III Alle II S TOOM _ 2 ω __ w ω 2 2 2 2 O la a filos Sole and Litherd ω w ယ w 2 w 2 ယ w 2 IIII MISAL 2 2 2 2 2 2 2 4 Indes ka leas 2 w w 2 2 w w ယ BIOM ယ N/A N/A N/A N/A N/A N/A 12 suffering 2 2 ယ w 2 respect against that a de rea de differente de la companya de la company N/A NA N/A N/A ω 4 4 2 ယ 4 5 TOR IS SETURIO 4 w w N/A ယ ယ N/A 2 N/A N/A N/A N/A

KEY

Product descriptions and ratings are

Scale

2 = Strong

4 = Manage 3 = Acceptable

5 = Not Recommended

1 = Excellent

as additional data is gathered. from the genetics supplier and may change generated from Answer Plot® trials and/or

RTP/RTN/RTCC/RTF Ratings

H = High Response **TBD** = To be tested in 2021 M = Moderate Response L = Low Response

Plant Height

M = Medium S = Short T = Tall

3 Ear Height

Flower Date

H = High **L** = Low M = Medium

E = Early L = Late M = Medium

4 Ear Flex

FL = Flex
SF = Semi-flex
FX = Fixed

Staygreen

enhancing hybrid standability.

strong leaf-disease resistance, Late-season health coming from

data and may change as more data is collected. factors. Ratings on new hybrids are based on limited temperature, crop production patterns and other trials that change with variations in rainfall, These ratings reflect trends observed in research

Follow IRM guidelines and refuge configurations to preserve the benefits and insect protection of

these technology crops.

**GDUs published for each product are an environmental factors. estimate and the actual GDUs in a given year/location can vary based upon

NEW											NEW				NEW		
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KEY

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2 = Strong
3 = Acceptable
4 = Manage
5 = Not Recommended

from the genetics supplier and may change as additional data is gathered. Product descriptions and ratings are generated from Answer Plot® trials and/or

RTP/RTN/RTCC/RTF Ratings

L = Low Response
M = Moderate Response
H = High Response
TBD = To be tested in 2021

Plant Height

T = Tall

M = Medium

S = Short

8 Ear Height

H = High
M = Medium
L = Low

4 Ear Flex

FL = Flex
SF = Semi-flex
FX = Fixed

5 Flower Date

M = Medium
E = Early L = Late

Staygreen

Late-season health coming from strong leaf-disease resistance, enhancing hybrid standability.

*Follow IRM guidelines and refuge configurations to preserve the benefits and insect protection of

these technology crops.

temperature, crop production patterns and other factors. Ratings on new hybrids are based on limited These ratings reflect trends observed in research trials that change with variations in rainfall, data and may change as more data is collected. **GDUs published for each product are an estimate and the actual GDUs in a given year/location can vary based upon 1 environmental factors.

BRAND CP4265VT2P/RIB* CP4203SS/RIB* CP5146SS/RIB* CP4199SS/RIB* CP4188SS/RIB* CP4099SS/RIB* CP4079SS/RIB* CP4020VT2P/RIB* CP4488SS/RIB* CP4444VT2P/RIB* CP4822VT2P/RIB* CP4819AS3000GT* CP4350SS/RIB* CP4242SS/RIB* LI,II, 2M AN I, ROAD O state of the sta of the Hall of the Parties of the Pa 104 104 102 102 103 102 102 101 101 101 100 100 103 100 Striffers in students 工 ≤ \leq ≤ ≤ ≤ 工 ≤ ≤ \pm ≤ 工 3 Z \pm Z 工 工 Z \leq \leq \leq ≤ 工 \leq ≤ 工 工 * Hillison of Hills \leq \leq \leq , the state of the ェ ≤ \leq \leq 工 ≤ ≥ ≤ ≤ 工 ェ 工 Saled Jahora 2575 2500 2600 2580 2575 2530 2550 2560 2540 2545 2525 2490 2500 2480 1 Habitueld 1290 1300 1300 1300 1290 1280 1300 1280 1290 1280 1280 1310 1300 1280 O lifted he ? M-L M-E ≤ \leq ≤ ≤ ≤ Z ≤ \leq ≤ ≤ into the s M-S M-T ≥ ≤ ≤ ≤ M-T M-T ≤ ≤ M-H M-L ≤ 3 M-H ≤ 3 **M**-H M-H 3 3 ≤ \leq **Valle**3 WHITE RED RED RED RED RED PINK RED RED RED RED RED RED RED SWORT BATTON 근 ŞF 끋 SF 끋 ŞF SF SF SD SD SF SF SF SF Josh Aufras 16-18 14-16 16-18 14-16 16-18 16-20 16-20 16 - 1816-18 16-18 14-16 16-18 16-18 14-16 KIJEND WELS III Alle II S TOOM 2 cu 2 2 __ 2 ω 2 _ 2 O la a filos Some and Listened ω 2 w w ယ w ω IIII MEST 2 2 2 w 2 2 w w 2 2 Indes ka leas 2 2 2 2 w 2 2 2 2 2 2 HCTB 12 suffering 2 in in it is a supplied to the a de rea de differente de la companya de la company N/A 2 N/A N/A N/A N/A 2 N/A N/A N/A N/A N/A w 2 2 ယ w Ion to Jahoulid ယ N/A w ω N/A N/A ω N/A N/A 5 N/A ယ ယ NA N/A ω N/A N/A N/A N/A

KEY

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Plant Height

M = Medium S = Short T = Tall

3 Ear Height **H** = High

M = Medium

L = Low

4 Ear Flex

FL = Flex
SF = Semi-flex
FX = Fixed

Flower Date

E = Early L = Late M = Medium

Staygreen

enhancing hybrid standability. strong leaf-disease resistance, Late-season health coming from

data and may change as more data is collected. factors. Ratings on new hybrids are based on limited temperature, crop production patterns and other trials that change with variations in rainfall, These ratings reflect trends observed in research

Follow IRM guidelines and refuge configurations to

these technology crops.

preserve the benefits and insect protection of

environmental factors.

**GDUs published for each product are an

estimate and the actual GDUs in a given year/location can vary based upon

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Scale

4 = Manage

5 = Not Recommended

1 = Excellent 2 = Strong 3 = Acceptable

as additional data is gathered. from the genetics supplier and may change generated from Answer Plot® trials and/or Product descriptions and ratings are

RTP/RTN/RTCC/RTF Ratings

H = High Response **TBD** = To be tested in 2021 L = Low Response M = Moderate Response

Plant Height

M = Medium S = Short T = Tall

3 Ear Height

H = High **L** = Low M = Medium

4 Ear Flex

FL = Flex
SF = Semi-flex
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Flower Date

E = Early L = Late M = Medium

Staygreen

enhancing hybrid standability.

Late-season health coming from strong leaf-disease resistance,

data and may change as more data is collected. temperature, crop production patterns and other factors. Ratings on new hybrids are based on limited trials that change with variations in rainfall, These ratings reflect trends observed in research

Follow IRM guidelines and refuge configurations to these technology crops. preserve the benefits and insect protection of

**GDUs published for each product are an environmental factors. year/location can vary based upon estimate and the actual GDUs in a given

				NEW				NEW								NEW	NEW		
CP6027VT2P/RIB*	CP5814SS/RIB*	CP5789VT2P/RIB*	CP5678SS/RIB*	NEW CP5588DGVT2P/RIB*	CP5570VT2P/RIB*	CP5550VT2P/RIB*	CP6818 CONV	CP5497VT2P/RIB*	CP6594SS/RIB*	CP5370SS/RIB*	CP5335SS/RIB*	CP5340VT2P	CP5290SS/RIB*	CP5277AS3220-EZ*	CP5252VT2P/RIB*	CP5244VT2P/RIB*	CP5210SS/RIB*	RM: 112-120	BRAND
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KEY

Scale

1 = Excellent2 = Strong3 = Acceptable 4 = Manage

5 = Not Recommended

from the genetics supplier and may change as additional data is gathered. generated from Answer Plot® trials and/or Product descriptions and ratings are

RTP/RTN/RTCC/RTF Ratings

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5 Flower Date

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E = Early L = Late

Staygreen

enhancing hybrid standability. Late-season health coming from strong leaf-disease resistance,

temperature, crop production patterns and other factors. Ratings on new hybrids are based on limited These ratings reflect trends observed in research trials that change with variations in rainfall, data and may change as more data is collected.

*Follow IRM guidelines and refuge configurations to preserve the benefits and insect protection of

these technology crops.

**GDUs published for each product are an estimate and the actual GDUs in a given environmental factors. year/location can vary based upon





Product Name	_
Attributes	
Placement	
Product Name	_
Attributes	
Placement	
Product Name	_
Attributes	
Placement	
Product Name	_
Attributes	
Placement	



SOYBEAN

1 of 2

There's no good reason risk has to increase with yield.

We won't promise you the world. We will promise you an honest and insightful approach to maximizing your soybean yield potential. At WinField United, we use proven technologies to match the right soybean genetics and traits to your field's conditions. Plus, our CROPLAN® seed varieties are selected for disease tolerance that helps protect the soybean plant throughout all stages of growth. We know this is the best way to help you achieve optimal return on your seed and crop inputs.

KEY TAKEAWAYS

- Use appropriate trait technology to achieve effective weed control.
- 2 Introduce stability to your fields with CROPLAN® WinPak® soybean varieties.
- 3 Ensure optimal plant health at the start of the season with Warden® CX seed treatment.
- 4 Use the R7® Tool to help choose the right soybean varieties for your specific fields.
- **5** Select varieties for disease tolerance and manage them throughout the season.

MANAGE WEEDS WITH TRAIT TECHNOLOGY

CROPLAN® soybean seed offers the newest genetics with multiple herbicide trait options developed to effectively manage your weed-resistance issues.











SOYBEAN HERBICIDE TOLERANCE AND WEED CONTROL

Weed control in soybeans starts with seed selection. With several herbicide-tolerant traits now available and more on the way with full commercial approval, the number of tools in the toolbox is increasing. But as you face hard-to-control weeds, creating a plan for season-long weed management is critical. The chart outlines CROPLAN® soybean herbicide-tolerant varieties available today. These traits offer some great postemergence options.

	Glyphosate	Glufosinate	2,4-D Choline	Dicamba
LIBERTYLINK®		X		
XTENDFLEX®	X	X		X
ROUNDUP READY 2 YIELD®	X			
ROUNDUP READY 2 XTEND®	X			X
ENLIST E3®	X	X	X	

REDUCE RISK WITH WINPAK® SOYBEAN VARIETIES

WinPak® soybean varieties from CROPLAN® seed are a unique combination of two varieties that provide an exceptional level of stability throughout the field. Designed to address field variability, WinPak® varieties have excellent yield potential on productive acres along with the ability to handle the stress of performing on more challenging acres.

EXAMPLE OF HOW A WINPAK® VARIETY CAN BE FORMULATED

	VARIETY A EXAMPLE	VARIETY B EXAMPLE
PLACEMENT	Average to below-average yield environments.	Best-suited to productive acres.
DISEASE PACKAGE	Strong soybean white mold and iron deficiency chlorosis (IDC) tolerance.	Excellent phytophthora root rot and frogeye field tolerance.
AGRONOMICS	Narrow canopy typeTall heightExcellent standability	Bushy canopy typeMedium heightAverage standability
STRESS TOLERANCE	Excellent stress tolerance.	Strong stress tolerance.

WinPak® varieties are designed to mitigate risk across the whole field by offering more stability on variable acres, delivering high yield potential on productive acres and maintaining consistency on more challenging acres. They also provide an enhanced disease and agronomic package for the whole farm.

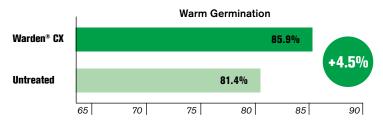


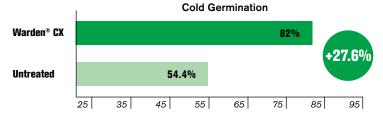


PROTECT YIELD POTENTIAL WITH WARDEN® CX SEED TREATMENT

Guard high-value soybean seed from early-season disease and insect threats with Warden® CX seed treatment. In 2018, testing by an independent seed lab and the University of Minnesota Plant Disease Clinic indicated a positive response to soybean seed treated with Warden® CX seed treatment compared to an untreated control group. Compared to untreated seed, Warden® CX treated seed improved the warm germination test by +4.5% and the cold germination test by +27.6%.

AVERAGE GERMINATION IMPROVEMENT: WARDEN® CX VS. UNTREATED





OPTIMAL CONDITIONS FOR DISEASE INFECTION

FUNGUS	DISEASE	TEMPERATURE (F) RANGE/OPTIMUM	MOISTURE
Pythium	Damping-off	50°-68°/<59°	Saturated
Rhizoctonia	Damping-off	60°-86°/80°	30%-60% water
Phytophthora	Damping-off	59°-86°/77°-80°	Saturated; weekly periodic rain
Fusarium	SDS and root rot	50°-86°/59°	Wet to saturated

MANAGE IN-SEASON

Select your disease package based on field conditions.

- Knowing where yield potential is falling behind alerts you to disease and other potential threats, allowing you to make inseason adjustments.
- Satellite imagery highlights field variability and indicates where appropriate crop inputs might help optimize yield potential.
- Use R7® Tool satellite imagery to monitor plant health.

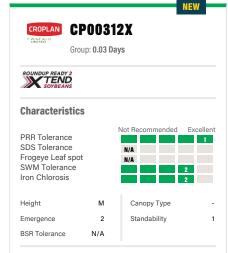




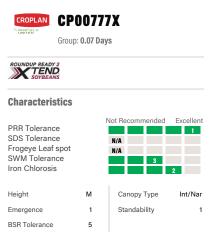
CROPLAN® TRAIT LETTERING FOR SOYBEAN VARIETIES

Descriptive variety numbering and trait lettering systems are used for CROPLAN® soybean varieties.

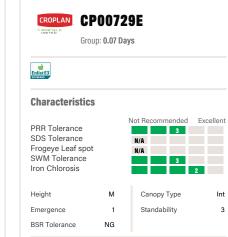
KEY	VARIETY	TRAIT HERBICIDE TOLERANCE	LOGO
ι	LibertyLink [®]	Liberty® tolerant	LIBERTY LINK W
XF	XtendFlex [®]	Roundup®, dicamba and glufosinate tolerant	TENDFLEX SOYBEANS
RR	Roundup Ready 2 Yield®	Roundup® tolerant	Roundup 2 YIELD
X	Roundup Ready 2 Xtend®	Roundup® and dicamba tolerant	ROUNDUP READY 2 TEND SOYBEANS
E	Enlist E3®	Glyphosate, glufosinate and 2,4-D choline tolerant	Enlist E3
s	STS®	Sulfonylurea tolerant	N/A



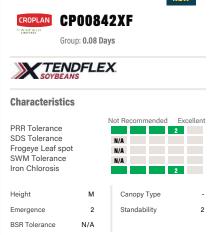
- Improved yield potential at a 0.03 RM
- Versatile placement for variable soils
- Excellent PRR tolerance and strong IDC tolerance
- Use caution on SCN-prone areas



- Strong yield potential in a 0.07 RM
- · Excellent PRR tolerance for wet soils
- Strong IDC
- Use caution in BSR-prone areas



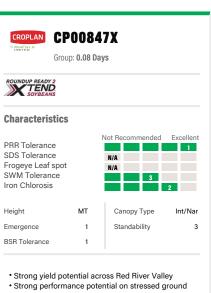
- Early Enlist E3® soybean for Group 00 market
- Position north of Highway 2
- Strong SWM tolerance; acceptable IDC and PRR
- · Best-suited for narrow rows

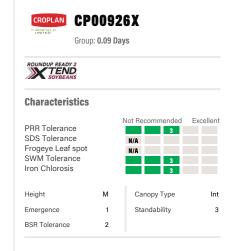


- Strong yield potential variety
- A good fit for the northern North Dakota and Minnesota geographies
- Strong IDC and PRR tolerance
- Use caution in SWM-prone areas



- Strong IDC and BSR tolerance
- Acceptable SWM tolerance



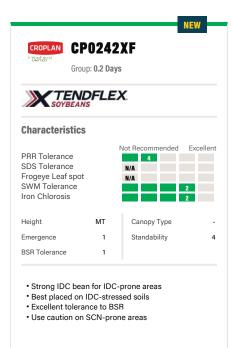


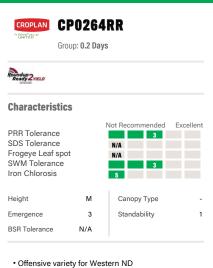
- Strong yield potential on productive soils
- Broadly adaptive bean, moves west well
- Acceptable IDC and strong BSR tolerance
- Not recommended in SCN-prone areas

Scale 1 = Excellent



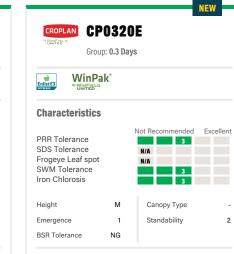
Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered.





• Excellent stress tolerance for westward movement

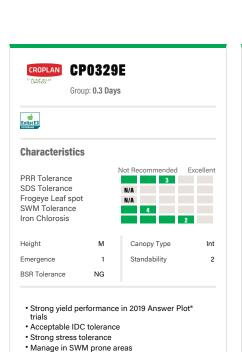
Excellent standability with acceptable emergence
 Avoid high-IDC fields; utilize seed treatments to improve PRR field tolerance

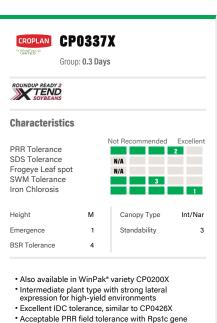


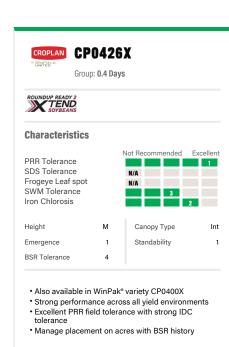
• WinPak® variety consisting of CP0322E and

• Versatile placement for highly productive to

 High yield potential with acceptable IDC and SWM tolerance
 Use caution in BSR-prone areas

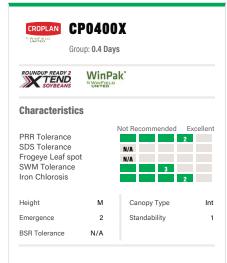




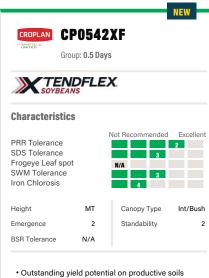




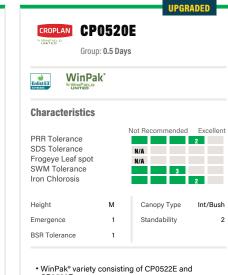
1 = Excellent 2 = Strong 3 = Acceptable 4 = Manage 5 = Not Recommended Product descriptions and ratings are generated from Answer Plot[®] trials and/or from the genetics supplier and may change as additional data is gathered.



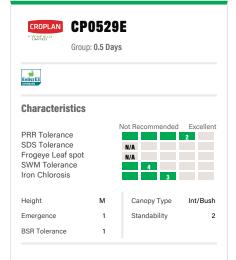
- WinPak® variety consisting of CP0411X and CP0426X
- Better yield potential and SWM tolerance to replace CP0500X
- Strong IDC and PRR tolerance
- Manage in BSR prone areas



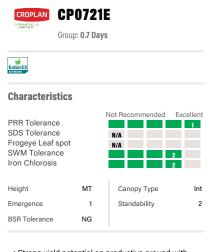
- Solid heat and drought stress tolerance allows western movement
- · Strong PRR tolerance
- Avoid IDC-prone areas



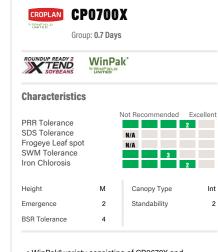
- WinPak® variety consisting of CP0522E and CP0529E
- Strong IDC tolerance
- Acceptable SWM tolerance with strong standability
- Rps3a gene for strong PRR package



- Also available in WinPak® variety CP0520E
- Rps3a gene for resistance to PRR
- Strong PRR package and acceptable IDC tolerance
- Use caution in SWM-prone areas



- Strong yield potential on productive ground with excellent stress tolerance
- Strong IDC tolerance
- Excellent PRR package
- · Not recommended for BSR areas



WinPak® variety consisting of CP0678X and CP0878X

Int

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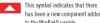
- A versatile WinPak® variety for all yield environments tested
- Solid agronomic package suited for IDC and stressed acres
- · Acceptable SWM tolerance

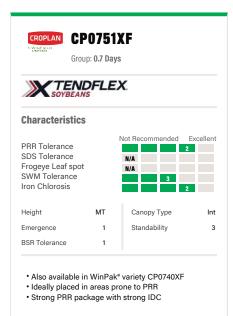


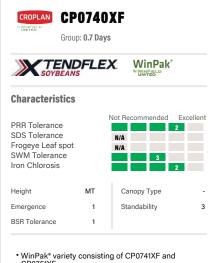
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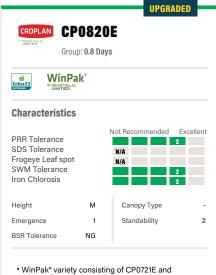
4 = Manage 5 = Not Recommended

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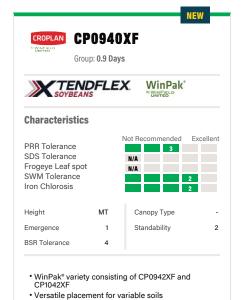


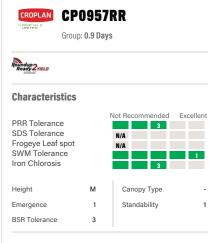


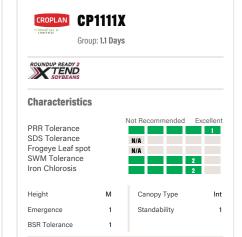
- WinPak® variety consisting of CP0741XF and CP0751XF
- Versatile placement for highly productive to IDC-prone areas to PRR-prone soils
- Strong IDC tolerance and solid PRR package
- Average SWM tolerance

WinPak® variety consisting of CP0721E and CP0822E

- Rps1c,3a/NG PRR gene with strong PRR tolerance for PRR-prone acres
- Strong SWM and IDC tolerance
- Use caution in BSR-prone areas







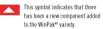
- Top-yielding variety year-over-year in Answer Plot® trials
- · Peking soybean with excellent white mold tolerance
- Acceptable IDC tolerance; stacked gene for Phytophthora resistance
- Also available in WinPak® variety CP1100X
- Well-suited for most yield environments
- Strong IDC and white mold tolerance; strong
- Strong PRR field tolerance supports the lack of PRR gene

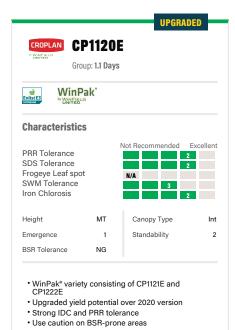
 Strong SWM and IDC tolerance • Use caution in BSR-prone areas

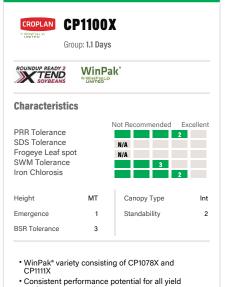
KEY

Scale 2 = Strong

3 = Acceptable 4 = Manage 5 = Not Recommended Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered.



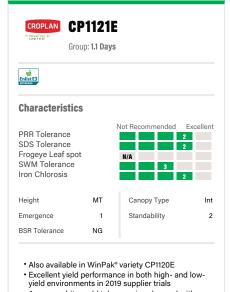




environments tested

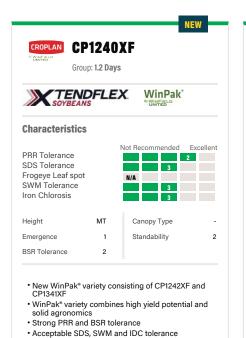
Acceptable SWM tolerance

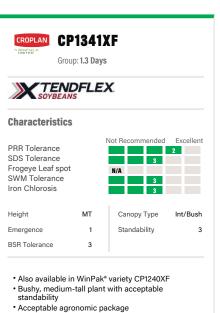
· Solid agronomics with strong IDC tolerance



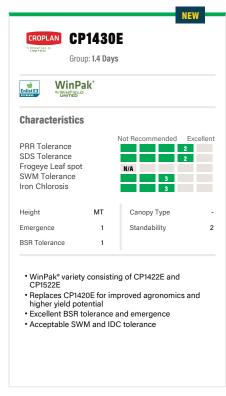
 Average white mold tolerance is enhanced with strong standability

• Use caution on BSR-prone areas





• Use caution on fields with heavy SWM pressure





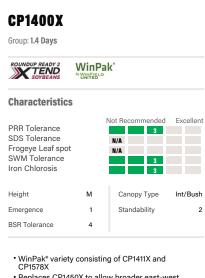
Scale
1 = Excellent
2 = Strong
3 = Acceptable
4 = Manage

5 = Not Recommended

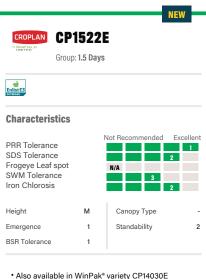
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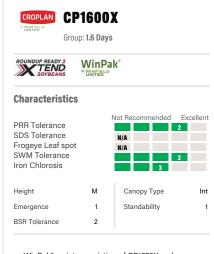
This symbol indicates that there has been a new component added to the WinPak® variety.



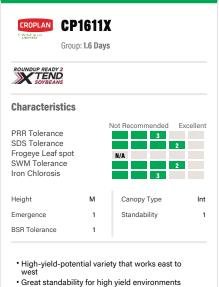
- Replaces CP1450X to allow broader east-west movement
- Acceptable tolerance for IDC, SWM and PRR
- Use caution on BSR-prone areas



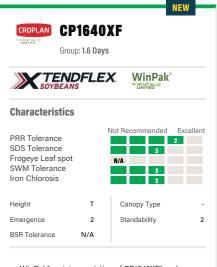
- Also available in WinPak® variety CP14030E
- · Best positioned on fields with PRR and BSR
- Excellent emergence, BSR and PRR tolerance
- Acceptable SWM tolerance



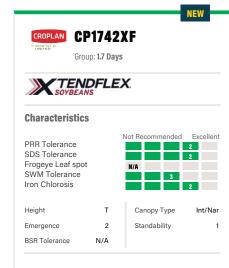
- WinPak® variety consisting of CP1578X and CP1788X
- This combination offers high yield potential and excellent standability
- Excellent agronomics with strong disease package
- Manage on IDC hot spots



- Strong SDS and SWM tolerance
- Acceptable IDC and PRR tolerance



- WinPak* variety consisting of CP1542XF* and CP1742XF
- High yield potential combined with complementary agronomics from each component
- Strong standability and emergence
- Acceptable disease package



- Also available in WinPak® variety CP1640XF
- Solid agronomic package works across a variety
- Excellent standability
- Acceptable SWM tolerance

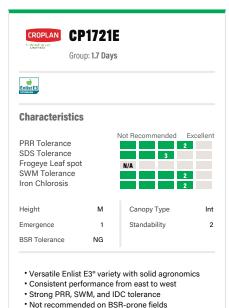


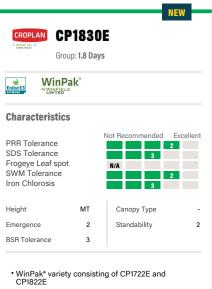
Scale 1 = Excellent 2 = Strong 3 = Acceptable

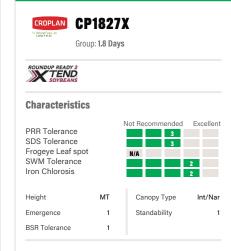
4 = Manage 5 = Not Recommended Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered.



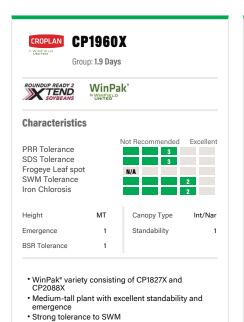
This symbol indicates that there has been a new component added to the WinPak® variety.



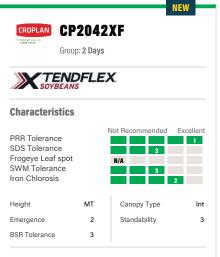


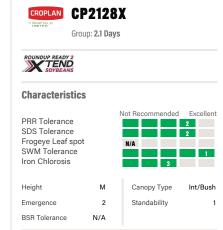


- Strong SWM and PRR ratings make for a versatile fit in humid environments
- · Strong PRR, SWM, emergence and standability
- Acceptable SDS, BSR and IDC tolerance
- Also available in WinPak® variety CP1960X Medium-tall plant type with upright canopy
- Excellent tolerance to BSR; contains Rps1a and Rps3a for PRR tolerance
- Acceptable SDS tolerance



· Acceptable SDS tolerance





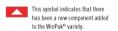
- Standalone variety offers strong yield potential
- Works well on IDC-prone fields
- Excellent PRR and strong IDC tolerance
- · Acceptable standability

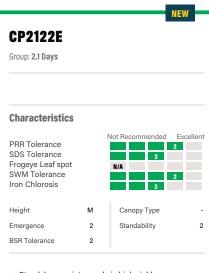
- Durable Roundup Ready 2 Xtend® variety with excellent standability and strong agronomics · Excellent SWM tolerance
- Strong SDS and PRR tolerance
- Acceptable IDC tolerance



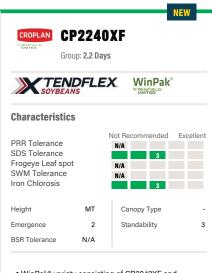
Scale 1 = Excellent 2 = Strong 3 = Acceptable 4 = Manage

5 = Not Recommended

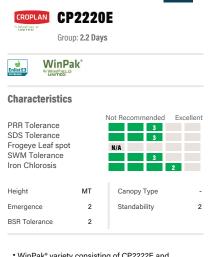




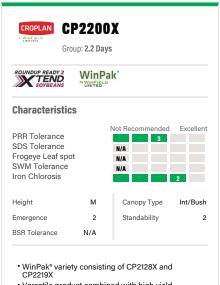
- Standalone variety excels in high yield environments
- · Versatile product works across many acres
- Strong standability and emergence coupled with PRR, SWM and BSR tolerance
- Acceptable SDS and IDC tolerance



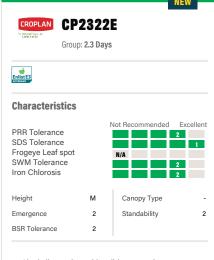
- WinPak® variety consisting of CP2242XF and CP2342XF
- High yield potential with strong emergence
- Acceptable SDS, IDC and standability
- Not recommended in heavy SWM or BSR prone



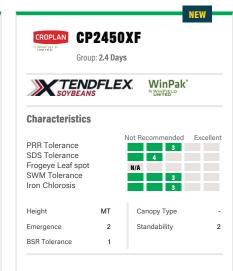
- WinPak® variety consisting of CP2222E and
- Works well on BSR- and IDC-prone fields
- Strong standability, BSR and IDC tolerance
- Acceptable PRR, SDS and SWM tolerance



- Versatile product combined with high yield potential
- Strong emergence and standability
- Acceptable IDC and PRR tolerance



- Single line variety with solid agronomics
- Excellent SDS resistance
- · Strong IDC, SWM and standability
- Strong emergence and PRR



- WinPak® variety consisting of CP2442XFand
- High yield potential; solid agronomics
- Acceptable IDC, SWM and PRR
- · Manage on SDS acres

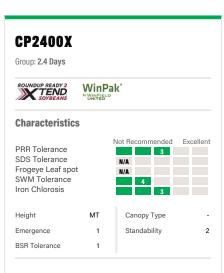
KEY

Scale 1 = Excellent 2 = Strong

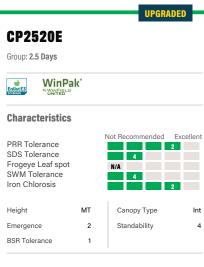
3 = Acceptable 4 = Manage 5 = Not Recommended Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered.



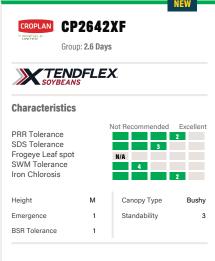




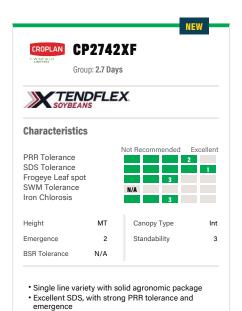
- WinPak® variety consisting of CP2487X and
- · Western variety best-positioned in well-drained, fertile soils
- Excellent emergence and BSR resistance; acceptable IDC rating and strong stress tolerance
 Manage for areas with heavy SWM pressure



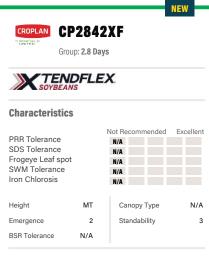
- Upgraded WinPak® variety consisting of CP2422E and CP2521E
- Best-suited for productive prairie soils; strong performance east to west
- Excellent stress tolerance with strong IDC and emergence
- Manage SWM and standability



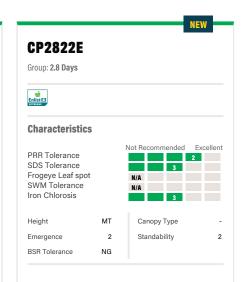
- Single line variety with solid agronomic package
- High-yield potential variety performs from east to
- Acceptable standability and SDS tolerance
- Caution on SWM-prone fields



Acceptable standability, frogeye and IDC



- Single line variety with high yield potential in well drained, loamy soils
- · Best placed on moderately to well drained soils
- Top-end yield potential in offensive environments
- Manage PRR and SDS with seed treatments as needed



- Single line variety with solid agronomic package
- Strong PRR, stress tolerance and standability
- Acceptable IDC and SDS tolerance

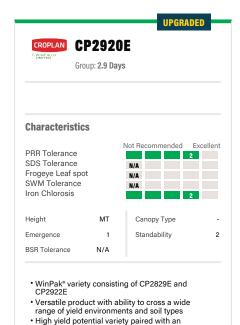
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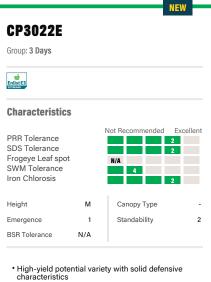


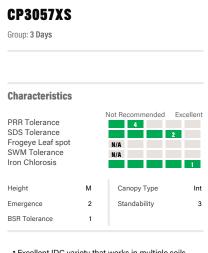
This symbol indicates that there has been a new component added to the WinPak® variety.



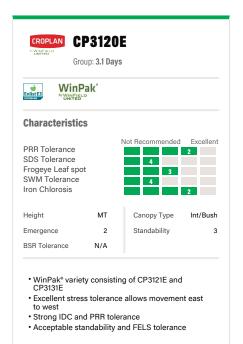
upgraded defensive line to bring strong PRR and excellent SDS tolerance

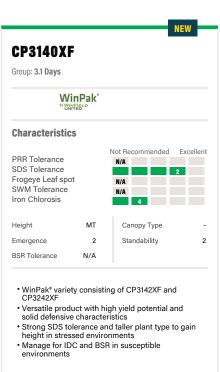
· Manage for SWM in susceptible environments

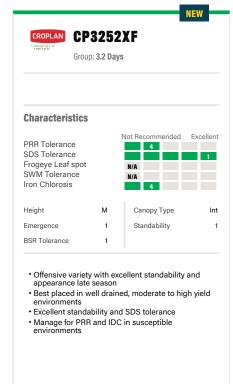


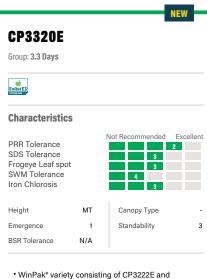


- · Versatile variety with performance potential on high-end to tough acres
- Strong PRR, SDS and IDC tolerance
- Manage for SWM in susceptible environments
- Excellent IDC variety that works in multiple soils and yield environments • Stress-tolerant line well-adapted from east to
- west • Rugged, medium-height plant with SCN and BSR
- HRps1c Phytophthora gene; manage with seed

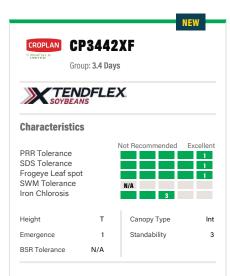






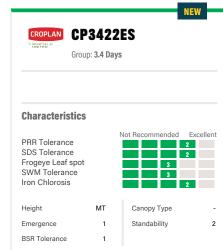


- WinPak® variety consisting of CP3222E and
- Stable, offensive variety paired with a new line for solid defensive characteristics and high yield potential
- Excellent stress tolerance and strong PRR
- · Manage for BSR in susceptible environments

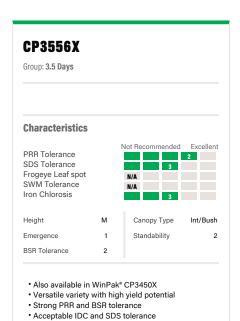


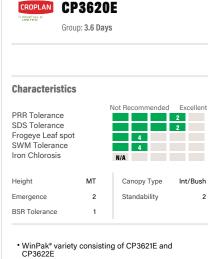
- High yield potential single line with excellent PRR, SDS, and FELS tolerance
- · Best performance central and east with ability to excel across soil types and yield environments
- Excellent defensive package for eastern environments with Rps1k gene present for PRR
 Acceptable IDC and standability late season

UPGRADED

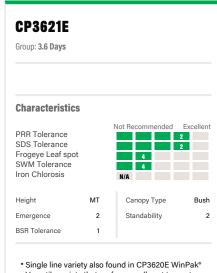


- High yield potential single line with solid disease package and appearance late season
- · Versatile variety that can perform nationally from the low- to high-end acre
- Excellent stress tolerance, strong PRR, SDS and IDC tolerance
- · Acceptable FELS tolerance





- Upgraded national product with improved overall yield potential, versatility and solid defensive characteristics
- Strong standability late season; strong PRR and SDS tolerance
- Manage for FELS in susceptible environments



- Versatile variety that performs well east to west
- Strong PRR, SDS, and stress tolerance
- Manage for FELS in susceptible environments

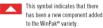
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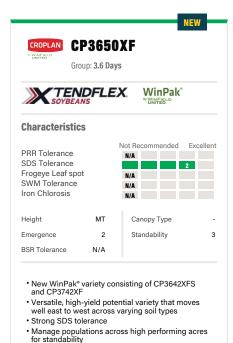
Scale 1 = Excellent 2 = Strong 3 = Acceptable

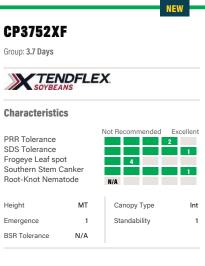
4 = Manage

5 = Not Recommended

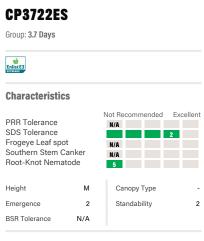
Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered.



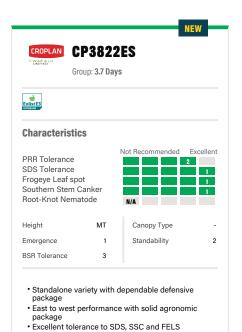


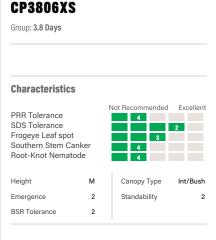


- Standalone variety with dependable defensive package
 Versatile variety with sc and strong standability
- Versatile variety ideally placed central and west
 Combination of excellent emergence, standability, SDS and SSC tolerance
- Acceptable FELS tolerance manage areas with issues

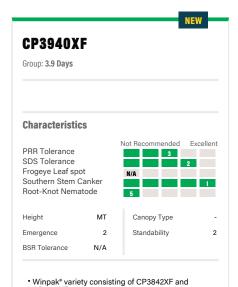


- Versatile variety with solid late season appearance and strong standability
- National line that moves well east to west and into mid-south
- Strong SDS tolerance
- Not recommended in fields with a history of RKN





- Excluder variety with STS® tolerance; well-suited for high-pH soils
- Strong performance from Neb. to the East Coast
 Offers strong emergence, disease tolerance and standability
- Manage for stem canker and RKN



- CP3941XF
- Broadly adapted east to west and across yield levels
- Manage placement in areas with RKN

· Acceptable rating for white mold - manage areas

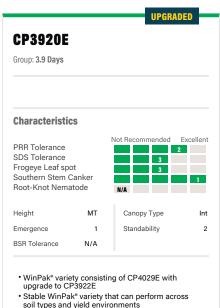
with issues

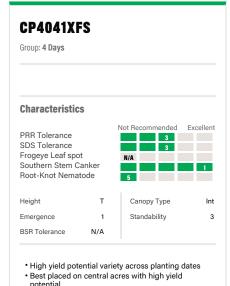
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Scale
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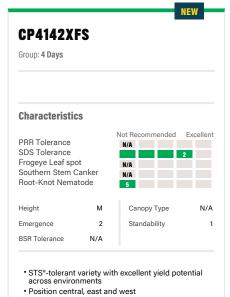
Product descriptions and ratings are generated from Answer Plot[®] trials and/or from the genetics supplier and may change as additional data is gathered.





• Excellent emergence; resistance to SSC and SCN

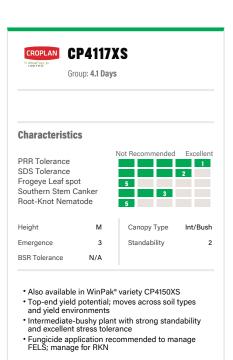
• Manage for SDS, white mold and PRR

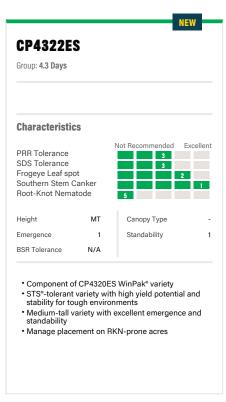


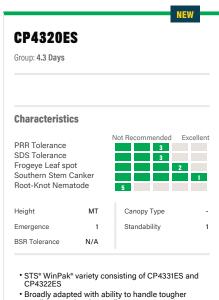
• Excellent standability and emergence; resistant to SSC

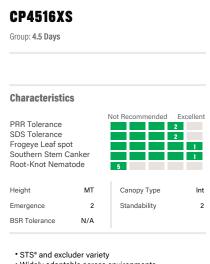
• Manage placement on RKN-prone acres

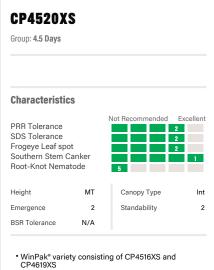
- soil types and yield environments • Excellent emergence and stress tolerance
- Manage for SDS and BSR in susceptible fields
- **CP4122E** Group: 4.1 Days **Characteristics** Not Recommended Excellent PRR Tolerance SDS Tolerance Frogeye Leaf spot 2 Southern Stem Canker Root-Knot Nematode Height Canopy Type 1 Emergence Standability 2 BSR Tolerance N/A High yield potential variety east to west and north to south Broadly adapted across soil types, yield environments and regions Excellent emergence; strong standability; acceptable tolerance to FELS • Manage placement on RKN-prone acres



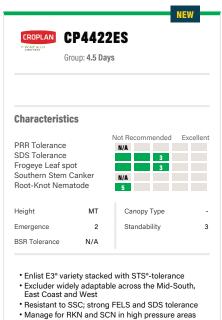


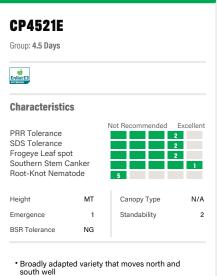


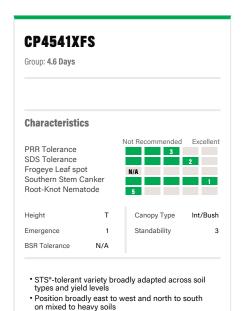




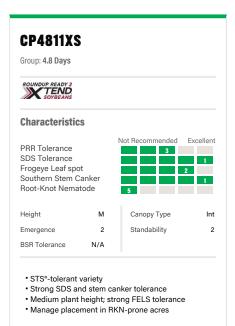
- conditions and various soil types
- Excellent emergence and standability
- Manage placement on RKN-prone acres
- Widely adaptable across environments
- Intermediate line with excellent SSC and FELS
- Manage populations to improve standability
- · Strong PRR, SDS and FELS tolerance
- Strong standability

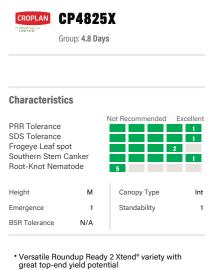


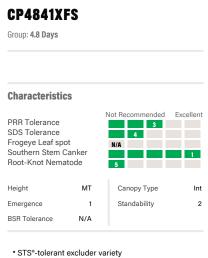




- - · Acceptable FELS, SDS and SSC tolerance
 - Medium height variety for clay soils with acceptable standability for lighter soils
 - · Manage placement in RKN-prone acres
- Excluder with excellent emergence; SSC

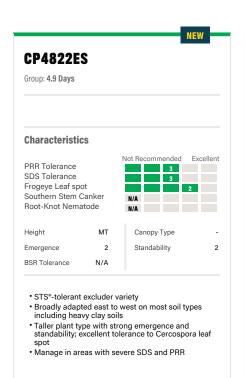


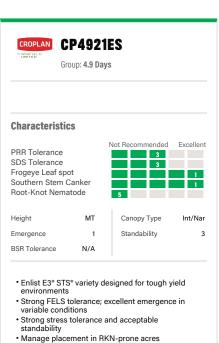


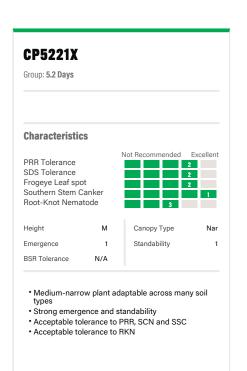


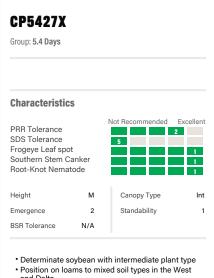
- · Highly adapted variety that moves across all soil types
- Excluder with excellent emergence and SSC tolerance; strong FELS tolerance
 Can have late-season green stems

- · Best positioned in the East and in the West on
- · Acceptable standability; SCN resistant
- Manage PRR, SDS, SSC and RKN

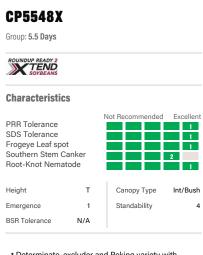








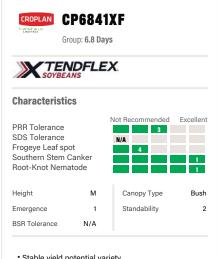
- Resistant to both southern and peanut RKN; excellent SSC and FELS tolerance; excellent standability
- Not recommended in SDS-prone areas



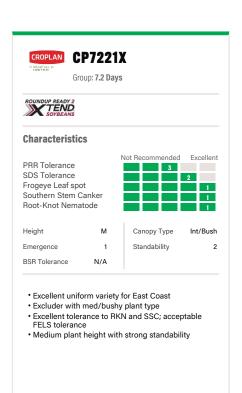
- Determinate, excluder and Peking variety with top-end yield potential
- · Best-suited for the Delta and East Coast across most soil types
- Resistant to both peanut and southern RKN; excellent FELS rating; tolerance to metribuzin
- Tall variety; manage populations to improve standability

CP6208X Group: 6.2 Days **Characteristics** Not Recommended Excellent PRR Tolerance SDS Tolerance N/A Frogeye Leaf spot Southern Stem Canker Root-Knot Nematode Height М Canopy Type 3 Emergence Standability BSR Tolerance N/A

- Excluder; attractive tawny/tan determinate type
- · Performs best in the Delta to the East Coast
- · Narrow plant with excellent standability; resistance for RKN and SSC
- Acceptable FELS tolerance; manage with fungicide



· Stable yield potential variety · Position across East Coast on most soil types Excellent emergence and strong standability; resistant to SSC and RKN · Manage FEL and PRR in areas of concern









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CP0878X*	CP0751XF	CP0741XF	CP0740XF	CP0700X	CP0678X*	NEW CP0542XF	CP0426X	CP0411X*	CP0400X	CP0337X	CP0264RR	NEW CP0242XF	CP00926X	CP00847X	CP00842XF	CP00777X*	CP00312X	ROUI	Supplement the first of the supplemental sup
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Rps1c	Rps	HRp	Rps	Rps	NG	Rps1c	Rps3a	NG	Rps	Rps1c	Rps1c	Rps1c	Rps1k	Rps1k	Rps1c	Rps1c	Rps1c	PUNI	(alie C
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P188.788	P188.788	P188.788	P188.788	P188.788	P188.788	P188.788	P188.788	P188.788	P188.788	P188.788	PI88.788	P188.788	P188.788	P188.788	P188.788	P188.788	P188.788	P188.788	PI88.788	READY 2 XTEND®/XTENDFLEX®/ROUNDUP	O MARIA HALI
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Southern Stem Canker and Root-Knot Nematode Canopy Type

Nar = Narrow
Int = Intermediate
Bush = Bushy

Plant Height **T** = Tall **M** = Medium **S** = Short

P = Purple
W = White 6 Flower Color

Pubescence Type TW = Tawny LTW = Light Tawny GR = Gray

Pod Color

TN = Tan BR = Brown

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This symbol indicates that there has been a new component added to the WinPak® variety.

*WinPak® seed components only. Not for sale individually.



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1 of 2



Going the extra mile isn't extra to us.

Our dedication goes way beyond a handshake or a pat on the back. We're fully committed to you and the success of your alfalfa crop from day one.

That means we'll work closely with you to help you select the best genetics for your field — pairing new traits with the latest technologies to give you your very best chance to produce higher-quality feed and optimize tonnage.

Meeting your expectations? Heck, we're more interested in beating them.

KEY TAKEAWAYS

- 1 Choose varieties with the traits that fit your fields and management.
- 2 Use coated seed to help you improve stand establishment and seed efficiency.
- 3 Manage in-season by Reading the Stand and harvesting and storing properly.

VARIETY SELECTION

FALL DORMANCY (FD) AND WINTERHARDINESS (WH)

- A higher FD number equals higher yield potential. A lower WH number equals more cold tolerance and stand persistence.
- Independent of breeding efforts, lower FD (more dormant) provides a significant increase in fiber digestibility potential.

PEST RESISTANCE

► Anthracnose Disease

- A severe stem and crown disease that causes defoliation. Multiple races, including a new race 5, can be present in late season.
- Varieties are now available with multi-race high resistance.
- It occurs most often under warm, moist conditions.
- It causes yield loss of up to 25%.
- Susceptible plants have large, sunken ovalto diamond-shaped lesions.
- Lesions can enlarge to girdle or kill plant.
 Girdled stems can exhibit a shepherd's hook.

► Aphanomyces Root Rot Disease

- Infects roots causing seedling stunting, reduced nodulation and poor root development.
- Commonly found in soils that are saturated, poorly drained, compacted or have limited water dispersal.
- Visual symptoms can include gray, watersoaked roots, yellowed cotyledons, and stunted growth that can result in limited yield production or stand failure.

 Varieties are now available with enhanced multi-race high resistance.

► Potato Leafhopper (PLH)

- Small, light-green insect that feeds on alfalfa plants, causing leaf tips to display a V-shaped yellowing.
- Varieties with glandular hairs provide natural nonpreference feeding for PLH.
- Commonly found in the Plains, Midwest and East; most severe in new seedings and summer regrowth that causes yield reduction.

▶ Nematodes

- Microscopic roundworms (several identified species) that live in the soil, surface irrigation water, alfalfa roots and crown tissue.
- Can reduce yield and stand life and cause secondary infections from other diseases.
 Control them by planting a high-resistance alfalfa variety.
- Commonly found throughout most of the West and Plains.

► High-Salinity Soils

- Greenhouse tests provide baseline indicators of a varieties ability to germinate in high salinity conditions. Salt breeding nurseries provide greater insights to variety selection based on its ability to mitigate high-salinity stress conditions with more predictable performance for on-farm potential.
- Soils vary. Saline: high soluble salts. Sodic: high sodium ion content. Alkaline: soil pH that is higher than optimum (pH>8.0).
- Commonly found in the western half of the U.S.

► Aphids

- Can be a problem in dry periods; controlled by other predators in cool and/or wet periods.
- The blue aphid is the most damaging in the Southern Plains to the Southwest.

IN-SEASON MANAGEMENT

NEW SEEDING AND STAND ESTABLISHMENT

- Plant into a firm seedbed to control seed depth; seed-to-soil contact is crucial.
- Planting rates do not need to be adjusted for coated seed since bulk density is higher.
- The planting rate for alfalfa varies from region to region, but generally 18 to 20 lbs. per acre is recommended with a goal of about 25 plants per square foot at the end of the seeding year.

ESTABLISHED STANDS: READING THE STAND

- Each spring, determine potential winter damage or winterkill.
- Follow the Reading the Stand program to evaluate the alfalfa stand density and crown health of each field to determine current and future yield potential.

WEED CONTROL

 Control weeds early for a high-producing pure alfalfa stand. Roundup Ready® Alfalfa provides farmers with more flexible management strategies.

INSECT AND DISEASE CONTROL

- Control insects such as aphids (spotted, blue, pea, cowpea), alfalfa weevils and leafhoppers.
- Manage foliar leaf diseases and anthracnose.
- Choose alfalfa varieties with built-in resistance and use a spray application to control as necessary.

NUTRIENT MANAGEMENT

- Alfalfa requires a neutral soil pH (6.8 to 7.2) for high production. Take soil and plant tissue tests to monitor macronutrients and micronutrients.
- A healthy alfalfa plant will have a luxury supply of potassium, boron, sulfur and phosphorus.

HARVEST MANAGEMENT

- Manage leaf loss in-season with fungicide application and during harvest from overhandling during raking, merging, chopping or baling. New Leaf Percentage Test available to estimate leaf content in your alfalfa. See your CROPLAN® alfalfa dealer for more information.
- Wheel traffic can increase soil compaction and crown damage, leading to reduced crop regrowth and yield loss.





COATED SEED

IMPROVE SEEDLING EFFICIENCY WITH COATED SEED

- Provides an ideal microenvironment with better imbibition (water uptake) and germination.
- Facilitates and enhances the addition of seed treatments/inoculants, which are applied by weight, not per seed; therefore, higher rates are applied on coated seed.
- Keeps treatments/inoculants close to or bound to the seed for more complete coverage.
- Increases vigor under disease pressure.
- Purdue reported an average 30% increase in seedling success for coated seed.¹

SEED COATING

- ► GroZone® plus Advanced Coating® Zn 34%
- Rhizobium bacteria to fix nitrogen.
- Micronutrient package to provide zinc and manganese.
- Ascend® PGR to promote early seedling growth.
- Apron XL® fungicide to help protect seedlings from root diseases such as phytophthora during establishment.
- Stamina® fungicide to provide additional protection to multiple races of aphanomyces root rot disease.
- Provides an average 30% increase in resistance to aphanomyces root rot as compared to standard treated commercial 9% coat.²
- 1. Alfalfa and Red Clover Stand Establishment Forage Management Day at Feldun-Purdue Agricultural Center, August 9, 2018. Seeding Date: May 2, 2018. Data collected on June 29, 2018.
- 2. Data from FGI trials in West Salem, Wis., 2018.
 3. Data from FGI trials comparing HarvXtra® Alfalfa with Roundup Ready® Technology 2017 FD4 commercial varieties to FD4 commercial checks. Trials were seeded in 2013 and harvested 2014-2016 at five locations across the U.S. Yield increase is directly correlated to the ability to delay harvest.
 4. Data from an FGI trial in West Salem, Wis., comparing three cuttings at 35-day intervals to four cuttings at 28-day intervals. Trials were seeded in 2013 and harvested in 2014-2016. Yield increase is directly correlated to the ability to delay harvest. WinField® United does not guarantee forage harvested from stands established with this seed will be GMO-free. Check with your local organic certifying organization before planting.

TRAITS

HARVXTRA® ALFALFA³

HarvXtra® Alfalfa with Roundup Ready® Technology is one of the most advanced alfalfa traits currently available, providing extra flexibility when it comes to cutting without sacrificing forage quality or yield potential.

- Gives you a more flexible cutting window to help manage your operation, putting you in control of your cutting schedule.
- Delivers a higher RFQ³ and NDFd³ than conventional varieties cut on the same day.
- Achieve up to 20% higher yield at harvest⁴ by lengthening your cutting window up to 10 days.

ROUNDUP READY® ALFALFA

- Offers application flexibility for greater weed-control options.
- Helps deliver a higher percentage of pure alfalfa for more high-quality hay and haylage.
- Delivers exceptional weed control and crop safety.

CONVENTIONAL ALFALFA

- Conventional alfalfa breeding techniques have provided strong advancements in yield production, stand persistence, and insect and disease resistance.
- For more than three decades, alfalfa breeders have used conventional alfalfa breeding techniques to select for improved fiber digestibility (e.g., LegenDairy and RR Presteez lines).
 - These varieties show an incremental improvement in fiber digestibility when compared to nonselected varieties.

ALFALFA FOR ORGANIC FORAGE PRODUCTION

- Alfalfa products that were developed through conventional breeding and were not the result of genetic engineering.*
- Approved varieties meet industry standards for LLP (low-level presence of bio-tech traits) and are noted on our variety detail pages.



APEX™ GREEN SEED COATING

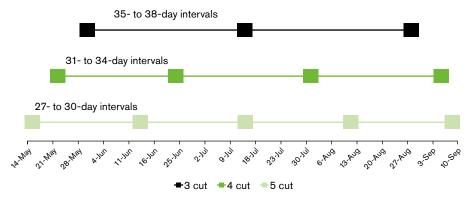
- OMRI Listed[®] for organic use.
- Includes natural micronutrients and nitrogen-fixing rhizobia in an organic hydration coating that maximizes water absorption.

FLEXIBILITY OF HARVXTRA® ALFALFA HAS NEVER BEEN MORE IMPORTANT

With unpredictable weather patterns, you need the ability to alter your cutting plans quickly. HarvXtra® Alfalfa lets you maximize your growing season by providing the flexibility to space out cuttings so that each harvest optimizes ROI and yield potential.

- Harvest first cutting ~28" (to avoid lodging), usually around May 25-30 in the Midwest.
- Delay summer cutting(s).
- Timely final harvest improves stand persistence; last cutting around Sept. 1 in northern regions and Sept. 5 in southern regions allow at least 500 growing degree days (GDD) before experiencing a killing frost of ≤25°F.
- Avoid mid-late October cuttings.

HARVXTRA® CUTTING SCHEDULE







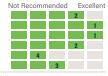
CROPLAN HVX Tundra II

Regions: East|North|West Dormancy: 3.3 Winterhardiness: 1.2



Characteristics

Yield Index Persistence Index Feed Quality* Disease Resistance Insect Resistance Nematode Resistance



Feed quality ratings for HarvXtra Alfalfa are represented on a separate scale than Roundup Ready* and conventional alfalfa varieties and are signified with an 'H. Because there is a significant improvement in Forage quality, HarvXtra Alfalfa products can only be compared to other HarvXtra Alfalfa products.

- H1 feed quality rating; highest forage quality potential in our lineup; on average, 24% higher NDFD than Roundup Ready® check varieties
- · Ideal for Northern growing regions or high elevation; good disease and pest package for east to west adaptation
- Versatile harvest options: ideal for a 2- to 3-cut baled hay management system or great for a 1- or 2-cut hay harvest followed by grazing

CROPLAN HVX Driver

Regions: Central|East|North|West Dormancy: 4 Winterhardiness: 2



Characteristics

Yield Index Persistence Index Feed Quality* Disease Resistance Insect Resistance Nematode Resistance



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- H2 feed quality rating; maximize harvest flexibility; excellent yield or forage quality potential with the HarvXtra® Alfalfa trait
- Good disease package provides exceptional ability to perform well across multiple geographies
- Great option for 3- to 5-cut flexible hay/haylage harvest system with quick regrowth after cutting

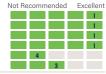
CROPLAN HVX MegaTron

Regions: Central|East|North|West Dormancy: 4.2 Winterhardiness: 1.7



Characteristics

Yield Index Persistence Index Feed Quality* Disease Resistance Insect Resistance Nematode Resistance



Feed quality ratings for HarvXtra* Alfalfa are represented on a separate scale than Roundup Ready* and conventional alfalfa varieties and are signified with an 'H'. Because there is a significant improvement in Forage quality, HarvXtra Alfalfa products can only be compared to other HarvXtra Alfalfa products.

- H2 feed quality rating; exceptional soil disease resistance to help improve root and plant health
- Highest resistance (HR+) rating to multi-race Aphanomyces root rot disease (races 1, 2 and EMR); resistant (R) to multi-race anthracnose (including new race 5)
- Excellent quality and yield potential with a 3- to 5-cut flexible harvest system based on geography

NEW



CROPLAN HVX MegaTron AA

Regions: Central|East|North|West Dormancy: 4.4 Winterhardiness: 1.4



Characteristics

Yield Index Persistence Index Feed Quality* Disease Resistance Insect Resistance Nematode Resistance 1 1 1 1 3 3

Feed quality ratings for HarvXtra Alfalfa are represented on a separate scale than Roundup Ready* and conventional alfalfa varieties and are signified with an 'H'. Because there is a significant improvement in Forage quality, HarvXtra Alfalfa products can only be compared to other HarvXtra Alfalfa products.

- H2 feed quality rating; exceptional root and plant health to support highest yield and quality potential
- Highest resistance (HR+) rating to multi-race Aphanomyces root rot disease (races 1, 2 and EMR); HR+ to multi-race anthracnose disease (including race 5)
- Exceptional yield potential ideal with a 3- to 5-cut flexible harvest system based on geography

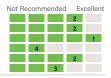
CROPLAN HVX 620RR Brand

Regions: South|West Dormancy: 6 Winterhardiness: -



Characteristics

Yield Index Persistence Index Feed Quality* Disease Resistance Insect Resistance Nematode Resistance



Feed quality ratings for HarvXtra Alfalfa are represented on a separate scale than Roundup Ready* and conventional alfalfa varieties and are signified with an 'H. Because there is a significant improvement in Forage quality, HarvXtra Alfalfa products can only be compared to other HarvXtra Alfalfa products.

- H3 feed quality rating; HarvXtra® Alfalfa harvest flexibility now available in a semidormant variety to maximize yield and quality potential
- Excels in the transition regions of the High Plains, South and Southwest; high resistance to pea and spotted alfalfa aphid
- Very early spring growth, fast regrowth and late fall growth; plan for 6-cut harvest system



CROPLAN HVX 840RR Brand

Regions: Central|East|North|West Dormancy: 7.9 Winterhardiness: -



Characteristics

Yield Index Persistence Index Feed Quality* Disease Resistance Insect Resistance Nematode Resistance



Feed quality ratings for HarvXtra Alfalfa are represented on a separate scale than Roundup Ready* and conventional alfalfa varieties and are signified with an 'H'. Because there is a significant improvement in Forage quality, HarvXtra Alfalfa products can only be compared to other HarvXtra Alfalfa products.

- Exceptional nondormant variety provides improved yield and forage quality potential with the HarvXtra® Alfalfa trait
- Strong disease package provides protection against pea and spotted alfalfa aphids and stem nematodes
- Flexible harvest management for 5+ cuttings for superior yield or improved forage quality potential



Scale 1 = Excellent

2 = Strong

3 = Acceptable 4 = Manage

5 = Not Recommended

Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered.

Feed quality ratings for HarvXtra® Alfalfa are represented on a separate scale than Roundup Ready® and conventional alfalfa varieties and are signified with an "H." Because there is a significant improvement in forage quality, HarvXtra® Alfalfa products can only be compared to other HarvXtra® Alfalfa products.



CROPLAN Graze N Hay 3.10RR

Regions: North|West Dormancy: 2.9 Winterhardiness: 1.8



Characteristics

Yield Index Persistence Index Feed Quality Disease Resistance Insect Resistance Nematode Resistance

- Not Recommended Excellent 3 1 3 3 4 5
- Best-suited for Northern regions; exceptional winterhardiness and stand persistence
- Withstands hoof or wheel traffic; weed control with the Roundup Ready® trait improves stand establishment on dryland acres or in limited water conditions
- Excellent variety where 1 or 2 cuttings of hay will be harvested mechanically followed by grazing

CROPLAN RR Presteez

Regions: Central|East|North|West Dormancy: 3.2 Winterhardiness: 1.2



Characteristics

Yield Index Persistence Index Feed Quality Disease Resistance Insect Resistance Nematode Resistance



- High forage quality potential ideal for baled hay or haylage harvest
- Excellent salt-tolerance ratings in germination tests and exceptional performance in stand persistence trials
- Ideal for Upper Midwest and West as a 3- to 4-cut baled hay and/or haylage harvest system

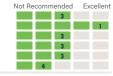
CROPLAN RR Vamoose

Regions: Central|East|North Dormancy: 3.9 Winterhardiness: 1.8



Characteristics

Yield Index Persistence Index Feed Quality Disease Resistance Insect Resistance Nematode Resistance



- Performs well in the Upper Midwest and East where high resistance to potato leafhopper (PLH) may be necessary
- PLH resistance provides improved yield potential, high-quality feed and stand persistence
- Outstanding agronomics; PLH resistance offers reduced-spray or no-spray options; best-suited in a 3- to 4-cut system

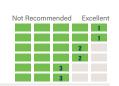
CROPLAN RR AphaTron 2XT

Regions: Central|East|North|West Dormancy: 4 Winterhardiness: 1.5



Characteristics

Yield Index Persistence Index Feed Quality Disease Resistance Insect Resistance Nematode Resistance



- Excellent soil disease resistance to help improve root and plant health
- High resistance (HR) to Aphanomyces root rot disease races 1 and 2; resistant (R) to EMR
- Provides high yield and excellent forage quality potential under a 4- to 5-cut haylage or aggressive hay management system

CROPLAN RR Stratica

Regions: Central East North West Dormancy: 4.3 Winterhardiness: 2



Characteristics

Not recommended Excellent Yield Index Persistence Index Feed Quality 3 Disease Resistance 3 Insect Resistance Nematode Resistance



- soils east to west
- High-forage yield potential, fast regrowth and good winterhardiness; ideally suited for a 4- to 5-cut haylage or aggressive hay management



CROPLAN RR NemaStar

Regions: West Dormancy: 4.9 Winterhardiness: 2.8



Characteristics

Yield Index Persistence Index Feed Quality Disease Resistance Insect Resistance Nematode Resistance



- Management and growth pattern is similar to Nimbus with the added benefit of the Roundup
- Developed and tested for high performance in field trials heavily infested with nematodes; high resistance to stem nematode
- Excellent salt-tolerance ratings in germination
- Rapid regrowth and very good forage quality potential; ideal for haylage or baled hay intensive harvest systems



Scale

1 = Excellent 2 = Strong

3 = Acceptable

4 = Manage

Product descriptions and ratings are generated from Answer Plot® trials and/or -from the genetics supplier and m*a*y change as additional data is gathered.

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Regions: Central|North|West Dormancy: 4.8 Winterhardiness: 2.5



Characteristics

Not Recommended Yield Index 1 Persistence Index 2 Feed Quality 3 Disease Resistance 3 Insect Resistance 1 Nematode Resistance

- Exceptional performance in tough soils with high saline conditions
- Exceptional pest-resistance package; high resistance to stem nematode and multi-species aphid resistance
- Excels in a 5-cut intensive hay or haylage harvest

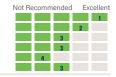
CROPLAN RR Tonnica

Regions: Central|East|North|South|West Dormancy: 5 Winterhardiness: 2



Characteristics

Yield Index Persistence Index Feed Quality Disease Resistance Insect Resistance Nematode Resistance



- Maximize vield potential all season long.
- · Well-rounded pest resistance package for widerange adaptability from east to west
- Very early spring growth, fast regrowth and late fall growth; aggressive 5-cut schedule

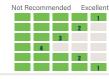
CROPLAN RR 6 Shot Plus

Regions: South|West Dormancy: 6 Winterhardiness: -



Characteristics

Yield Index Persistence Index Feed Quality Disease Resistance Insect Resistance Nematode Resistance



- Next generation of semidormant genetics that push yield potential to the next level; ideal in the High Plains, the South and the Southwest
- High resistance to spotted alfalfa and pea aphid as well as to stem nematode
- Very early spring growth, fast regrowth and late fall growth; plan for 6-cut harvest system

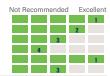
CROPLAN RR Desert Rose

Regions: South West Dormancy: 8.5 Winterhardiness: -



Characteristics

Yield Index Persistence Index Feed Quality Disease Resistance Insect Resistance Nematode Resistance



- Exceptional nondormant variety with very high yield potential; dark-green plant with excellent leaf retention
- High resistance to spotted alfalfa, pea and blue alfalfa aphids; ideal for the Southwest region
- Great when harvested as dry baled hay, haylage or greenchop; fast recovery after cutting; excellent stand persistence for numerous cuttings per year

CROPLAN

Maxi Graze®

Regions: North/West Dormancy: 2 Winterhardiness: 2

Characteristics

Yield Index Persistence Index Feed Quality Disease Resistance Insect Resistance Nematode Resistance



- · Recessed crown provides excellent durability for grazing or high-traffic fields; exceptional winterhardiness and stand persistence
- Great yield and quality potential for northern regions or high elevations; ideal for 1- or 2-cut mechanical harvest followed by grazing
- · Excellent option for mixed grass and alfalfa

MP 1000 Brand

Regions: CentrallEast|North|West Dormancy: 3 Winterhardiness: 3

Characteristics

Yield Index Persistence Index Feed Quality Disease Resistance Insect Resistance Nematode Resistance



- Premium multifoliate blend with wide geographic adaptation
- · Good forage yield and quality potential
- Works well in a 3- to 4-cut hay or haylage management system

 • Available with Apex™ Green Seed Coating; OMRI
- Listed® for organic use



Scale

1 = Excellent

2 = Strong

3 = Acceptable 4 = Manage

5 = Not Recommended

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CROPLAN LegenDairy AA

Regions: Central|East|North|West Dormancy: 3.4 Winterhardiness: 1.1

Characteristics

Not Recommended Yield Index Persistence Index 1 Feed Quality . . Disease Resistance 1 Insect Resistance 2 Nematode Resistance

- . The next generation of LegenDairy; the added AA disease resistance has advanced yield potential to new levels
- · Highest resistance (HR+) rating to multi-race Aphanomyces root rot disease (races 1, 2, and EMR); HR+ to multi-race anthracnose disease (including race 5)
- Excellent choice for producers in northern growing regions east to west; ideal for 3- to 4-cut baled hay or haylage harvest system
- Available with Apex™ Green Seed Coating; OMRI Listed® for organic use

CROPLAN Rebound AA

Regions: Central|East|North|West Dormancy: 4.4 Winterhardiness: 1.7

Characteristics

Yield Index Persistence Index Feed Quality Disease Resistance Insect Resistance Nematode Resistance



- Packs a punch with AA disease resistance providing exceptional yield potential
- Highest resistance (HR+) rating to multi-race Aphanomyces root rot disease (races 1, 2 and EMR); HR+ to multi-race anthracnose disease (including race 5)
- Best-suited for 4- to 5-cut haylage or aggressive hay management systems in the Upper Midwest and East; great for baled hay in the West where pockets of Aphanomyces root rot disease is a
- . Available with Apex™ Green Seed Coating; OMRI Listed® for organic use

CROPLAN TrailBlazer XHH

Regions: Central|East|North Dormancy: 4 Winterhardiness: 3

Characteristics

Yield Index Persistence Index Feed Quality Disease Resistance Insect Resistance Nematode Resistance



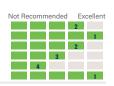
- · Excellent resistance to potato leafhopper (PLH); improved yield potential; high-quality feed and stand persistence
- PLH resistance offers reduced-spray or no-spray options
- Great option for the Upper Midwest and East; best suited in a 3- to 4-cut hay/ haylage harvest
- Available with Apex™ Green Seed Coating; OMRI Listed® for organic use

Gunner Gunner

Regions: Central|East|North|South|West Dormancy: 4.9 Winterhardiness: 1.2

Characteristics

Yield Index Persistence Index Feed Quality Disease Resistance Insect Resistance Nematode Resistance



- Optimize yield potential with very early spring growth, fast regrowth and late fall growth
- Good disease resistance package allows this variety to move well in the East as haylage to the West as dry hay
- Plan for aggressive 5- to optional 6-cut hay or haylage harvest schedule
- Available with Apex™ Green Seed Coating; OMRI Listed® for organic use

CROPLAN

Gunner AA

Regions: Central|East|North|South|West Dormancy: 4.8 Winterhardiness: 1.2

Characteristics

Yield Index Persistence Index Feed Quality Disease Resistance Insect Resistance Nematode Resistance



- Outstanding AA disease resistance combined with maximum yield potential
- High resistance (HR+) to multi-race Aphanomyces root rot disease (races 1, 2, and EMR); HR+ to multi-race anthracnose disease (including race 5)
- Very early spring growth, fast regrowth and late fall growth; ideal for aggressive 5- to optional 6-cut hay or haylage harvest schedule

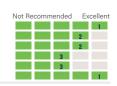
CROPLAN

Nimbus

Regions: Central|North|West Dormancy: 5 Winterhardiness: 2.2

Characteristics

Yield Index Persistence Index Feed Quality Disease Resistance Insect Resistance Nematode Resistance



- Developed for the western areas of the U.S. where problematic soils, including high-salinity soils, can reduce alfalfa production
- Great performance in field trials heavily infested with nematodes; high resistance to both stem and northern root-knot nematodes
- Exceptional yield potential with optimum production under 5- to optional 6-cut haylage or baled hay harvest systems
- Available with Apex[™] Green Seed Coating; OMRI Listed[®] for organic use



Scale

1 = Excellent

2 = Strong 3 = Acceptable

4 = Manage 5 = Not Recommended Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered.

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CROPLAN Artesian Sun 6.3

Regions: South|West Dormancy: 6 Winterhardiness: 3.1

Characteristics

Not Recommended Excellent Yield Index Persistence Index 2 Feed Quality 3 3 Disease Resistance Insect Resistance 3 Nematode Resistance

- Excellent conventional variety that is dark-green, very high multifoliate expression and good leaf retention
- · Outstanding pest-resistance package; versatile product can move from western to southern U.S. semidormant regions
- Strong stand persistence for intensive harvest management; fast recovery and regrowth after cutting provides excellent yield potential in a 6+
- Available with Apex™ Green Seed Coating; OMRI Listed® for organic use

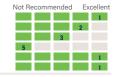


CROPLAN Sun Ouest®

Regions: South|West Dormancy: 9 Winterhardiness: -

Characteristics

Yield Index Persistence Index Feed Quality Disease Resistance Insect Resistance Nematode Resistance



- · A high-yield-potential, nondormant conventional variety with an excellent pest-resistance package
- High resistance to pea, spotted and blue alfalfa aphids and to stem nematodes; excellent salt-tolerance ratings in germination and forage tests
- Specifically developed for Southern California, Arizona and New Mexico with exceptional stand persistence for numerous harvests per year

CROPLAN Sun Titan

Regions: South|West Dormancy: 8.4 Winterhardiness: -

Characteristics

Yield Index Persistence Index Feed Quality Disease Resistance Insect Resistance Nematode Resistance



- · Exceptional yield potential with strong stand persistence and very fast recovery after cutting
- Excellent pest resistance ratings with high resistance to pea, blue alfalfa and spotted alfalfa aphids
- Best suited for maximum yield production in the traditional western and southwestern nondormant

ALFALFA VARIETY PLACEMENT

Fall dormancy and winterhardiness are important considerations in alfalfa seed selection. This map shows CROPLAN® seed varieties that match fall dormancy

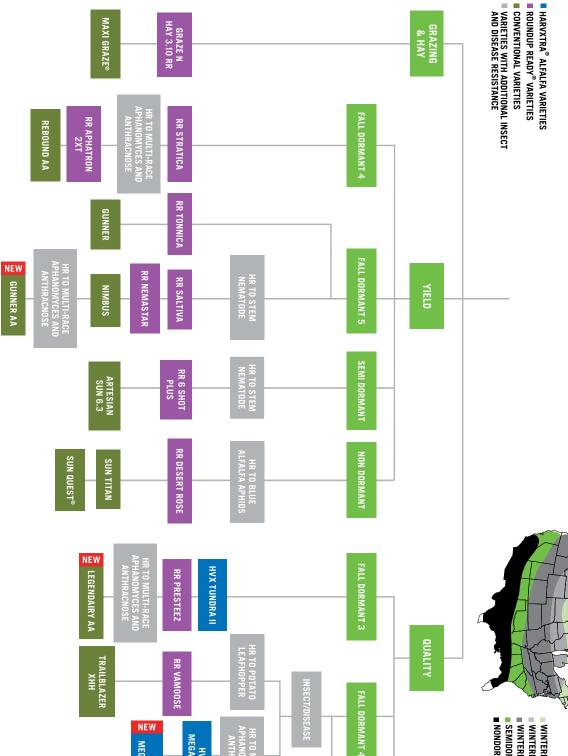
PRODUCT DORMANCY MAP²

and winterhardiness zones in various regions of the United States.

SEMIDORMANT FD5/6/7 ■ NONDORMANT FD7/8/9 **■ WINTERHARDY FD4/5** WINTERHARDY FD3/4 WINTERHARDY FD2/3

SEMI/NON DORMANT

diseases and pests in your area, and to match quality to your desired cutting frequency. The map can be used to determine which alfalfa varieties are recommended for your area's climate challenges. Also, use the chart below to place the recommended variety to help manage common



guaranteed by WinField United. and product application, results to be obtained, including but not limited to yields, cannot be predicted or the placement described above is your decision. Because of factors outside of our control, such as weather 1. This chart is provided as an illustration only. Planting decisions are complex and any implementation of

> potential; lower WH number = more cold tolerant and stand persistent. 2. Fall dormancy (FD) and winterhardiness (WH): Higher FD number = higher yield

NEW

HVX MEGATRON AA

HVX 840RR

HVX MEGATRON

HVX DRIVER

HVX 620RR

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RR Desert Rose	RR 6 Shot Plus	RR Tonnica	RR NemaStar	RR Saltiva	RR Stratica	RR AphaTron 2XT	RR Vamoose	RR Presteez	Graze N Hay 3.10RR	HVX 840RR Brand	HVX 620RR Brand	HVX MegaTron AA	HVX MegaTron	HVX Driver	HVX HarvaTron	HVX Tundra II	HARVXTRA®/ROUNDUP READY® ALFALFA	
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KEY

- Scale

 1 = Excellent
 2 = Strong
 3 = Acceptable
 4 = Manage
 5 = Not Recommended

Feed Quality Index

Feed quality ratings for HarvXtra® Alfalfa are represented on a improvement in forage quality, HarvXtra® Alfalfa products can only varieties and are signified with an "H." Because there is a significant separate scale than Roundup Ready® and conventional alfalfa

be compared to other HarvXtra® Alfalfa products.

2 Salt Tolerance

- **G** = Variety tolerance for germination under high saline conditions in a petri dish
- $\mathbf{F}=$ Variety tolerance for forage growth under high saline conditions as a potted plant in the greenhouse

Resistance Ratings

- S = Susceptible (0–5%)
 LR = Low Resistance (6–14%)
 MR = Moderate Resistance (15–30%)
 R = Resistance (31–51%)

- HR = High Resistance (>50%)
 HR+ = Highest Resistance available on the market (>50%)

Note: Field tests are currently being used to select and validate true salt-tolerant varieties. Many soils that are high in salinity also have other problematic conditions. Therefore, germination and forage salt-tolerant ratings may not predict field performance.

or from the genetics supplier and may change as additional data is gathered. Product descriptions and ratings are generated from Answer Plot® trials and/



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Product Name	
Attributes	
Placement	
Product Name	
Attributes	
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Product Name	
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CORN SILAGE



Shortcuts. You don't take them; neither do we.

You have questions about how to improve corn silage yield. Together, we'll find the answers. We partner with you to select our Data Proven (high quality x high tonnage) silage products, diagnose pest problems and figure out your exact plant nutrition needs throughout the growing season. We understand the importance of having the right levels of quality nutrients in your silage. This is good news for you. It's even better news for your corn silage crop.

KEY TAKEAWAYS

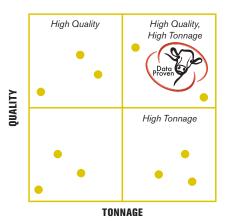
- Select hybrids based on forage quality and tonnage needs.
- 2 Properly harvest and store your crop.

SELECT HYBRIDS FOR QUALITY AND TONNAGE

This scatter graph illustrates yield as tonnage per acre on the horizontal axis and milk per ton as quality on the vertical axis. The lines through the center represent the trial average.

Each year, replicated corn silage trials are planted at Answer Plot® locations nationwide. After harvest, data is compiled and summarized over multiple years and locations to provide a performance snapshot.

Considering both nutrient requirements and agronomic factors during hybrid selection is an important risk-management tool for corn silage products. CROPLAN® corn silage hybrids that consistently perform in this high-quality and high-tonnage quadrant are marked with the Data Proven logo.



Your nutritionist can determine the parameters for nutrient needs, and your WinField United representative can use Answer Plot® data in the R7® Tool to help position each hybrid for optimal performance based on multiple variables.

SEE HOW SEED MEASURES UP

The CHT function of the R7® Tool uses Answer Plot® program data to compare CROPLAN® seed products, as well as seed from other major companies, to see how they are projected to perform in fields like yours. CHT charts show how various hybrids are projected to perform at high and low plant populations when compared to the following categories:*

- Yield
- · Milk per acre
- NDFD
- Starch

*Other categories are available.

SILAGEFIRST® SEED LINE DELIVERS

The SilageFirst® seed line of products from CROPLAN® seed is specifically designed for high-producing dairy and beef cattle. There are three types of SilageFirst® hybrids.

LEAFY HYBRIDS

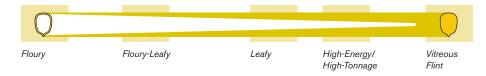
• Leafy stalks are thicker and more digestible, with larger ears to produce more energy.

FLOURY-LEAFY HYBRIDS

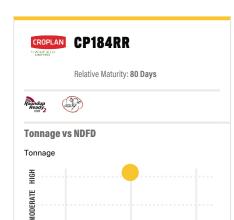
- At feedout, floury-leafy products effectively bridge the gap between the previous year's corn silage pile and the current year's feed.
- Leafy and floury-leafy hybrids may not contain a high level of total starch, but have a softer kernel
 texture that is easily broken during the chopping, storage and chewing process. This allows
 starch to be readily digested for more available energy.

HIGH-ENERGY/HIGH-TONNAGE HYBRIDS

- These hybrids have more flexibility in harvest and feedout as grain or high-energy/high-tonnage silage when used in combination with leafy and floury-leafy hybrids.
- These are appropriate for feeding after the 120+ day post-ensiling period, when they reach
 optimum starch and fiber digestibility.







NDFD · High tonnage potential in an early-maturing hybrid

MODERATE

- Tall aggressive-growing hybrid
- · Large flex ear for wide adaptation to all soils and populations
- Manage for early harvest due to flinty type grain and average standability

Characteristics

LOW

NO.

Seedling Vigor **Drought Tolerance** Root Strenath Tonnage Potential Milk/Acre



HIGH

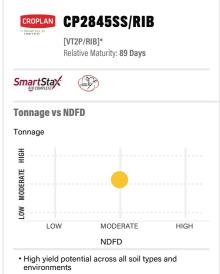
CP2790VT2P/RIB Relative Maturity: 87 Days VTDoublePRO **Tonnage vs NDFD** Tonnage H MODERATE TOW LOW MODERATE HIGH NDFD · High-tonnage potential with strong ear flex and drought tolerance

- Excellent seedling vigor for early planting
- Strong ear flex with a moderate response-tonitrogen; can fit a broad range of growing conditions
- · Manage for late-season stalks and Goss's wilt

Characteristics

Seedling Vigor **Drought Tolerance** Root Strenath Tonnage Potential Milk/Acre





- Plant early, great emergence in cooler soils; excellent conservation-till hybrid
- High response to nitrogen and population optimizes yield potential
- Manage placement for Goss's wilt

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



NEW



CP2965VT2P/RIB

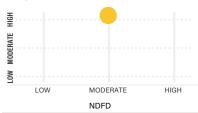
Relative Maturity: 89 Days





Tonnage vs NDFD

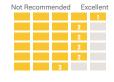
Tonnage



- High yield potential to complement CP2845
- Excellent early vigor for early planting
 Moderate RTP and high RTN boost yield potential on average-to-productive soils
- Acceptable Goss's wilt tolerance

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



NEW CP3200SRR Relative Maturity: 93 Days Roundup Ready **Tonnage vs NDFD** Tonnage 플 MODERATE TOW LOW MODERATE HIGH NDFD

- Floury x leafy silage-only hybrid with very high tonnage potential
- Tall plant with large flex ears that contribute to above average starch
- · Highly responsive to nitrogen and fungicide
- · Best positioned at medium to lower seeding rates to maximize tonnage and agronomics

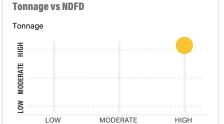
Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



CP3490VT2P/RIB Relative Maturity: 94 Days

VTDoublePRO



- NDFD Consistent tonnage with stability across wide range
- Strong roots deliver strong drought tolerance and performance in poor soils
- Semi-flex ear and strong stalks
- Harvest timely because staygreen is below average

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



KEY

Scale 1 = Excellent 2 = Strong

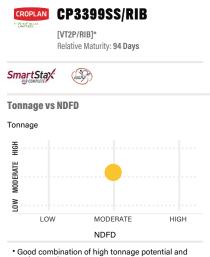
3 = Acceptable 4 = Manage

5 = Not Recommended

Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered



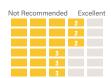
CROPLAN® corn silage hybrids that consistently perform for high-quality and high-tonnage in Answer Plot® trials



- early maturity
- Above-average heat and moisture-stress tolerance
- Exceptional continuous corn-on-corn hybrid
- Some ear flex, although great stress tolerance allows for higher planting populations

Characteristics

Seedling Vigor **Drought Tolerance** Root Strenath Tonnage Potential Milk/Acre Starch



CP3499VT2P/RIB Relative Maturity: 94 Days VTDoublePRO **Tonnage vs NDFD** Tonnage 플 MODERATE TOW

NDFD • Excellent consistency in all yield environments from east to west

MODERATE

- · Offers strong roots, stalks and staygreen
- Some ear flex, although great stress tolerance allows for higher planting populations

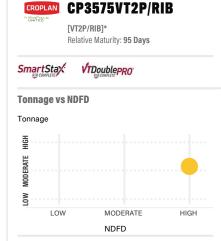
Characteristics

LOW

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



HIGH

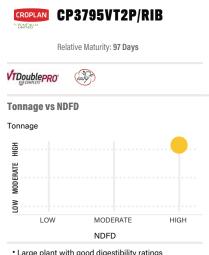


- Dual-purpose hybrid with above-average NDFD and starch content
- Excels in moderate- to high-yield environments and moves across all soil types
- Has good ear flex for low plant densities, but will respond to higher management
- Manage for Goss's wilt

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch





- Large plant with good digestibility ratings
- Improved Goss's wilt tolerance over 3899; strong stalks, roots and seedling vigor
- Low response to fungicide
- Optimize yield potential with enhanced nitrogen

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



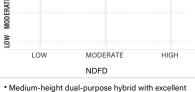
CP3735SS/RIB [VT2P/RIB]*

Relative Maturity: 97 Days

SmartStax

Tonnage vs NDFD

Tonnage 뜐 MODERATE



- · Excellent test weight and emergence with solid
- Plant at moderate-to-high densities; fungicide application is recommended
- Keep in RM zone

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



CP3899VT2P/RIB Relative Maturity: 98 Days

VTDoublePRO

Tonnage vs NDFD

Tonnage 퍒 MODERATE NO7 LOW MODERATE HIGH NDFD

- Tall hybrid with consistently high tonnage potential and above-average digestibility
- Late-flowering with excellent heat and moisture stress tolerance
- Works well in both hot or cool growing seasons
- · Excellent yield potential across all yield environments

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



Scale 1 = Excellent

2 = Strong

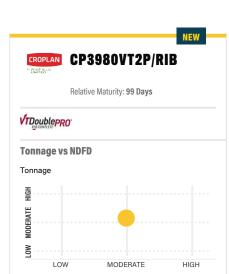
3 = Acceptable

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CROPLAN® corn silage hybrids that consistently perform for high-quality and high-tonnage in Answer Plot® trials



- NDFD Tall hybrid with strong grain yield potential drive high tonnage potential
- Excellent roots and good drought tolerance allow for high seeding rates and high tonnage
- Low response to nitrogen provides consistent performance across variable soils
- · Harvest timely to avoid excess drydown

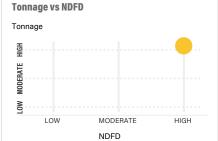
Characteristics

Seedling Vigor **Drought Tolerance** Root Strenath Tonnage Potential Milk/Acre



CP4099SS/RIB Relative Maturity: 100 Days

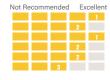
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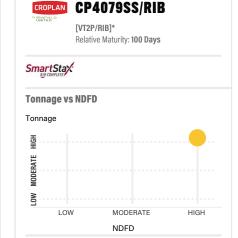


- Tall hybrid with consistently high tonnage potential and above-average digestibility
- · Late-flowering hybrid with excellent roots and seedling vigor for early planting
- High response to intensive management; can also handle average acres
- · Manage in areas with gray leaf spot and NCLB

Characteristics

Seedling Vigor **Drought Tolerance** Root Strength Tonnage Potential Milk/Acre





- Dual-purpose option for most soil types and yield environments
- Medium-tall hybrid with strong Goss's wilt rating and
- seedling vigor; excellent roots

 Position at medium populations and manage nitrogen for high yield potential

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre





CP4100SVT2P/RIB

Relative Maturity: 101 Days

VTDoublePRO*



Tonnage vs NDFD

Tonnage 표 MODERATE LOW LOW MODERATE HIGH

- NDFD • Highly digestible leafy-type silage hybrid with high
- Tall white cob hybrid does best in medium-high
- · Excellent performance for high tonnage and high quality potential
- Average seedling vigor

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



CP4188VT2P/RIB

[SS/RIB*, CONV] Relative Maturity: 101 Days

VTDoublePRO



Tonnage vs NDFD

Tonnage MODERATE TOW LOW MODERATE HIGH

- NDFD · Healthy, versatile, high tonnage dual-purpose hybrid
- · Very attractive plant type with solid agronomic
- · Semi-flex ear allows lower densities, but will respond when population is pushed
- Handles tough, variable and ideal yield environments

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



CP4199SS/RIB

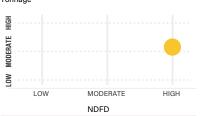
[VT2P/RIB]* Relative Maturity: 101 Days

SmartStax



Tonnage vs NDFD

Tonnage



- Dual-purpose hybrid adapted to fields with variable soils
- · Excellent heat and drought tolerance
- Offensive product also performs well in loweryielding environments
- · Offers a bit more ear flex than 4099

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



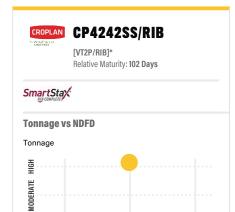
Scale

1 = Excellent 2 = Strong

Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered.



CROPLAN® corn silage hybrids that consistently perform for high-quality and high-tonnage in Answer Plot® trials.



- Excellent consistency from east to west
- Solid agronomics with acceptable staygreen; strong stalks, roots and Goss's wilt tolerance

NDFD

MODERATE

• Has nice ear flex for low-to-medium densities

Characteristics

LOW

LOW

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



HIGH

CP4203SS/RIB

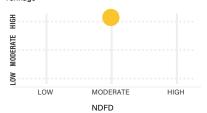
[VT2P/RIB]* Relative Maturity: 102 Days

SmartStax



Tonnage vs NDFD

Tonnage



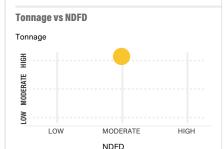
- Medium-height hybrid with very high tonnagepotential
- Tolerates heat well; excellent greensnap tolerance
- Works well across most yield environments
- Optimize yield with enhanced nitrogen management

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



CP4819AS3000GT Relative Maturity: 103 Days Agrisure 3000GT LIBERTY LINK W

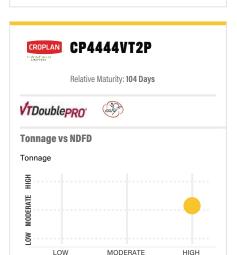


- Tall hybrid with high tonnage potential
- · Medium ear placement and solid agronomics
- Highly responsive to nitrogen fertility
- Excellent Goss's wilt tolerance

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch





- NDFD
 Consistent, versatile hybrid to cover broad acres
- Excellent emergence and seedling vigor; strong stalks and roots
- Manage population in high-yield environments

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



CP4488SS/RIB

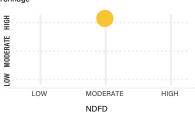
[VT2P/RIB]*
Relative Maturity: 104 Days

SmartStax



Tonnage vs NDFD

Tonnage



- Best-positioned in high-yield environments
- Solid roots and good Goss's wilt tolerance
- High response to population, nitrogen and fungicide; well-adapted to corn-on-corn acres
- Tall hybrid with acceptable stalks

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch

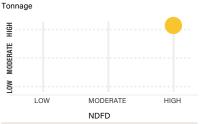


CP4676SS/RIB Relative Maturity: 106 Days

SmartStay:

Tonnage vs NDFD

_



- Versatile hybrid; position and manage for high yield
- Medium-height hybrid with excellent emergence, seedling vigor and test weight
- Position at medium populations and manage nitrogen for high yield potential
- Fungicide application recommended in areas with GLS pressure

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



KEY

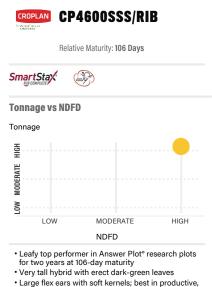
Scale

- 1 = Excellent
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- 3 = Acceptable
- 4 = Manage 5 = Not Recommended

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CROPLAN® corn silage hybrids that consistently perform for high-quality and high-tonnage in Answer Plot® trials



Large flex ears with soft kernels; best in productive, high-fertility soils

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



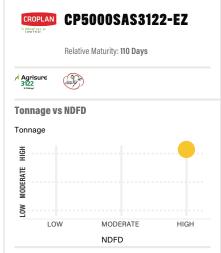
CP4791AS3111 [ASGT] Relative Maturity: 107 Days Agrisure Viptera **Tonnage vs NDFD** Tonnage H MODERATE TOW MODERATE HIGH NDFD

- · Medium-tall silage hybrid with great late-staygreen
- Tough hybrid; semi-flexed ear handles droughty soils and corn-on-corn acres
- · High-starch hybrid; doesn't need high populations
- Excellent disease package, including for gray leaf spot and Goss's wilt

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch





- · Very tall hybrid with girthy stalks that deliver high tonnage potential
- Strong performer with medium-high population and high nitrogen rates
- Keep north of 109-day zone as full-season; best east of lowa and the Pacific Northwest
- · Avoid overpopulating and poorly drained heavy clay

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch





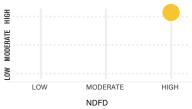
[VT2P/RIB]* Relative Maturity: 110 Days

SmartStax



Tonnage vs NDFD

Tonnage



- Medium height dual-purpose hybrid with soft floury grain type
- Strong early plant vigor for reduced tillage and early planting
- Has nice flex for moderate densities; high response
- Utilize fungicide to enhance late-season health

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



CP6110VT2P/RIB

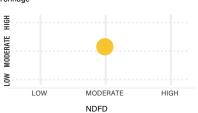
Relative Maturity: 110 Days

VTDoublePRO



Tonnage vs NDFD

Tonnage



- Tough high-tonnage silage hybrid for lower-yielding environments
- · Keep north of the 110-day zone as a full-season silage hvbrid
- Great for irrigated ground; excels with fungicides

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch

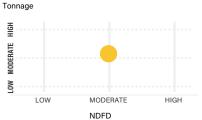


CP5115SS/RIB

[VT2P/RIB]* Relative Maturity: 111 Days

SmartStax

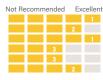
Tonnage vs NDFD



- Medium-tall, dual-purpose hybrid with high tonnage potential at higher seeding rates
- Excellent emergence, seedling vigor and roots
- Semi-flex ear; plant at moderate populations
- · Use caution on Goss's wilt acres; keep in RM zone

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



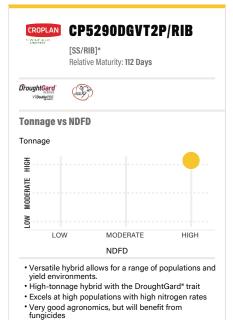
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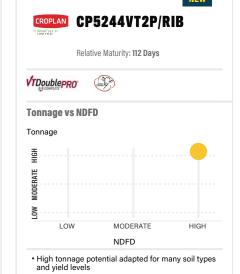


CROPLAN® corn silage hybrids that consistently perform for high-quality and high-tonnage in Answer Plot® trials.





CP5277AS3220-EZ Relative Maturity: 112 Days Agrisure Viptera **Tonnage vs NDFD** Tonnage H MODERATE TOW MODERATE HIGH NDFD Consistent high-yielding product has solid performance east to west

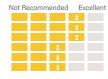




- Medium-tall plant with solid agronomics, plant health, staygreen and grain quality
- Optimize yield potential with moderate plus populations; needs fungicide and nitrogen management

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch





Robust plant with strong heat and drought tolerance allow broad use of this high-starch dual-purpose

• Ear flex and stress tolerance drive performance in a wide range of populations and soil types Fungicide application increases staygreen and harvest flexibility

hvbrid

Root Strength

Milk/Acre Starch

Tonnage Potential

Characteristics

Drought Tolerance

Tonnage Potential

Seedling Vigor

Root Strength

Milk/Acre

Starch



Not Recommended Excellent

3

Characteristics

Drought Tolerance

Tonnage Potential

Seedling Vigor

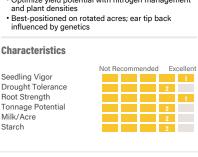
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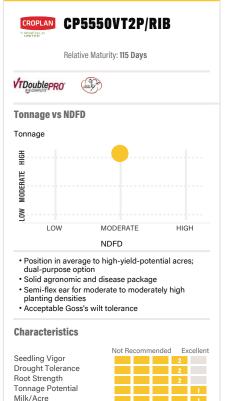
Milk/Acre

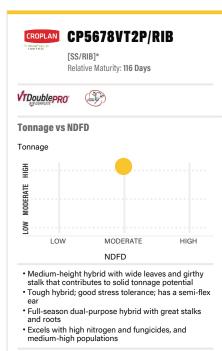
Starch

Tonnage vs NDFD Tonnage 표 MODERATE F0W LOW MODERATE HIGH

- NDFD • Tall hybrid with very high tonnage potential and above average starch content
- Excellent stalks and roots
- Optimize yield potential with nitrogen management and plant densities







Excellent

Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered.

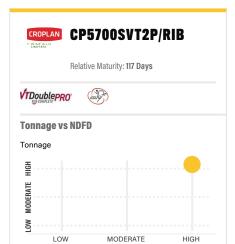


CROPLAN® corn silage hybrids that

- Scale 1 = Excellent
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- 4 = Manage 5 = Not Recommended

Starch

consistently perform for high-quality and high-tonnage in Answer Plot® trials.



- Top hybrid in silage trials for both tonnage and
- Performs extremely well in the Midwest, Southeast, West and Pacific Northwest

NDFD

· Takes heat and stress at a wide range of populations Needs high rates of nitrogen/manure for optimal yield potential; high response to fungicides

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch



CP5789VT2P/RIB

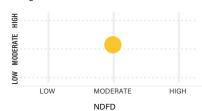
Relative Maturity: 117 Days

VTDoublePRO*



Tonnage vs NDFD

Tonnage



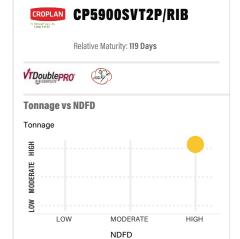
- Taller dual-purpose hybrid with high tonnage
- potential across multiple environments

 Tall plant with excellent stalks, roots, staygreen and test weight
- · Position at medium-high populations with moderate nitrogen management
- Fungicide application recommended

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch





- Tall silage hybrid with very high tonnage potential and above-average digestibility
- Strong heat tolerance; exceptional high pH soil tolerance
- Very good southern rust tolerance; good for corn-on-corn acres
- Decrease populations in heavy soils prone to

Characteristics

Seedling Vigor Drought Tolerance Root Strength Tonnage Potential Milk/Acre Starch





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KEY Scale

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5 = Not Recommended
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Plant Height XT = Extra Tall
T = Tall
M = Medium
S = Short

supplier and may change as additional data is gathered.

2 Ear Height
H = High
M = Medium
L = Low

FL = Flex
SF = Semi-flex
FX = Fixed 8 Ear Flex

L = Late
M = Medium
E = Early

4 Flower Date

L = Low Response
M = Moderate Response
H = High Response
TBD = To be tested in 2021

STP/RTN/RTCC/RTF Ratings

of grain starch
S = Slow
M = Moderate F = Fast

© Calibrate® Starch Rating

Relative rumen digestibility

silage samples. Ratings based on 2018-2020

Calibrate® Fiber Rating

Ratings based on 2018-2020 silage samples. F = Fast S = Slow M = Moderate

Relative rumen digestibility of fiber

						NEW																
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KEY Scale

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5 = Not Recommended
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Plant Height

2 Ear Height H = High
M = Medium
L = Low

4 Flower Date L = Late
M = Medium
E = Early

XT = Extra Tall
T = Tall
M = Medium
S = Short

FL = Flex
SF = Semi-flex
FX = Fixed Ear Flex

STP/RTN/RTCC/RTF Ratings

L = Low Response
M = Moderate Response
H = High Response
TBD = To be tested in 2021

of grain starch **S** = Slow

M = Moderate

Calibrate® Starch Rating

Relative rumen digestibility

silage samples. F = Fast Ratings based on 2018-2020

Calibrate® Fiber Rating

S = Slow

Relative rumen digestibility of fiber

silage samples. Ratings based on 2018-2020 F = Fast M = Moderate



Product Name	
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FORAGE SORGHUM



More tonnage potential and not an ounce of excuses.

You hear a lot of talk about how to improve tonnage. Soon enough, it all starts to sound the same. We know what you want most: bottom-line results. Our job is to help you get those results with the right forage sorghum genetics. It's how we deliver the best nutrition, high total plant digestibility, and the specific traits that optimize production and quality.

We put all of this expertise into a comprehensive, season-long plan that's long on results and never filled with excuses.

KEY TAKEAWAYS

- Select the right forage type for your operation.
- 2 Choose a hybrid that has the traits you need.
- 3 Practice in-season management for optimal production.

SELECT THE RIGHT FORAGE TYPE

► Forage Sorghum (single-cut silage)

Tall plant that has a sweet stalk and small grain head with limited regrowth potential.

► Sorghum x Sudan (multi-cut or grazing)

Strong tillering and regrowth ability, which is ideal for multiple harvests with increased tonnage potential.

► Pearl Millet (multi-cut or grazing)

Brachytic plant stature with finer stalks and prolific tillering.

SELECT THE HYBRID WITH THE TRAIT YOU NEED

BROWN MIDRIB-6 TRAIT

- Excellent forage quality and agronomics.
- The nutritional value potential is comparable to corn silage.
- Trait available in the following forage types: forage sorghum, sorghum x sudan, pearl millet.

BRACHYTIC TRAIT

- Shorter stature and high leaf-to-stem ratio due to reduced internode length.
- Excellent standability and tillering.
- Trait available in the following forage types: forage sorghum, sorghum x sudan, pearl millet.

PHOTOPERIOD SENSITIVITY TRAIT

- Extended harvest window.
- Remains vegetative until day length falls below 12 hours and 20 minutes; it will then enter the reproductive stage.
- Trait available in the following forage types: forage sorghum, sorghum x sudan.

SUGARCANE APHID (SCA)

- Use a tolerant hybrid to slow down the rate of infestation.
- Use seed treatment for early control.
- Plant as early as soil temperature allows.
 An earlier-maturity variety may help avoid late-season infestations.
- Scout early and often; treat as soon as threshold is reached.
- Avoid use of pyrethroids and other insecticides that are harmful to beneficials (SCA natural enemies include lady beetles, hover fly and green lacewing). Insecticides may cause SCA numbers to increase rapidly.

IN-SEASON MANAGEMENT

TREATED SEED

► Seed Safener Treatment

Helps protect seed against preemergence herbicide applications, some herbicide carryover or residual, and some grass herbicides.

► Systemic Insecticide Treatment

Effective on aboveground insects, such as early sugarcane aphid, for roughly 40 days.

▶ Base Seed Treatment

Pearl millet hybrids include a base seed treatment only.

WEED CONTROL

Herbicides for forage sorghums are limited to bromoxynil, atrazine, metolachlor or 2,4-D.1

- Metolachlor, by itself or in combination with atrazine, is the recommended preemergence herbicide.
- There are no postemergence grass herbicides.
- Broadleaf postemergence herbicides include 2,4-D, bromoxynil and Huskie® herbicide.
- The best way to control weeds is to start with clean ground and get the crop up and shading the soil as quickly as possible.

FERTILITY

- ➤ Sorghums require 1 to 1.25 units of nitrogen per growing day. Apply at a 5:1 ratio of nitrogen to sulfur to help the plant convert nitrogen to protein.
- Stressed plants will not convert nitrate into usable protein, resulting in high concentrations of nitrates in the plant.
 High nitrates can be toxic if fed to cattle.

FEEDING/HARVEST MANAGEMENT

FORAGE SORGHUM

- · Harvest at late-milk to soft-dough stage.
- Single-cut for silage when plant reaches 67% to 72% whole plant moisture.
- Forage sorghums can be harvested after frost in the North for silage.
- Manage harvest moisture to meet operational needs, consider swath and wilt method in order to chop at the proper whole plant moisture.

SORGHUM X SUDAN

- Optimal harvest timing is 40 days or 40 inches tall.
- Dry hay in the Plains, West, South and Southwest; haylage or baleage in the Midwest, East and Southeast.
- Start summer grazing when plants reach 18 to 24 inches. Remove animals when two nodes are left above the ground.
- Forage quality and yield can be maximized at flag leaf stage.

PEARL MILLET

- Optimal harvest timing is 40 days or 40 inches tall.
- No prussic acid and highly digestible makes this a great choice for horse feed.
- Fine stalks allow the ability to make dry hay in areas with high summer humidity.
- Start summer grazing when plants reach 18 to 24 inches. Remove animals when there is six-inches of stubble height.
 Forage quality and yield can be maximized at flag leaf stage.
- 1. Read all labels before application.



CROPLAN BMR 3212

Regions: Central|East|North|Double-crop Maturity: Early

Characteristics

Stress Tolerance Forage Quality Disease Tolerance Hay Silage Grazing



- Early-maturing forage sorghum hybrid with excellent yield potential
- BMR-6 trait with excellent forage quality potential; great for lactating cows
- Strong disease resistance; moves well north and east; excellent option for double-cropping in the Central Plains regions
- Avoid overwatering and excessive populations; plants can reach 8 feet tall
- Recommended seeding rate: 60,000 to 70,000 seeds per acre at 1 to 11/2 inches deep, depending on soil moisture

CROPLAN 10 3501

Regions: Central|South|West Maturity: Mid

Characteristics

Stress Tolerance Forage Quality Disease Tolerance Hay Silage Grazing



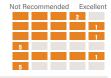
- New line of genetics; the IQ (improved quality) series is selected for higher forage quality potential than conventional hybrids
 Extremely flexible hybrid; excellent disease and
- drought tolerance allow for placement across most of the U.S.
- Excellent yield potential; similar to a late-season hvbrid
- Excellent standability; plants can reach 7 to 8 feet tall; manage water and fertility for a mid-maturity
- Recommended seeding rate: 50,000 to 60,000 seeds per acre at 1 to 11/2 inches deep, depending on soil moisture

CROPLAN 3531 BMR Leafy

Regions: Central|South|West Maturity: Mid

Characteristics

Stress Tolerance Forage Quality Disease Tolerance Hay Silage Grazing



- Excellent forage quality of the BMR-6 gene paired with the brachytic dwarf trait for high leaf-to-stem
- · Extremely flexible hybrid: excellent disease and drought tolerance allow for placement across most of the U.S.
- Mid-maturity variety with excellent combination of yield potential and quality
 Combining the brachytic dwarf traits with
- excellent stalks, standability is excellent with a 6-7 foot plant height
- Recommended seeding rate: 60,000 to 100,000 seeds per acre at 1 to 11/2 inches deep, depending on soil moisture

CROPLAN 3681 AT

Regions: Central|South|West Maturity: Mid/Late

Characteristics

Stress Tolerance Forage Quality Disease Tolerance Hay Silage Grazing



- Conventional hybrid with excellent tolerance to sugarcane aphid (SCA); SCA may be on plant in low numbers, plant handles stress well
- Extremely flexible hybrid; excellent disease and drought tolerance allow for placement across Central and Southern U.S.
- Very high leaf expression and great stalks deliver good vield potential
- Excellent standability; plants can reach 8 to 9 feet tall; manage water and fertility for a mid-maturity
- Recommended seeding rate: 60,000 to 70,000 seeds per acre at 1 to 11/2 inches deep, depending on soil moisture

CROPLAN 3731 BMR Leafy

Regions: Central|South|West Maturity: Late

Characteristics

Stress Tolerance Forage Quality Disease Tolerance Hay Silage Grazing



- Excellent forage quality of the BMR-6 gene paired with the brachytic dwarf trait for high leaf-to-stem ratio
- Extremely flexible hybrid; excellent disease and drought tolerance allow for placement across most of the U.S.
- Late maturity variety with excellent combination of yield potential and quality requiring a full growing season
- Combining the brachytic dwarf traits with excellent stalks, standability is excellent with a 6-7 foot plant height
- Recommended seeding rate: 60,000 to 100,000 seeds per acre at 1 to 11/2 inches deep, depending on soil moisture

CROPLAN. Greentreat® 1531

Regions: Central|East|North|South|West Maturity: Heads at ~50 days

Characteristics

Stress Tolerance Forage Quality Disease Tolerance Hay Silage Grazing



- Excellent forage quality of the BMR-6 gene paired with the brachytic dwarf trait for lower cutting height and high leaf-to-stem ratio
- A best-in-class variety for drought tolerance and heat stress; strong disease package for humid areas and those at risk for anthracnose
- Dry stalk (~5% less) paired with fine stems allows for easier transition into dry hay use

 Requires proper harvest management or forage
- quality may be compromised (40 days or 40 inches); harvest prior to 50 days before head is initiated
- Recommended seeding rate: 20 to 25 pounds per acre at 1 inch (by drill is recommended)

Scale 1 = Excellent

2 = Strong

from the genetics supplier and may change 3 = Acceptable as additional data is gathered. 4 = Manage 5 = Not Recommended

Product descriptions and ratings are

generated from Answer Plot® trials and/or

Hybrid Number System

First Number: 1 = Sorghum x Sudan; 2 = Sudan; 3 = Forage Sorghum; 4 = Pearl Millet Second Number: 1 = very early; 2 = early; 3-4 = mid-early; 5 = mid; 6-7 = mid-late; 8 = late; 9 = PPS Third Number: 0 = No special features; 1 = BMR; 2 = BMR and photoperiod;

 $\mathbf{3} = \mathsf{BMR}$ and brachytic; $\mathbf{5} = \mathsf{Conventional}$ dwarf, not a brachytic; $\mathbf{8} = \mathsf{Photoperiod}$

Fourth Number: Series number or new variety type

Greentreat® 1731

Regions: Central|East|North|South|West Maturity: Heads at ~60 days

Characteristics

Stress Tolerance Forage Quality Disease Tolerance Silage Grazing



- Great forage quality with the BMR-6 gene; moves well across growing regions
- The brachytic dwarf trait provides shortened internode length for lower harvest height and greater leaf-to-stem ratio
- Ideal for hay or grazing systems; fast growing and quick recovery after cutting
- Harvest at 40 days or 40 inches, whichever comes first; for grazing, start when plants reach 18 to 24 inches, remove animals when two nodes are left aboveground
- Recommended seeding rate: 20 to 25 pounds per acre at a depth of 1 inch (by drill is recommended)

CROPLAN GUARDIAN AT

Regions: Central|East|North|South|West Maturity: Heads at ~60 days

Characteristics

Stress Tolerance Forage Quality Disease Tolerance Silage Grazing



- Great forage quality with the BMR-6 gene; moves well across growing regions
- The brachytic dwarf trait provides shortened internode length for lower harvest height and greater leaf-to-stem ratio
- Sugarcane aphid tolerance offers in-plant crop protection; can handle more cuttings with confidence
- · Harvest at 40 days or 40 inches, whichever comes first; for grazing, start when plants reach 18 to 24 inches, remove animals when two nodes are left aboveground
- Recommended seeding rate: 20 to 25 pounds per acre at a depth of 1 inch (by drill is recommended)

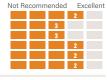
Greentreat® 1923

Regions: Central|East|North|South|West

Maturity: photoperiod sensitive

Characteristics

Stress Tolerance Forage Quality Disease Tolerance Silage Grazing



- High yield potential product with the BMR trait for excellent warm-season accumulation of highly digestible fiber
- Photoperiod sensitive trait allows the plant to remain in the vegetative state with a minimum of 12 hours and 20 minutes of daily sunlight; then head formation starts
- Excellent disease tolerance; strong drought and heat tolerance; moves well east to west and north to south
- Versatile product for grazing, baled hay or silage with excellent regrowth; easier to dry when cut at 40 days or 40 inches
- Recommended seeding rate: 20 to 25 pounds per acre at a depth of 1 inch (by drill is recommended)

CROPLAN Honey Sweet AT

Regions: Central|East|North|South|West Maturity: heads at ~50 days

Characteristics

Stress Tolerance Forage Quality Disease Tolerance Silage Grazina



- · In-plant sugarcane aphid tolerance
- Conventional Sorghum x Sudan for an economic choice
- Experience multiple cuttings in SCA areas with confidence
- Great germination and vigor

CROPLAN PM 4611 BMR

Regions: Central|East|North|South|West Maturity: Heads at ~50 days

Characteristics

Stress Tolerance Forage Quality Disease Tolerance Silage Grazina



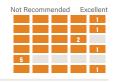
- Leafy, compact structure; the BMR-6 gene provides superior forage digestibility
- Extremely uniform in maturing height with high yield potential and quick drydown; ideal for baled hay
- Resistant to sugarcane aphid; good disease tolerance and well-adapted for use in all growing
- Great for horses as dry hay or grazing with no prussic acid; harvest at 40 days or 40 inches
- Recommended seeding rate: 10 to 15 pounds per acre at a depth of 3/4 inch (by drill is recommended)

CROPLAN PM 4612 BMR

Regions: Central|East|North|South|West Maturity: Heads at ~50 days

Characteristics

Stress Tolerance Forage Quality Disease Tolerance Silage Grazina



NEW

- Will eventually replace 4611 BMR, with no major differences; leafy, compact structure; the BMR-6 gene provides exceptional forage digestibility potential
- Extremely uniform in maturing height with high yield potential and quick drydown; ideal for baled hay
- · Resistant to sugarcane aphid; good disease tolerance and well-adapted for use in all growing
- Great for horses as dry hay or grazing with no prussic acid; harvest at 40 days or 40 inches
- Recommended seeding rate: 10 to 15 pounds per acre at a depth of 3/4 inch (by drill is

Scale 1 = Excellent

2 = Strong 3 = Acceptable

4 = Manage

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3 = BMR and brachytic; 5 = Conventional dwarf, not a brachytic; 8 = Photoperiod

Fourth Number: Series number or new variety type



CROPLAN PM 4507 PM

Regions: Central|East|North|South|West Maturity: Heads at ~50 days

Characteristics

Stress Tolerance Forage Quality Disease Tolerance Hay Silage Grazing



- Leafy, compact structure with extremely uniform maturing height
 Excellent yield potential and quick drydown; ideal for baled hay
- Resistant to sugarcane aphid; good disease tolerance and well-adapted for use in all growing areas
- Great for horses as dry hay or grazing with no prussic acid; harvest at 40 days or 40 inches
- Recommended seeding rate: 10 to 15 pounds per acre at a depth of 3/4 inch (by drill is recommended)

NEW PM 4612 BMR

Heads at ~50 days

Heads at ~50 days

10-15 lbs

10-15 lbs

Heads at ~50 days

10-15 lbs

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PM 4611 BMR

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Greentreat® 1731 Greentreat® 1531

Heads at ~60 days Heads at ~50 days

Heads at ~60 days

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Greentreat® 1923

Photoperiod sensitive Photoperiod sensitive

Heads at ~50 days

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20-25 lbs

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NEW 3731 BMR Leafy NEW 3681 AT NEW 3531 BMR Leafy

<u>UDAN HYBRIDS</u>

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1-1 1/2"

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NEW BMR 3212

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4 = Manage 3 = Acceptable 2 = Strong

5 = Not Recommended

trials and/or from the genetics additional data is gathered. supplier and may change as are generated from Answer Plot^e Product descriptions and ratings

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Fourth Number: Series number or new variety type



Product Name	
Attributes	
Placement	
Product Name	
Attributes	
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Product Name	
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Placement	



SPRING CANOLA



The right plan never stops working.

There's no quit in you. And we've got some of the industry-leading innovations to makesure there's no quit in your spring canola crop. Like the latest solutions to disease issues, resistance to clubroot and blackleg, and the crop safety and weed-control features in TruFlex™ canola with Roundup Ready® Technology. Plus, established products like Roundup Ready® Spring Canola and the LibertyLink® system deliver outstanding yield potential, excellent crop safety and easier management.

Sound like a plan?

KEY TAKEAWAYS

- 1 Pick the right genetics for your environment.
- 2 Take advantage of the latest resistance genes for blackleg and clubroot.
- 3 Leverage the enhanced weed management and crop safety features of the LibertyLink® system and TruFlex™ canola with Roundup Ready® Technology.
- 4 Evaluate your disease environment, crop rotation and other production practices.

CHOOSE THE RIGHT GENETICS AND TRAITS FOR YOUR ENVIRONMENT

The CROPLAN® seed canola portfolio brings genetic diversity to the farm with the latest weed-control options such as the LibertyLink® canola system and TruFlex™ canola, which offers outstanding crop safety.





LIBERTYLINK® CANOLA SYSTEM

- Liberty® herbicide use on canola hybrids with the LibertyLink® trait provides an excellent means for growers to rotate nonselective herbicide systems to effectively manage tough to control weeds.
- Provides an alternative herbicide tolerance system.
- Unique mode of action.

THE TRUFLEX™ WITH ROUNDUP READY® TECHNOLOGY SYSTEM HELPS YOU:

- Have the ability to spray up to first flower.
- Manage both annual weeds and toughto-control perennials, including Canada thistle, dandelion and wild buckwheat.
- Be flexible with the Roundup PowerMAX® herbicide application rate to get the job done using 44 fluid oz. per acre or applying sequential rates of 22 fluid oz. per acre.

 Achieve better weed control and crop safety compared to Roundup Ready® Canola for improved yield potential.

MANAGE DISEASE

Optimizing canola performance includes evaluating cropping system elements such as disease environment, crop rotation and other production practices.

BLACKLEG

- Select hybrids that are rated "R" (most resistant) for this disease.
- Rotation is very important in keeping disease inoculum levels low.
- Rotation of blackleg-resistant groups can also be beneficial.
- Tank mixing a fungicide with an early weed-control application at the 2- to 3-leaf stage can potentially reduce your risk of yield loss.

CLUBROOT

- Clubroot hinders the canola plant root from developing and utilizing soil moisture and nutrients.
- It can be mistaken for other diseases, such as sclerotinia or blackleg, so it is important to dig up suspected plants.
- It is more difficult for clubroot to thrive when soils have a pH above 7.0.

Taking these steps can help slow the spread of clubroot:

- · Clean equipment thoroughly.
- Control canola volunteers and other weeds that can host the disease.
- Plant CP955R, CP7130LL or CP7144LL, clubroot-resistant CROPLAN® hybrids.

LUMIDERM™ INSECTICIDE SEED TREATMENT

- Improved 30-day control of flea beetle and cutworm.
- Giving your crop a leg up on flea beetles and cutworms during this period provides it with the opportunity to experience increases in stand establishment, plant vigor and biomass.

6 TIPS FOR STRAIGHT-CUTTING CANOLA

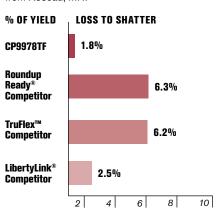
- Select a hybrid with an adequate shatter score that's better suited for straightcutting.
- 2 Control weeds and diseases in every field.
- **3** Ensure a uniform stand; proper seeding rates will help.
- **4** Harvest in a timely manner, as soon as the seed is dry enough to store.
- **5** If the field is variable when approaching harvest, consider desiccation.
- **6** Utilize straight cut hybrids which offer shatter and standability assurance.



This symbol next to a CROPLAN® product means it has met the standability and reduced shatter requirements for straight-cut.

CROPLAN® SEED DELIVERS AN EXCELLENT SHATTER SCORE

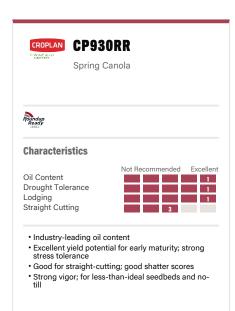
CROPLAN® seed TruFlex™ canola (CP9978TF) showed a lower shatter score than competitive checks in a recent study from Roseau, MN.

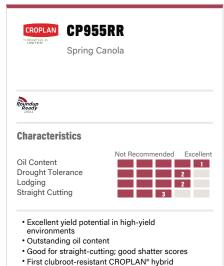


Source: 2019 Canola Shattering Variety Trial. Northern Resources, Roseau, Minn.

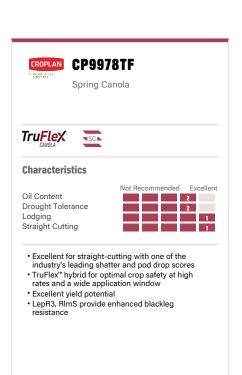
1. Results not statistically significant and may vary. Because of factors outside of WinField United's control, such as weather, product application and any other factors, results to be obtained, including but not limited to yields, financial performance or profits, cannot be predicted or guaranteed by WinField United.

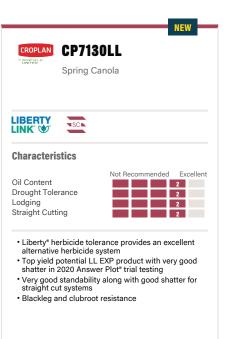


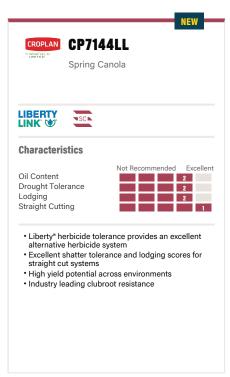












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NEW	NEW								
NEW CP7144LL	CP7130LL	LIBERTYLINK® CANOLA	CP9978TF	TRUFLEX™ CANOLA	CP9919RR	CP955RR	CP930RR	ROUNDUP READY® CANOLA	hert aufe van Harden
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KEY Scale 1 = Excellent

2 = Strong 3 = Acceptable

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Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered.

*Major resistance gene groups are subject to change.

Blackleg Field Resistance

Height T = Tall

M = Medium

S = Short

R = Resistant
MR = Moderately Resistant
MS = Moderately Susceptible
S = Susceptible

× = 0 - _ _ _ _ _ 0 0 8 8

8 Blackleg Resistance Group

5 Clubroot R = Resistant; clubroot genes are effective against pathotypes 2, 2B, 3, 3A, 5, 5X, 6 and 8

RTP Ratings

L = Low Response
M = Moderate Response
H = High Response



Product Name	
Attributes	
Placement	
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Attributes	
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WINTER CANOLA



Getting top yield takes hard work, not guesswork.

You work hard to reach the yield potential you want. We use local and national data to determine the best way for you to achieve winterhardy canola.

We offer four types of winter canola: Roundup Ready® Canola and Roundup Ready® Canola that is sulfonylurea residual tolerant (SURT), as well as conventional canola and conventional with G2Flex™ technology. These are critical traits of winter canola that thrive in various cropping systems.

All that work is worth it. Sound like a plan?

KEY TAKEAWAYS

- 1 CROPLAN® seed offers a choice of two herbicide-tolerant trait systems, as well as rotational flexibility with G2Flex™ technology.
- **2** Proper row spacing and plant-to-plant spacing are important.
- 3 Practice good nutrient management, especially with nitrogen, sulfur and boron.
- 4 Implement planting for winterhardiness strategies.

USE CUTTING-EDGE WEED CONTROL

CROPLAN® seed offers two herbicide management systems.

ROUNDUP READY® WINTER CANOLA

- Strong on cheat, feral rye and other tough grasses.
- Optimal control with Class Act® NG® and InterLock® adjuvants.
- Excellent crop safety with Roundup® brand agricultural herbicide for in-crop applications.

ROUNDUP READY® WINTER CANOLA WITH SURT

- Review the crop protection history of previous wheat crops.
- In field trials, SURT products provided improved crop safety from previous wheat crops with a long-residual sulfonylurea herbicide.
- Canola is susceptible to many broadleaf herbicides with a long residual life.





NEW CANOLA ROTATIONAL OPPORTUNITY

Group 2 Flexible (G2Flex™) residual tolerance technology allows canola to be planted right behind wheat in soils with Group 2 herbicide residuals, including imidazolinones, sulfonylureas, sulfonamides and triazolopyrimidines.

Pursuit® and Beyond® herbicides, two Group 2 products commonly used in both pulse and wheat production, often prohibit canola from being added to a rotation. And many wheat-fallow rotations have traditionally utilized Group 2 products like Ally® and Glean® herbicide, which can prevent growers from working canola into their rotation for more than 4 years. G2Flex™ canola has been successfully cultivated in field trials where a Group 2 herbicide was applied on the previous wheat crop, in the same soils where other oilseeds failed to produce. This will allow more producers the opportunity to try winter canola.

WinField® United is the exclusive provider of the only canola variety with the G2Flex™ trait—CROPLAN® CP1022WC winter canola.



PLANT AT THE RIGHT POPULATION

Low plant densities can cause yield and weed-control problems.

Evaluations at Answer Plot® trials have led us to recommend a seeding rate of 4 to 5 lbs. per acre to establish 8 to 12 plants per square foot. In poor planting conditions, however, the seeding rate should be increased.¹

TIPS ON ROW SPACING

- The most common spacing is 6 to 10 inches, which is often higher-yielding.
- Plug every other row of the seeder to make 12- to 20-inch rows and to increase stand establishment.
- Using a 30-inch planter is another option; however, 30-inch rows can reduce yield potential. Reduce crowding by decreasing the seeding rate to around 4 lbs. per acre.

MONITOR NUTRIENT LEVELS

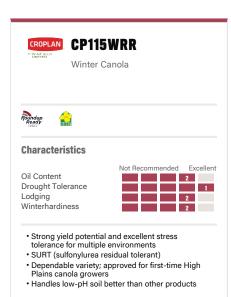
The fertility required for a 2,000 lb. canola crop is:

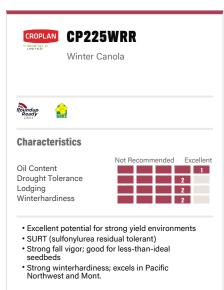
- 100 to 130 lbs. of nitrogen
- 50 lbs. of phosphorus
- 100 lbs. of potassium
- 30 lbs. of sulfur
- Use caution when applying nutrients at seeding because canola is sensitive to fertilizer salts. Applying nutrients through top-dressing or prior to seeding is the safest method.

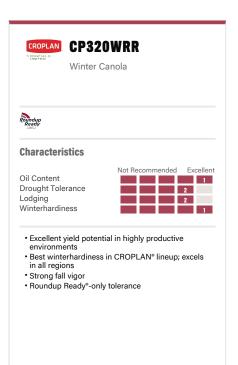
TIPS ON PLANTING FOR WINTERHARDINESS

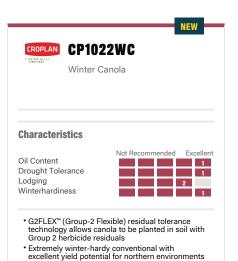
- Canola should be planted six weeks before the first killing frost date for the area (less than 25 degrees Fahrenheight).
- Seeding date is important to establishing a crop that has sufficient growth for good winterhardiness.
- 3. Late planting does not allow for sufficient root reserves to maximize winter survival.
- 4. Better winterhardiness can be achieved by planting into a clean seedbed that's free of crop residue. Crop residue can elevate plant crowns and expose them to more temperature fluctuations and winterkill.
- 1. Because of factors outside of WinField United's control, such as weather, product application and any other factors, results to be obtained, including but not limited to yields, financial performance or profits, cannot be predicted or guaranteed by WinField United.





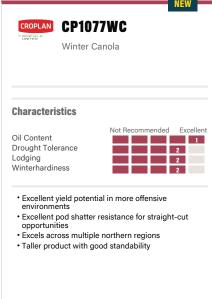


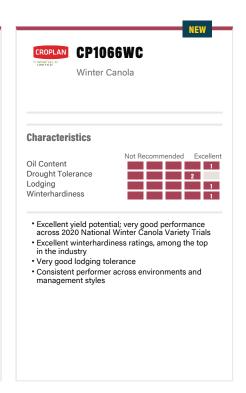




Consistent yield performance across environments

· Very good standability for harvest flexibility





NEW CP1077WC NEW CP1066WC

CP225WRR CP115WRR

CONVENTIONAL WINTER CANOLA

Conventional Winter Canola

Roundup Ready + SURT Roundup Ready + SURT

Open Pollinated Open Pollinated

100,000-130,000 Medium

≤ M-S

100,000-130,000

Medium

2

2

2

2 2

2

Conventional Winter Canola

Hybrid

Open Pollinated

100,000-130,000

≤

2

2

2 2

100,000-130,000

Medium Medium CP320WRR

ROUNDUP READY® WINTER CANOLA

ROUNDUP READY® + SURT WINTER CANOLA

Roundup Ready

Open Pollinated

100,000-130,000

Medium

≤

__

2

2

CONVENTIONAL + G2FLEX™ WINTER CANOLA

G2FLEX™

Open Pollinated

100,000-130,000

Medium

≤

2

NEW CP1022WC

5580HJBHJBHJH

O IIII SH

Institud Ita

CROPLAN WINFIELD

KHIREW

John IR 3 Bulgari 3 July Bull Hitteld

KEY

Scale

1 = Excellent 2 = Strong 3 = Acceptable

5 = Not Recommended 4 = Manage

is gathered.

Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data

Height Ratings

T = Tall **M** = Medium **S** = Short



Product Name	
Attributes	
Placement	
Product Name	
Attributes	
Placement	
Product Name	
Attributes	
Placement	
Product Name	
Attributes	
Placement	







Target your markets and hold nothing back.

In the seed business, experience matters. CROPLAN® seed has been in the sunflower business for more than 20 years. That history and know-how allow us to offer you a broad spectrum of diverse sunflower genetics.

Because of extensive testing and screening conducted locally through the Answer Plot® program, we can help select the best sunflower seed genetics for your operation. The genetics we offer can help manage disease pressure in your fields, with hybrids that can be positioned based on specific field stresses. And we have the latest traits in our portfolio. That's technology — and experience — you can count on.

KEY TAKEAWAYS

- 1 Understand your market options.
- 2 Gain access to new genetics.
- **3** Choose traits designed to manage weed pressure.
- 4 Implement an effective weed-control strategy.

ACHIEVE YOUR MARKETING OBJECTIVES

Sunflower has become a market segmented by grain uses, and any single hybrid might fit one or more market options. Sunflower markets include:

OIL-TYPE SUNFLOWER

► High Oleic

Specific oil levels trending above 85% oleic based on market requirements.*

► NuSun®

Standard for the oil market.

► Hulling

All oil types that have proper seed size and ease of shell removal.

▶ Birdseed

Regional markets throughout the United States for all oil types.

*Contracting buyers' current high oleic percent rate.

CONSIDER SEED SIZE AND COATING

SUNFLOWER SEED SIZE

Plant-to-plant spacing is important, and seed size can play a role in achieving the correct spacing and population in sunflower crops.

PROSUN™ PRECISE SEED COATING

Prosun™ precise seed coating is available on a number of CROPLAN® sunflower varieties and offers:

- More seed size options per variety
- · Consistent seed size, which helps optimize yield potential
- · Uniformity in stand establishment
- Even growth for optimal weed, disease and insect management

CHOOSE THE RIGHT TRAITS

We have a long history of offering farmers the DuPont™ ExpressSun® and the Clearfield® Production System traits. Both provide good weed-control options to farmers.

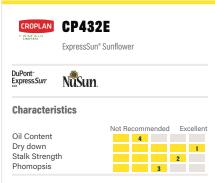
CONTROL WEEDS

BEYOND® AND EXPRESS® HERBICIDES

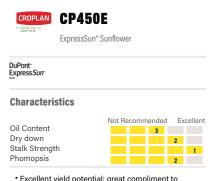
- Both traits have advanced yield potential.
- Both require preemergence herbicide treatments (Spartan® Charge, BroadAxe® or Prowl® H₂0) or preplant-incorporated herbicides (Framework®, Prowl® H₂0 or Sonalan®) to combat kochia and Russian thistle.
- Both are a Group 2 herbicide mode of action.
- The DuPont™ ExpressSun® trait is tolerant to Express® herbicide.
- The Clearfield® Production System is tolerant to Beyond® herbicide.

ACTIVITY	BEYOND® HERBICIDE	EXPRESS® HERBICIDE
Activity on grass	Yes	No
Recommended Section® Three herbicide tank mix	Yes	Yes
Residual control	Yes	No
Better control of cocklebur, nightshade, lanceleaf sage, smartweed and grasses	Yes	No
Better control of Canada thistle, lambsquarters and wild buckwheat	No	Yes
Can be applied across a broader crop stage, from one leaf to bud	No	Yes
Can be applied a second time for later flushes	No	Yes

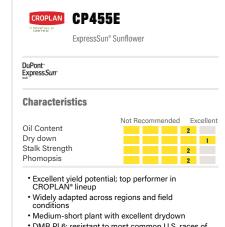




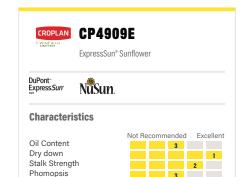
- High yield potential for early maturity
- Shorter plant height; very uniform
- DMR PI 8; resistant to all common U.S. races of downy mildew
- Nice seed size for dehulling option



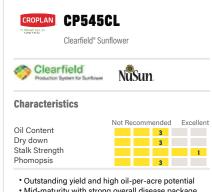
- Excellent yield potential; great compliment to CP455E
- Top performer in stressed environments
- Stronger standability than CP455E; good hybrid to
- DMR PI 8; resistant to all common U.S. races of downy mildew



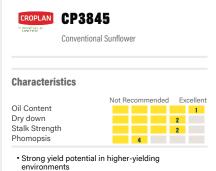
DMR PI 6; resistant to most common U.S. races of downy mildew

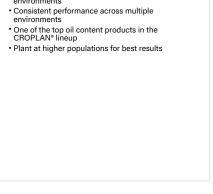


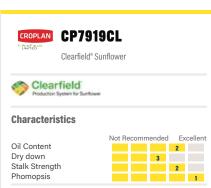
- Top-end yield potential in high-yield environments; use caution on droughty soils
- Unique genetic diversity in the ExpressSun® lineup
- · Short stature for excellent standability
- · Great stalk strength but doubles/triples may



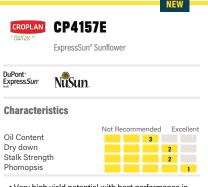
- · Mid-maturity with strong overall disease package
- DMR PI 6; resistant to most common U.S. races of downy mildew
- Increased staygreen and slower drydown in cooler environments





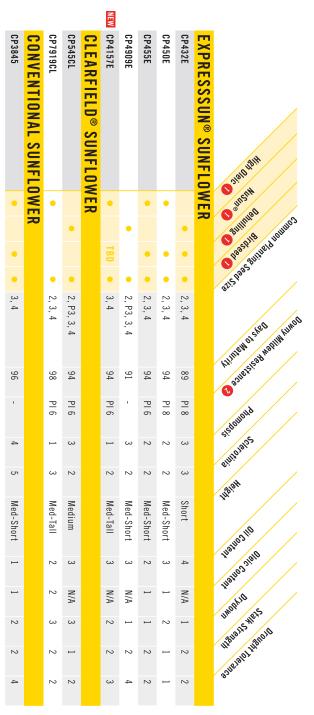


- High yield potential, oil and oleic levels
- Above-average disease tolerance
- DMR PI 6; resistant to most common U.S. races of downy mildew
- Full maturity; plant early when utilizing north of I-94 in Minnesota, North Dakota and Montana



- Very high yield potential with best performance in offensive environments
 Excellent Phomopsis tolerance

- Good roots and stalks on a medium-tall stature provide solid late-season standability
 DMR PI 6; resistant to most common U.S. races of downy mildew



KEY Scale 1 = Excellent

- 2 = Strong

trials and/or from the genetics Product descriptions and ratings are generated from Answer Plot®

- 3 = Acceptable
- 4 = Manage 5 = Not Recommended

additional data is gathered. supplier and may change as

Market Options Grain not guaranteed to be sold in your area.

not guarantee oleic levels. Due to factors outside our control, WinField United does

TBD = still in testing.

Downy Mildew Resistance

PI 2 gene = This gene is resistant to some of the to most of the common races found today. early races of downy mildew, but it is susceptible

314, 704, 714, 734 and 774. PI 6 gene = This gene is resistant to races prevalent before 2009; it is susceptible to races

> stops downy mildew from advancing or having an PI 8 gene = This gene can get infected, but then economic impact on all common races.

> > PI P gene = Proprietary gene developed to control all known races of downy mildew.

downy mildew. hybrids and is resistant to all known races of PI 15 gene = This gene is exclusive to CROPLAN®



Product Name	
Attributes	
Placement	
Product Name	
Attributes	
Placement	
Product Name	
Attributes	
Placement	
Product Name	
Attributes	
Placement	



HARD RED SPRING WHEAT

Managing for high performance leads to optimal results.

Our CROPLAN® seed spring wheat varieties have demonstrated phenomenal performance nationally. We can help you select the right genetics to manage a strong wheat crop. According to the most recent Answer Plot® data, spring wheat varieties respond differently to various management techniques, so be sure to manage the varieties you plant appropriately. What's more, targeted input applications support responsible land use by eliminating unnecessary treatments.

Starting with high-performing varieties, we help you bring it all together to make for a great ending to your season.

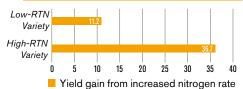
KEY TAKEAWAYS

- 1 Top-dress nitrogen on responsive genetics for added potential.
- 2 Plant at the right population for optimal varietal performance.
- 3 Know how to manage your variety to best enable its response-to-fungicide (RTF) score.

MANAGE YOUR VARIETY'S RESPONSE-TO-NITROGEN (RTN) SCORE¹

Customize nitrogen rate by variety to capture ROI potential. Optimize yield potential on more productive acres with higher nitrogen management by planting varieties with higher RTN scores. Protect yield potential on tougher acres by utilizing lower RTN score varieties on acres with lower-productivity soils or less nitrogen management.

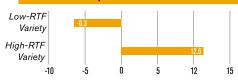
► RTN Yield Response Variance — 25.5 bu/A



USE RESPONSE-TO-FUNGICIDE (RTF) SCORES TO AID DECISION-MAKING¹

Fungicides are another tool to help you optimize the yield potential of your wheat crop. RTF scores help you understand where fungicides may increase yield potential and protect ROI potential.

▶ RTF Yield Response Variance — 18.9 bu/A



Yield gain from increased fungicide use

OPTIMIZE SEEDING RATE BY VARIETY¹

Each CROPLAN® variety has its own response to population (RTP). Managing population correctly will help you optimize yield potential and help increase standability. Use seed size when determining optimal seeding rates. For more uniform emergence, use Warden® Cereals seed treatments plus Ascend® plant growth regulators.

► RTP Yield Response Variance — 10.9 bu/A Low-RTP Variety High-RTP Variety 6.1

Yield gain from increased seeding rate

SEEDING RATE CHART²

Example of how to use the chart:

1. Select total planting seed.

Example: 1.4 million seeds per acre

2. Select seeds per pound. Example: 13,000

3. Determine recommended seeding rate. Example: 108 lbs. per acre Calculation assumptions:

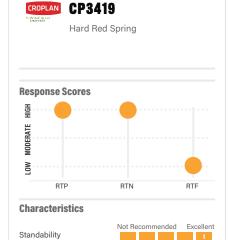
Germ: 95% Survivability: 10% Total stand loss: 15%

- MILLION SEEDS PER ACRE
- PLANTS PER ACRE
- O PLANTS PER SQUARE FOOT

	SEED SIZE: SEEDS PER POUND ———											
POAL PLANTING SEED												
PLANT	IRE INESEED						FIN.	CLANTS/SQFT				
WG SE	CIVE SE		\ .	72	\	\ .	AISTAL	7550.				
E	2 ED	11.6	200 12.00	13.00	14.00	70 15.00	FINAL STAND		2			
	0.8	0.8	73	67	62	57	53	0.7	15.6			
	1.0	1.0	91	83	77	71	67	0.9	19.5			
	1.2	1.1	109	100	92	86	80	1.0	23.4			
	1.4	1.3	127	117	108	100	93	1.2	27.3			
	1.6	1.5	145	133	123	114	107	1.4	31.2			
	1.8	1.7	164	150	138	129	120	1.5	35.1			
	2.0	1.9	182	167	154	143	133	1.7	39.0			
	2.2	2.1	200	183	169	157	147	1.9	42.9			
				SEED	ING RATE	(LBS/A)						

- 1. Response ranges show the importance of how varieties respond to each management practice to help ensure the highest yield potential. 2019 nationwide Answer Plot® data.
- 2. Because of factors outside of WinField United's control, such as weather, product application and any other factors, results to be obtained, including but not limited to yields, financial performance or profits, cannot be predicted or guaranteed by WinField United.





· Outstanding yield potential under highmanagement and irrigated acres

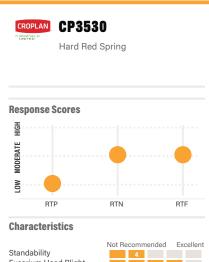
• Excellent standability allows for increased

Fusarium Head Blight

Test Weight

Protein

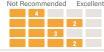
- nitrogen to maintain protein
- Solid disease package; best stripe rust tolerance in CROPLAN® lineup
- Later heading but finishes fast; head ripens faster than plant



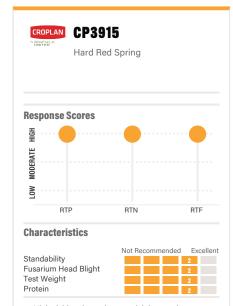
Fusarium Head Blight Test Weight Protein

1

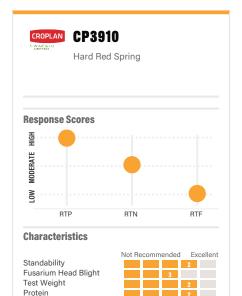
2

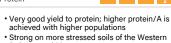


- · Excellent yield potential and strong protein
- · Performs best at low-to-medium populations and split-application nitrogen management
- Strong fusarium head blight and leaf disease tolerance; acceptable bacterial blight tolerance
- · Utilize moderate to low populations on highly productive soils



- High yield and protein potential that can increase with additional N
- Excellent agronomics, very good BLS tolerance and straw strength
- Excels under higher yield environments; stable in lower yielding environments
- High response to population, recommended @ 1.4-1.7 M seeds/acre





- Dakotas and Montana
- Earliest wheat product in lineup with shorter plant type for good harvestability and less trash
- Very good stem rust, but BLS can impact yields





- · Extremely high yield potential with acceptable protein rating
- Strong disease package on a very large plant; extremely large flag leaf
- High response to increased nitrogen; great candidate for split-applications; very strong standability



- Awnless genetics, unique background to the industry
- Extremely high yield potential among the highest yielding products in 2020 Answer Plot testing
- Lower protein but additional nitrogen, increases both yield and total protein/a
- Excellent forage/dual-purpose potential as silage or dry hay



Scale 1 = Excellent

2 = Strong 3 = Acceptable

4 = Manage 5 = Not Recommended

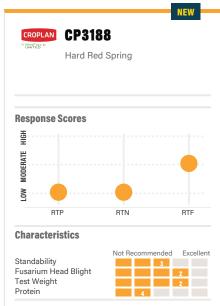
CROPLAN CP3119A Hard Red Spring **Response Scores** MODERATE TOW RTP RTN RTF **Characteristics** Not Recommended Excellent Standability

- Full-season awnless product with very high yield potential
- Very large, healthy plant; good standability and large flag leaf to drive grain fill
 High yield potential; lower-protein can be improved with N management

Fusarium Head Blight Test Weight

Protein

• Extended-season wheat with longer grain-fill gives higher yield potential



- Out-yielded all commercial checks in 2020 Answer Plot® testing
- Excellent performance on tough acres (lower OM,
- Low response to population; seeding at 1.3M or below can help maintain yield and protect standability
- Low response to nitrogen drives stability across environments

NEW C	NEW CI	C	C	C	C	C	ر ای	_ <
P3188	CP3119A	CP3099A	CP3055	CP3910	P3915	P3530	P3419	ARIETY
								SSB13 REBUM
Hard Red								
								sinternatived
5	62	61	61	54	55	57	58	illier
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_	2	2	ω	5	_	ω	5	The Piet French
N/A	N/A	N/A	N/A	N/A	ω	N/A	N/A	Pr.

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KEY Scale
1 = Excellent
2 = Strong
3 = Acceptable

4 = Manage5 = Not Recommended

RTP/RTN/RTF Ratings

L = Low Response
M = Moderate Response
H = High Response

2 Height
S = Short
M = Medium
T = Tall

The comparison ratings are with CROPLAN® wheals only. These ratings reflect trends observed in research trials, which will change based on various factors, including variations in rainfall, temperature and production patterns.



Product Name	
Attributes	
Placement	
Draduct Name	
Product Name	
Attributes	
Placement	
Duaduat Nama	
Product Name	
Attributes	
Placement	
Product Name	
Attributes	
Placement	



HARD 1 of 2 RED WINTER WHEAT

Built tough to handle whatever comes your way.

Growing hard red winter wheat is not for the faint of heart. Good thing the varieties offered by CROPLAN® seed are built to handle the rugged conditions found in the Central Plains Wheat Belt. As an innovator with a 20-year history in this space, you can count on CROPLAN® seed as the solid constant in an often-chaotic hard red winter wheat marketplace. We're credible. We're innovative. And the quality of our seed performance is backed by solid data.

KEY TAKEAWAYS

- New CoAXium® varieties provide an innovative and comprehensive solution for controlling tough grassy weeds.
- **2** Apply nitrogen strategically throughout the season.
- 3 Plant at the right population for optimal varietal performance.
- 4 Know your variety's response-tofungicide score and manage that variety accordingly.

REVOLUTIONARY GRASSY WEED CONTROL

CROPLAN® seed is pleased to offer two CoAXium® varieties. Created by wheat farmers for wheat farmers, the CoAXium® Wheat Production System provides costeffective, excellent control of annual and perennial grasses, higher quality grain, and increased yield potential.

This system combines elite wheat varieties, the AXigen® trait and Aggressor® herbicide with an industry-wide stewardship program. AXigen® is an ACCase herbicide-tolerant trait that protects wheat varieties from Aggressor® herbicide, which delivers effective, consistent, broad-spectrum control of problem grasses.





A WINNING EQUATION

ELITE VARIETIES

PATENTED HERBICIDE-TOLERANT TRAIT

NEW HERBICIDE

STEWARDSHIP PROGRAM

A REVOLUTIONARY SYSTEM

SMART SOLUTION FOR THE TOUGHEST WEEDS

When used in conjunction with CoAXium® varieties, Aggressor® herbicide is a valuable new tool for consistent control of tough weeds in wheat—including ALS-resistant biotypes. Aggressor® provides systemic and selective broad-spectrum control of these problem grasses:

- Bromus species, including ALS-resistant biotypes
- Feral and cereal rye
- Jointed goatgrass, including ALS-resistant biotypes
- Wild oats
- Volunteer cereals

TECHNOLOGY WORTH PRESERVING

To ensure the success of the system, farmers are required to adhere to the CoAXium® Wheat Production System Grower Stewardship Agreement, which outlines policies on product rates, crop rotation best practices and product use limitations over time. Policies include:

- Do not use the CoAXium® Wheat Production System more than two years in a row, and rotate with Group 2 or Group 15 herbicide modes of action in annual crop winter wheat.
- Rotate herbicide modes of action between crop cycles, especially between Glyphosate, Group 1 and Group 2 herbicides.
- Herbicide-tolerance traits in cereals are not cross tolerant, so good farm management and record keeping is required.
- Do not allow grassy weed escapes to go to seed.
- The use of Certified Seed is required.

FOLLOW THESE MANAGEMENT PRACTICES

- Aggressor® herbicide is the only legal and registered Group 1 ACCase inhibitor for use in CoAXium® wheat.
 - » Do not use Clethodim herbicide on CoAXium® wheat.
- 2. Group 1 modes of action benefit from:
 - » Good spray coverage: Spray with minimum 15gpa carrier with medium droplet size to get deep coverage on tough to cover grass. Delivering more droplets in the ideal droplet diameter spectrum.
 - » Oil adjuvants: 0.5gal Superb® HC/100gal water OR 0.5gal Destiny® HC/100gal water OR 0.5gal StrikeLock®/100gal water
 - » Deposition: 2 to 4oz InterLock®/Acre OR 6.4oz MasterLock®/Acre
- 3. To avoid possible crop injury, do not apply Aggressor® to CoAXium® Wheat Production System and varieties with the AXigen® trait when extreme cold temperatures (less than 40° F maximum daytime temperature) are expected within 1 week of application.
- 4. Do not tank-mix MCPA amine, 2,4-D amine or Metribuzin with Aggressor® herbicide.
- Make sure that the broadleaf herbicides are approved to be used with MSO or COC's.





MANAGE YOUR VARIETY'S RESPONSE-TO-NITROGEN (RTN) SCORE

Customize nitrogen rate by variety to capture ROI potential. Optimize yield potential on more productive acres with higher nitrogen management by planting varieties with higher RTN scores. Protect yield potential on tougher acres by utilizing lower RTN score varieties on acres with lower-productivity soils or less nitrogen management.

USE RESPONSE-TO-FUNGICIDE (RTF) SCORES TO AID DECISION-MAKING

Fungicides are another tool to help you optimize the yield potential of your wheat crop. RTF scores help you understand where fungicides may increase yield potential and protect ROI potential.

OPTIMIZE SEEDING RATE BY VARIETY

Each CROPLAN® variety has its own response to population (RTP). Managing that correctly will help you optimize yield potential and help increase standability. Use seed size when determining optimal seeding rates. For more uniform emergence, use Warden® Cereals seed treatments.

SEEDING RATE CHART¹

Example of how to use the chart:

- 1. Select total planting seed.

 Example: 1.4 million seeds per acre
- 2. Select seeds per pound. *Example: 13,000*
- 3. Determine recommended seeding rate. Example: 108 lbs. per acre

Calculation assumptions: Germ: 95%

- Germ: 95% Survivability: 10% Total stand loss: 15%
- MILLION SEEDS PER ACRE
- **9 PLANTS PER ACRE**
- **O PLANTS PER SQUARE FOOT**

SEED SIZE: SEEDS PER POUND											
TOTAL PLANTING SEED											
PLANTI	RELL						FINA	CAN.			
MESTER	RE INESEED	1.	12	13.	10	10	FINAL STAND	CLANTS SQFT			
·Ø		11.6	200 4.0	13.00	7 18.0	15,00	20	9	2		
	0.8	0.8	73	67	62	57	53	0.7	15.6		
	1.0	1.0	91	83	77	71	67	0.9	19.5		
	1.2	1.1	109	100	92	86	80	1.0	23.4		
	1.4	1.3	127	117	108	100	93	1.2	27.3		
	1.6	1.5	145	133	123	114	107	1.4	31.2		
	1.8	1.7	164	150	138	129	120	1.5	35.1		
	2.0	1.9	182	167	154	143	133	1.7	39.0		
	2.2	2.1	200	183	169	157	147	1.9	42.9		

SEEDING RATE (LBS/A)

RESION 18

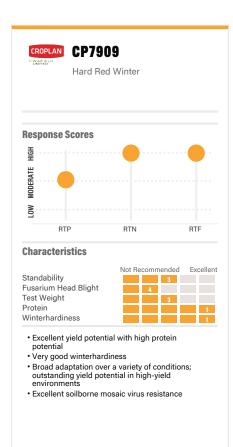
RESION 11

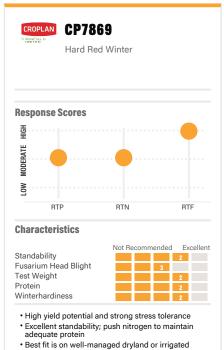
RESION 12

RESION 13

1. Because of factors outside of WinField United's control, such as weather, product application and any other factors, results to be obtained, including but not limited to yields, financial performance or profits, cannot be predicted or guaranteed by WinField United.





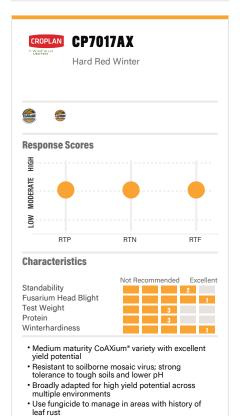


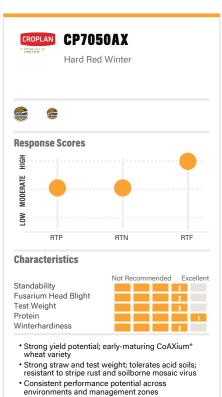
Acceptable fusarium head blight tolerance; excellent stripe, stem and leaf rust tolerance

acres



- performance on dryland and irrigated acres
 Versatile product with excellent test weight and strong standability
- · Broadly adapted for usage from Kansas to Central
- Manage for mosaic and stripe rust; acceptable Hessian Fly rating





Fungicide recommended in areas with stem rust

- 1 = Excellent
- 2 = Strong
- 3 = Acceptable 4 = Manage
- 5 = Not Recommended



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KEY Scale
1 = Excellent
2 = Strong
3 = Acceptable 4 = Manage

5 = Not Recommended

Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered.

Maturity
 1 = Early
 5 = Late

2 Height
S = Short
M = Medium
T = Tall

3 RTP/RTN/RTF Ratings

L = Low ResponseM = Moderate ResponseH = High Response

The comparison ratings are with CROPLAN® wheats only. These ratings reflect trends observed in research trials, which will change based on various factors, including variations in rainfall, temperature and production patterns.



Product Name	
Attributes	
Placement	
Product Name	
Attributes	
Placement	
Product Name	
Attributes	
Placement	
Product Name	
Attributes	
Placement	



SOFT RED WINTER WHEAT

You don't get better yield by hoping for it.

If you grow soft red winter wheat, you know it's all about yield potential. At CROPLAN® seed, we have the Answer Plot® data to back up the performance of our soft red winter wheat varieties — disease-resistant racehorse varieties you can count on.

Each CROPLAN® soft red winter wheat variety has a response-to score, so you can choose the seed that'll help you achieve your yield goals. We're a legacy brand in the industry for notable soft red winter wheat performance. Let us help you reach your potential.

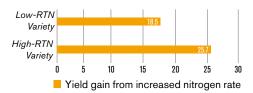
KEY TAKEAWAYS

- 1 Top-dress nitrogen on responsive genetics for added potential.
- 2 Plant at the right population for optimal varietal performance.
- 3 Know your variety's response-tofungicide score and manage that variety accordingly.

MANAGE YOUR VARIETY'S RESPONSE-TO-NITROGEN (RTN) SCORE'

Customize nitrogen rate by variety to capture ROI potential. Optimize yield potential on more productive acres with higher nitrogen management by planting varieties with higher RTN scores. Protect yield potential on tougher acres by utilizing lower RTN score varieties on acres with lower-productivity soils or less nitrogen management.

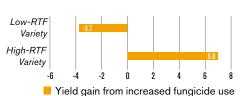
▶ RTN Yield Response Variance — 7.2 bu/A



USE RESPONSE-TO-FUNGICIDE (RTF) SCORES TO AID DECISION-MAKING¹

Fungicides are another tool to help you optimize the yield potential of your wheat crop. RTF scores help you understand where fungicides may increase yield potential and protect ROI potential.

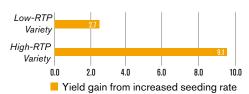
▶ RTF Yield Response Variance — 10.5 bu/A



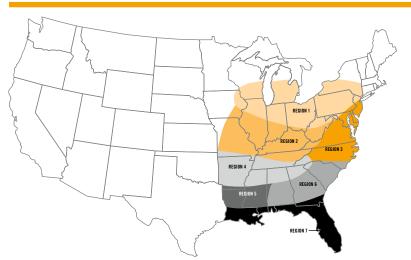
OPTIMIZE SEEDING RATE BY VARIETY¹

Each CROPLAN® variety has its own response to population (RTP). Managing that correctly will help you optimize yield potential and help increase standability. Use seed size when determining optimal seeding rates. For more uniform emergence, use Warden® Cereals seed treatments.

▶ RTP Yield Response Variance — 6.4 bu/A



SEEDING RATE CHART² SEED SIZE: SEEDS PER POUND PORI PLANTING SEED Example of how to use the chart: PIRE LIVE SEED 1. Select total planting seed. Example: 1.4 million seeds per acre 2. Select seeds per pound. Example: 13.000 3. Determine recommended seeding rate. 0.8 73 67 62 57 53 15.6 Example: 108 lbs. per acre 1.0 1.0 91 83 77 71 67 0.9 19.5 Calculation assumptions: 1.1 109 100 92 80 1.0 23.4 1.2 Germ: 95% 1.4 1.3 127 117 108 100 93 1.2 27.3 Survivability: 10% 114 107 31.2 145 133 123 1.4 1.6 1.5 Total stand loss: 15% 1.8 1.7 164 150 138 129 120 1.5 35.1 2.0 1.9 182 167 154 143 133 1.7 39.0 MILLION SEEDS PER ACRE 42.9 PLANTS PER ACRE O PLANTS PER SQUARE FOOT SEEDING RATE (LBS/A)



- 1. Response ranges show the importance of how varieties respond to each management practice to help ensure the highest yield potential. 2019 nationwide Answer Plot® data.
- 2. Because of factors outside of WinField United's control, such as weather, product application and any other factors, results to be obtained, including but not limited to yields, financial performance or profits, cannot be predicted or guaranteed by WinField United.

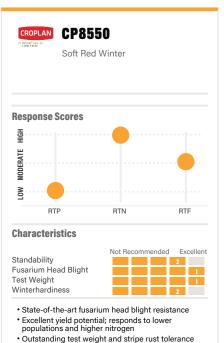




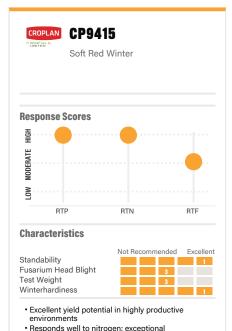
 Native tolerance to fusarium head blight; good broad-spectrum disease-resistance package

· Excellent stripe rust resistance and standability

· Responds well to increased population



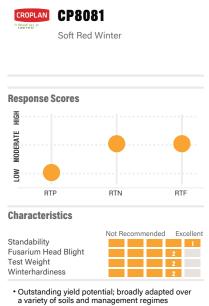
• Tall variety has good straw yield potential, but is

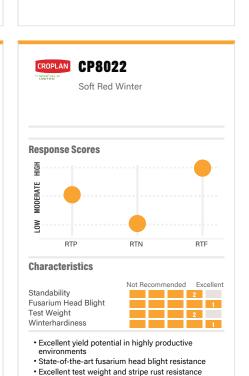


• Strong disease-tolerance package

• Medium height; fits well in double-crop system

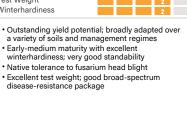






· Plant on time to encourage tilling

- High yield potential and excellent test weight
- Broad adaptation over a variety of soils and management regimes
- Native tolerance to fusarium head blight
- Smooth head and height make it a good straw choice



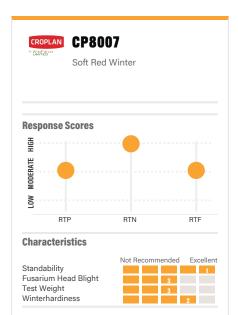
Scale

1 = Excellent
2 = Strong

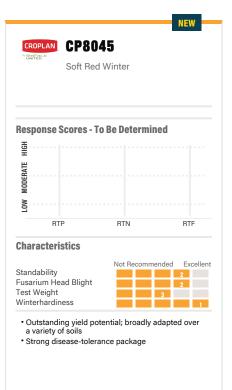
2 = Strong 3 = Acceptable

4 = Manage

5 = Not Recommended



- Outstanding yield potential
- Very stiff and short straw that can handle high Nrates
- Strong test weight
- Best performance in northern regions





NEW CP8081 NEW CP8022	CP8081	6F32U3	00000	CP9415	CP8550	CP9606	VARIETY
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KEY Scale
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RTP/RTN/RTF Ratings

L = Low ResponseM = Moderate ResponseH = High Response

The comparison ratings are with CROPLAN® wheats only. These ratings reflect trends observed in research trials, which will change based on various factors, including variations in rainfall, temperature and production patterns.



Product Name	
Attributes	
Placement	
Product Name	
Attributes	
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Warden CX By WINFIELD

WARDEN* CX SEED TREATMENT HELPS PROTECT YIELD POTENTIAL FROM THE START

Warden® CX insecticide-fungicide seed treatment is designed to protect high-value seed from yield-robbing seedling disease and insect pests. Containing three fungicides for multiple modes of action, Warden® CX seed treatment can help provide optimal protection against Fusarium, Rhizoctonia, Phytophthora and Pythium. With Cruiser® insecticide for unmatched defense against seed and foliar-feeding insects, Warden® CX seed treatment is the first step toward high yield and profit potential.

EARLY-SEASON ADVANTAGES

Warden® CX seed treatment features the following crop protection advantages over untreated seed:

- Increases plant stands, promotes quick canopy closure and can improve yield potential.
- Helps improve root health and provides industry-leading Rhizoctonia protection.
- Contains sedaxane, the first fungicide developed exclusively for use as a seed treatment.
- Warden® CX includes one of the highest available rates of Apron XL® fungicide available in the industry. This allows for extended *Phytophthora* control in tough growing conditions.

ADDITIONAL ADVANTAGES

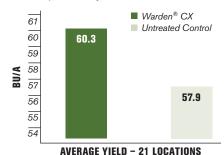
- Incorporates the active ingredient from Cruiser* insecticide, an industry standard for seed-applied insect protection, delivering the patented vigor effect (U.S. Patent number 6,753,296).
- Improves seed handling and flowability.

OUTSTANDING DISEASE PROTECTION

Warden® CX seed treatment contains sedaxane, a fungicide designed exclusively as a seed treatment. Creating strong, healthy root systems, it also provides *Rhizoctonia* protection. Warden® CX seed treatment has a high rate of mefenoxam, providing *Pythium* and *Phytophthora* seed and young seedling protection.

WARDEN* CX SEED TREATMENT HAS BEEN SHOWN TO IMPROVE PLANT STANDS, REGARDLESS OF PLANTING DATE¹

Data from these trials showed that Warden® CX is a premier soybean seed treatment.



Source: 21 locations across key soybean-growing states; trials conducted with independent contract

1. Because of factors outside of WinField United's control, such as weather, product application and any other factors, results to be obtained, including but not limited to yields, financial performance or profits, cannot be predicted or guaranteed by WinField United

DISEASES AND INSECTS CONTROLLED

Warden® CX seed treatment is designed to control a broad spectrum of destructive diseases, including the following:

DAMPING-OFF AND SEED ROTS

- Fusarium
- Pythium
- Phytophthora
- · Rhizoctonia

ROOT ROT

- · Phomopsis*
- · Sclerotinia'
- Phytophthora
- *Suppression only.

Warden® CX seed treatment is also designed to control a wide variety of destructive insects, including the following:

- Aphids
- · Bean leaf beetles
- · Grape colaspis
- Leafhoppers
- · Leaf miners
- · Mexican bean beetles
- · Seedcorn maggots
- · Threecornered alfalfa hoppers
- Thrips
- White grubs
- Wireworms

PAIR WARDEN® CX WITH AN INOCULANT

Help meet the nitrogen needs of soybean crops by adding a microbial inoculant. These symbiotic rhizobia bacteria fix atmospheric nitrogen, improving modulation and boosting plant-available nitrogen.





Fortivent[®] Plus

By WINFIELD UNITED

EARLY-SEASON INSECT AND DISEASE CONTROL WITH OPTIMIZED PLANT VIGOR

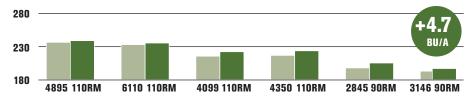
Fortivent® Plus seed treatment combines the early-season insect control of Poncho® VOTiVO® seed treatment, INTEGO® Solo fungicide for enhanced *Pythium* control and Fortivent Zn for early-season corn vigor. The Poncho® insecticide at a rate of 500 mg active ingredient combined with the nematode control of VOTiVO® seed treatment is designed to help control insects, while Fortivent Zn aids in early corn development, including stand establishment and enhanced yield potential.

► Fortivent® Plus Features and Benefits

- All CROPLAN[®] Signature hybrids come with Poncho[®] VOTiVO[®] seed treatment
- Provides enhanced Pythium control with INTEGO® Solo fungicide
- Includes Fortivent Zn for success in early-season growth and root development
- Includes 100% replant offering on all CROPLAN® Signature hybrids

YIELD ADVANTAGE

► Fortivent Zn - 2018 Answer Plot® Testing



Active Ingredients*	Rates		
Insecticide			
Clothianidin	500		
*Clothianidin	1,250		
Base Fungicides (Acceleron® Seed Treatment)			
Fluoxastrobin	0.24 fl. oz./100 lbs. of seed		
Prothioconazole	0.24 fl. oz./100 lbs. of seed		
Metalaxyl	0.10 fl. oz./100 lbs. of seed		
Ethaboxam (INTEGO® Solo)	0.20 fl. oz./100 lbs. of seed		
Nematicide			
Poncho® VOTiVO® - 500	2.7 fl. oz./80,000 seeds		

*Always read and follow label instructions.



Untreated

Fortivent Zn

TECHNOLOGY



INNOVATIVE TECHNOLOGY

Traits include SmartStax® corn technology with a broad spectrum of control for above- and belowground insects, along with herbicide tolerance. DroughtGard® Hybrids are available with risk-management benefits for corn hybrids facing drought stress.

CORN TRAITS

- Farmers choose their level of insect protection field by field.
- SmartStax® RIB Complete® corn blend offers a broad spectrum of above- and belowground insect protection with the simplicity and convenience of a singlebag refuge solution. Two modes of action against corn earworm and corn rootworm help optimize yield potential.
- As the first double-stacked corn trait
 with two ways to help control ear-feeding
 insects, VT Double PRO® corn delivers
 a broad spectrum of protection against
 above-ground pests, including European
 corn borer, southwestern corn borer, fall
 armyworm and corn earworm.
- DroughtGard® Hybrids provide farmers with a valuable tool for managing waterdeficit risks.

SmartStax® technology helps protect corn against ear-feeding insects.





SMARTSTAX® RIB COMPLETE® CORN BLEND

- It includes a 5% structured refuge, the lowest in the corn-growing area.
- Roundup Ready® 2 Technology and LibertyLink® herbicide tolerance provide weed control.
- This corn trait platform is achieved through best-in-class trait integration to help provide the highest level of whole-farm success.

► Aboveground Control

SmartStax® technology controls aboveground insects by uniting *Bacillus thuringiensis* (B.t.) proteins with multiple modes of action from VT Triple PRO® and Herculex®. It stops stalk-feeding insects, such as corn borers, and protects against ear-feeding insects, including western bean cutworm, corn earworm and black cutworm. This protection has the potential to help improve grain quality.

► Belowground Control

Belowground, SmartStax® technology combines high-performing VT Triple PRO® trait protection with complementary Herculex® XTRA rootworm protection. This unique combination of B.t. technologies provides season-long control of corn rootworm, a primary pest.

► Roundup Ready® 2 Technology and LibertyLink® Traits Together

In addition to above- and belowground insect control traits, SmartStax® products include standard-setting weed control — the Roundup Ready® 2 Technology and LibertyLink® systems — for unprecedented weed management.

▶ The First Single-Bag Refuge Solution

SmartStax® RIB Complete® corn blend products are a single-bag refuge solution for farmers — the first of its kind on the market. With SmartStax® RIB Complete® corn blend, the refuge seed is distributed in the bag along with seeds containing the SmartStax® trait, allowing farmers to plant an entire field with just one product. Farmers in corn-growing areas will no longer need to plant a separate, structured refuge when they use SmartStax® RIB Complete® corn blend.





► SmartStax® RIB Complete® Corn Blend Benefits

- Controls key above- and belowground insects
- Provides optimal yield protection with two ways to control corn rootworm and corn earworm.
- Includes a blend of 95% traited and 5% refuge seed with no separate, structured refuge required in the corn-growing area.
- Offers a truly simple refuge-in-a-bag solution — just fill your planter and go.

Bringing New Germplasm to Market Faster

SmartStax® RIB Complete® corn blend products are developed using best-in-class trait integration that can bypass traditional slower breeding processes. This allows seed brands to bring new germplasm to market sooner. With all-in-one protection, seed brands will now be able to better evaluate each product's true performance in the field.



VT DOUBLE PRO® RIB COMPLETE® CORN BLEND

VT Double PRO® RIB Complete® corn blend allows you to plant the most traited acres fencerow to fencerow with the simplicity of a single-bag solution. There's no need to calculate or plant a separate structured refuge ever again. VT Double PRO® RIB Complete® corn includes 95% traited seed and 5% refuge seed. You get all the benefits of the VT Double PRO® trait plus the convenience of 5% refuge seed interspersed in every bag.

► VT Double PRO® RIB Complete® Corn Blend Benefits

- Optimal yield protection with two ways to control corn earworm.
- A blend of 95% traited and 5% refuge seed with no separate, structured refuge required in corn-growing areas.
- The truly simple refuge-in-a-bag solution just fill your planter and go.





THE TRULY SIMPLE REFUGE-IN-A-BAG SOLUTION

RIB Complete® is a single-bag refuge solution for farmers. With RIB Complete® corn blend, the refuge seed is distributed in the bag along with seeds containing B.t. traits, allowing farmers to plant an entire field with just one product. Farmers in the Corn Belt will no longer need to plant a structured refuge when they use RIB Complete® corn blend products.







20% refuge 5% refuge

5% refuge in the bag



UNLOCK MORE PROFITABILITY POTENTIAL

Built on the high-yielding Roundup Ready 2 Xtend® technology, XtendFlex® soybeans offer proven performance potential and herbicide tolerance to dicamba, glyphosate and glufosinate. These three modes of action give farmers control over 337 weeds¹ and up to 14 days of soil activity on certain small-seeded broadleaf weeds from XtendiMax® herbicide and VaporGrip® Technology, a restricted use pesticide.²

XtendFlex® soybean varieties are bred with the latest genetics to improve yield potential. Herbicide application flexibility and outstanding agronomic benefits give farmers more opportunity to improve their bottom line.



AN EASY FIT FOR YOUR OPERATION

Enlist E3® soybeans offer the most advanced trait technology available in soybeans, providing a new standard for weed control and yield performance. Farmers gain access to more herbicides featuring effective sites of action for better weed control.

Enlist E3® soybeans offer resistance to 2,4-D choline, glyphosate and glufosinate and have no plant-back restrictions after using an Enlist™ herbicide for burndown. Enlist E3® soybeans are compatible with nearby crops, such as soybeans without the Enlist™ trait, alfalfa, corn, peanuts, sorghum, rice and wheat. Farmers can apply Enlist™ herbicides on Enlist E3® soybeans planted right next to these compatible crops with no wind directional restrictions.

This technology gives farmers the confidence to take down tough weeds such as Palmer amaranth, common and giant ragweed, waterhemp, and marestail, along with other tough-to-control broadleaf weeds such as lambsquarters and velvetleaf.



DROUGHTGARD® HYBRIDS

DroughtGard® Hybrids are part of a system to help farmers manage risk by mitigating yield loss due to drought. The system offers farmers improved genetics, agronomic practice recommendations and the drought-tolerant biotech trait. DroughtGard® Hybrids can help increase hydroefficiency under drought stress, which can result in increased kernel numbers and reduced frequency of barren plants, providing the opportunity to reduce yield loss in certain drought conditions. DroughtGard® Hybrids are available for sale in all states.

► Traits Available With DroughtGard® Hybrids

DroughtGard® Hybrids will be available with the following corn traits: VT Double PRO® corn, VT Double PRO® RIB Complete® corn blend and Roundup Ready® Corn 2.

► Advantages of DroughtGard® Hybrids

- In drought-stress conditions that caused damaging yield losses, comparisons demonstrated a 5-bushel-per-acre performance advantage with DroughtGard® Hybrids over commercially available competitive check products.³
- Ongoing research indicates that products with the drought-tolerant biotech trait have had more kernels per ear and can use less water during severe drought stress.

 DroughtGard® Hybrids have the potential to maintain top-end yield in well-watered conditions and provide a valuable tool for managing water-deficit risks.



ROUNDUP READY® CORN 2 SYSTEM

Whether you follow a pre- and postemergence spray program or only spray postemergence, Roundup Ready® Corn 2 will fit your system. Designed to work with Roundup® agricultural herbicides, the Roundup Ready® Corn 2 System provides outstanding yield potential without the crop injury other postemergence herbicides can cause.



ROUNDUP READY 2 XTEND® SOYBEANS

Built on high-yielding Roundup Ready 2 Yield® soybean technology, Roundup Ready 2 Xtend® soybeans contain the industry's first biotech-stacked soybean trait with both dicamba and glyphosate herbicide tolerance.

This tolerance gives farmers access to additional tools to help control glyphosate-resistant broadleaf weeds such as Palmer amaranth, waterhemp and marestail, along with other tough-to-control broadleaf weeds such as lambsquarters and velvetleaf.

This technology offers the yield and quality potential that farmers already know and trust from Roundup Ready 2 Yield® soybeans.

- 1. Based on approved EPA herbicide labels for the herbicides recommended for use in each system as of 10/28/2020.
- Results may vary, depending on rain fall and soil type. Always use dicamba with residual herbicides in pre-emergence and post-emergence applications that have different, effective sites of action, along with other Diversified Weed Management Practices.
- 3. 2012 Monsanto GroundBreaker plot trial based on approximately 250 growers in the western Great Plains.







ROUNDUP READY 2 YIELD® SOYBEANS

With more three-, four- and five-bean pods, Roundup Ready 2 Yield® soybeans offer a proven yield advantage over the competition. With more beans per pod and more bushels per acre, Roundup Ready 2 Yield® soybeans also provide more profit potential.

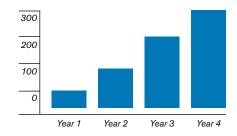
Research demonstrates a significant yield increase with Roundup Ready 2 Yield® soybeans over Roundup Ready® soybeans, with the same simple, dependable weed control as the Roundup Ready® Soybean System.¹

▶ Powerful Performance

Roundup Ready 2 Yield® soybeans contain in-plant tolerance to Roundup® agricultural herbicides, allowing farmers to spray Roundup® agricultural herbicides on crops from emergence through flowering.

The occurrence of more three-, four- and five-bean pods per plant is contributing to the increased yields seen with Roundup Ready 2 Yield* soybeans. These soybeans have demonstrated a clear yield advantage opportunity over the competition by delivering an average of 4.5 bushels per acre more than original Roundup Ready* soybeans.

CUMULATIVE NUMBER OF ROUNDUP READY 2 YIELD® VARIETIES



1. Roundup Ready 2 Yield® soybeans yield higher than Roundup Ready® soybeans, based on 73 Monsanto field trials (17 to 20 per year) from 2004 to 2007. The four-year average percentage increase for Roundup Ready 2 Yield® equals 8.63, with a 95% confidence interval of 6.8% to 10.5% advantage from Roundup Ready 2 Yield®.

2. Data as of October 29, 2012. Includes all breeding and commercial strip trial data. All head-to-head comparisons are within a +/-0.4 day maturity. Data represents the top-performing Roundup Ready 2 Yield® products (with a minimum of 30 comparisons per product) versus competitive Pioneer® and NK® brands with Roundup Ready® by state.

ACCELERON® PROMOTES STRONG EARLY-SEASON GROWTH



ACCELERON® SEED APPLIED SOLUTIONS FOR CORN

Acceleron® Seed Applied Solutions help corn seedlings emerge strong by providing superior protection against seed and seedling diseases as well as early-season insects and pests. With protection from Acceleron® Seed Applied Solutions at planting, high-yielding seed develop more uniform, vigorous plant stands for high yield potential.

▶ Insect and Disease Protection for Corn

Insect Protection: Protection from early-season pests such as wireworms, seedcorn maggots, white grubs, grape colaspis and black cutworms (suppression).

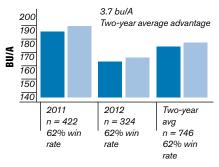
Disease-Fighting Protection: Excellent control of soilborne and seedborne disease, including *Fusarium*, *Rhizoctonia* and *Pythium*.

► Poncho®/VOTiVO® for Corn, Soybeans and Cotton

Acceleron® Seed Applied Solutions paired with Poncho®/VOTiVO® helps protect against seed and seedling diseases and early-season pests.

- For corn: Offers a unique biological mode of action for nematode management.
 Protects against damage from a range of nematode species and early-season insects, from planting through early development.
- For soybeans: Can provide the maximum level of protection against seed and seedling diseases; early-season insects; and nematodes including soybean cyst, reniform and root-knot.
- For cotton: Controls early-season insects such as thrips and aphids, and also protects against damage from nematodes including reniform and root-knot.

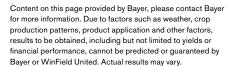
► Two-Year Performance



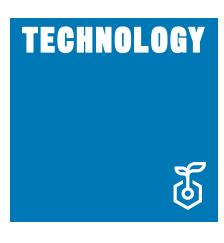
Acceleron® Seed
Applied Solutions
for corn

Acceleron® Seed Applied Solutions for corn with Poncho®/VOTiVO®

Source: 2011 and 2012 Internal Monsanto Commercial Field Trials. Individual results may vary.







ECONOMICAL, CONSISTENT HERCULEX® YIELD PROTECTION

Herculex® Insect Protection technology helps top-performing hybrids achieve their highest performance potential.



HERCULEX® XTRA

Herculex® XTRA Insect Protection

combines Herculex® I Insect Protection and Herculex® RW Rootworm Protection for powerful protection above- and belowground. It enables top-performing hybrids to reach their optimal yield potential by combining high-yielding genetics with consistent, season-long control of European corn borer, corn rootworm and black cutworm.

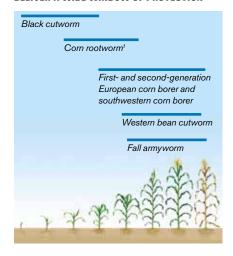
Herculex® XTRA is stacked with LibertyLink® technology, offering the ability to use a cost-effective, alternative weed-control option such as Liberty® herbicide or a conventional herbicide program. Herculex® XTRA is an effective corn insect management trait option for greater profit potential.



HERCULEX® I

If you don't need corn rootworm protection, Herculex® I Insect Protection gives full-plant protection all season long against European corn borer, black cutworm and other yieldrobbing, aboveground pests. All Herculex® I hybrids contain LibertyLink® technology, making them resistant to over-the-top applications of Liberty® herbicide.

HERCULEX® XTRA AND HERCULEX® I DELIVER A WIDE WINDOW OF PROTECTION



CROP AND GRAIN MARKETING STEWARDSHIP

Dow AgroSciences is a member of Excellence Through Stewardship® (ETS). Dow AgroSciences products are commercialized in accordance with ETS product launch stewardship guidance and Dow AgroSciences Product Launch Stewardship Policy. No crop or material produced from this product can be exported to, used, processed or sold across boundaries into nations where import is not permitted. Growers should talk to their grain handler or product purchaser to confirm their buying position for this product. For further information about your crop or grain marketing options, contact DAS at 877-4-TRAITS (877-487-2487). Information regarding the regulatory and market status of agricultural biotechnology products can be found at www.biotradestatus.com.

Properly managing trait technology is key to preserving it as a long-term crop protection tool. Growers who fail to comply with insect resistance management (IRM) requirements risk losing access to this product. To help preserve the effectiveness of B.t. corn technologies, growers planting B.t. corn technologies are required to follow an IRM Plan. Consult the Corn Product Use Guide for appropriate refuge configuration options. Before opening a bag of seed, be sure to read, understand and accept the stewardship requirements, including applicable refuge requirements for insect resistance management, for the biotechnology traits expressed in the seed as set forth in the Technology Use Agreement and Product Use Guide. By opening and using a bag of seed, you are reaffirming your obligation to comply with the most recent stewardship requirements. For complete details on IRM requirements for hybrids with B.t. technology, including refuge examples and important information on the use of insecticides on refuge and B.t. corn acres, please consult the appropriate Product Use Guide. Go to www.corteva.us/Resources/ trait-stewardship.html to download the latest Dow AgroSciences Corn Product Use Guide. Herculex® Insect Protection technology by Dow AgroSciences and Pioneer® Hi-Bred. Herculex® and the Herculex® logo are trademarks of The Dow Chemical Company ("Dow") or an affiliated company of Dow. Bayer CropScience LP, 2 T.W. Alexander Drive, Research Triangle Park, NC 27709. Always read and follow label instructions. Liberty®, LibertyLink® and the Water Droplet Design are registered trademarks of Bayer. Liberty® is not registered in all states. For additional product information, call toll-free 1-866-99-BAYER (1-866-992-2937) or visit our website at www.BayerCropScience.us.

1. Corn rootworm is only controlled with Herculex® XTRA Insect Protection. Follow IRM, grain marketing and all other stewardship practices and pesticide label directions







BREAKTHROUGH AGRISURE® TRAIT TECHNOLOGY

Agrisure® traits deliver corn insect control, water optimization technology and outstanding herbicide tolerance to optimize the yield potential of elite hybrids.

AGRISURE ARTESIAN®

Maximize yield potential when it rains and increase yield potential when it doesn't.

Built using scientifically selected genes, this elite class of high-performing hybrids can respond to water stress with multiple genes and at virtually any stage of growth — managing gaps in rainfall throughout the season. Artesian™ corn hybrids can help manage the unpredictability of weather and improve yield consistency by converting water to grain more efficiently than other hybrids.

AGRISURE ARTESIAN® ADVANTAGE



Elkville, III., 2012

AGRISURE VIPTERA®

More control of more insects for more yield potential.

Agrisure Viptera® trait stacks provide the most comprehensive corn insect control, reducing insect feeding damage to ears and the subsequent development of molds and mycotoxins. By controlling major leaf-, stalk-and ear-feeding corn insects, the Agrisure Viptera® trait offers better crop stands and lower levels of disease, resulting in increased yield and profit potential.

► Agrisure Viptera® 3111

Above- and belowground insect control.

► Agrisure Viptera® 3220 E-Z Refuge®

Dual modes of action against aboveground insects, with a 5% single-bag refuge.

Trait stacks containing the Agrisure Viptera® trait are also available in combination with Agrisure Artesian® technology for maximized yield in water-stressed environments.

AGRISURE VIPTERA® TRAIT PERFORMANCE ON WESTERN BEAN CUTWORM¹

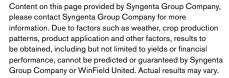




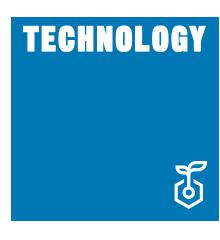


Hybrid without the Agrisure Viptera® trait

1. Agrisure Viptera® on western bean cutworm vs. competitive hybrid. Sterling, Colo., 2014.







ACHIEVE REAL YIELDS WITH THE LIBERTYLINK® SYSTEM

The LibertyLink® trait and Liberty® herbicide offer a broad-spectrum weed-control program and an effective resistance-management tool.

Farmers can preserve the value of glyphosate-tolerant crops by rotating them to the LibertyLink® trait and Liberty® herbicide. This efficient system is the only alternative crop technology available that maintains the simplicity of glyphosate-tolerant crop systems while controlling a wide spectrum of broadleaf weeds and grasses, including weeds resistant to glyphosate and other herbicide classes.

Liberty

LIBERTY® HERBICIDE

Liberty® herbicide delivers superior weed control across enabled trait systems, with greater application flexibility, unmatched convenience and no known resistance in U.S. row crops. Liberty® provides:

- Trait flexibility across today's trait platforms
- Excellent weed control from the broadest spectrum herbicide, for control of tough weeds like Palmer amaranth and waterhemp
- Peace of mind with Liberty® herbicide's proven formulation that provides reliable, consistent performance and is backed by the Liberty® Herbicide Weed Control Guarantee

Talk to your retailer to learn how you can qualify for the Liberty® Guarantee as well as to learn more about your local S.T.O.P. Weeds application guidelines for maximum weed control.

LIBERTYLINK® SYSTEM



► LibertyLink® Soybeans¹

The LibertyLink® system combines the highperforming LibertyLink® trait with the power of Liberty® herbicide for proven excellent yield performance. The system provides excellent weed control with greater flexibility and convenience.

Features & Benefits

- Excellent yield performance
- High-performing genetics, protected by excellent weed control, to ensure weeds are better controlled to reduce their drain on yield
- 2+ bu/A advantage over Asgrow[®] Roundup Ready 2 Xtend[®] in over 2,100 observations¹

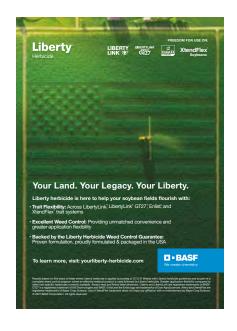
► LibertyLink® Corn

The LibertyLink® system enables growers to use the powerful Liberty® herbicide, a nonselective herbicide effective on tough-to-control grasses and broadleaf weeds, for over-the-top use on over 50 million LibertyLink®-enabled corn hybrid acres with Herculex®, Genuity® SmartStax® and Agrisure® hybrids with corn-borer protection. The LibertyLink® system is simply the better solution built upon high-performing genetics and excellent weed control for a stronger yield.

► InVigor® LibertyLink® Canola

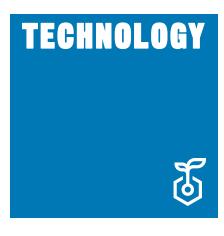
The LibertyLink® system is the simply better solution built upon high-performing genetics and excellent weed control that delivers real yield. InVigor® canola hybrids enabled with the LibertyLink® trait are top performers, known for consistently outstanding yield potential, vigorous early-season growth, uniform height and maturity, and excellent harvestability enabled by the pod shatter resistance trait. The LibertyLink® system provides excellent weed control and preserves the yield of high-performing hybrids.

Yield shown summarizes average of LibertyLink® and Asgrow® RRXtend varieties entered across the Midwest. Delta. Northeast and the Southwest.









CALIBRATE® TECHNOLOGIES

KNOW THE QUALITY OF YOUR FORAGES

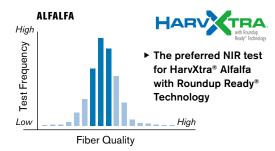
Variation in any dairy feeding program can cause underperformance: lost milk production, lower feed efficiency and lower profit potential. Calibrate® fiber and starch quality tests are designed to reduce the impact of nutrition variation in feedstuffs and allow more value to be obtained from forages, grown or purchased.

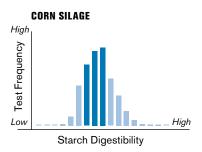
Calibrate® patented forage quality tests are designed to:

- · Feed homegrown forages more effectively.
- Assist in making informed decisions when purchasing hay.
- Enable and assist your nutritionist to further improve rations.
- Confidently feed highly digestible forages in the ration and maximize ROI potential.
- Get optimal performance out of lowerquality forages.
- Determine if forage quality is a limiting factor to milk production.
- Provide more peace of mind because better decisions are made with available feedstuffs.

WITH HIGH- OR LOW-QUALITY FORAGES, CALIBRATE® TESTS DELIVER RELIABLE ACCURACY

Laboratory analysis can be less accurate when forage quality is not average. In the quality graphs below, the light bars represent where fiber and starch digestibility is either high or low. The analysis accuracy of these extremes is financially critical to forage growers and dairy farmers. Calibrate® forage quality tests maintain their accuracy as feeds drift toward the extremes.





CALIBRATE® PATENTED FORAGE QUALITY TESTS OFFER EXCEPTIONAL DIGESTIBILITY INFORMATION

Calibrate® technology provides forage analysis testing with improved accuracy for forages of all qualities. Designed to eliminate the necessity of an in vitro analysis (wet chem), Calibrate® forage analysis tests were developed using in vitro results from over 125,000 samples and 15 years of research, representing a wide range of forage quality from across the U.S. The volume of samples tested and the emphasis on samples of extreme quality (high and low) make Calibrate® forage analysis more precise.

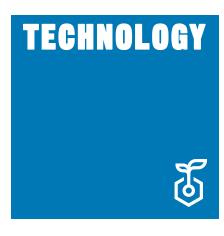
CALIBRATE® HIGH QUALITY FORAGE ANALYSIS FOR ALFALFA

In addition to starch and fiber digestibility values for feed and forage feedstuffs, Calibrate® also offers the Calibrate® HQ Forage Analysis specifically targeted at alfalfa. This test provides crude protein, ash, NDF and NDFD, as well as calculated values for summative TDN, RFV and RFQ. Coming in 2021 will be the addition of a value for Leaf Percentage to help understand how the leaf to stem ratio affects alfalfa quality.

For more information, contact your local WinField United representative or go to www.calibratetechnologies.com.







THE KEMIN® NUTRISAVE® SYSTEM HELPS OPTIMIZE FORAGE QUALITY

The Kemin® NutriSAVE® Forage Management System is a complete forage management approach to preserving quality in the forages you grow for use in dairy or beef production. The products and support offered through the NutriSAVE® System aid producers in helping maintain forage quality by reducing shrinkage and spoilage, resulting in better nutrition. The NutriSAVE® System includes management recommendations from harvest to storage and through feeding. The system's crop- and condition-specific products include the latest technology and are backed by current research and experts in the forage management field.

ACID-BASED PRODUCTS

- Fresh CUT® Plus Liquid Hay Preservative
 Applied to hay baled at up to 25% moisture.
 The blend of acids helps control the growth of mold and wild yeast, preventing bale heating and preserving nutrients.
- Silage SAVOR® Plus Liquid and Silage SAVOR® Dry Silage Preservatives
 These forage preservatives are applied to ensiled crops before storage. The acid blends are used to prevent mold and wild yeast growth, allowing for improved fermentation.
- Myco CURB® Liquid and Dry Mold Inhibitors

Designed to prevent mold growth on stored grain, feed and feed ingredients. For more than 35 years, Myco CURB® has been the gold standard for mold control.

 Ultra CURB® Liquid and Dry Mold Inhibitors

These products contain a powerful blend of four organic acids designed to control heating in total mixed rations (TMRs).

BENEFITS OF THE NUTRISAVE® PROGRAM AND PRODUCTS

The minute forages are harvested, the race against time begins. The crop quickly deteriorates after cutting, and the quality CROPLAN® seed that was so carefully selected can fail to deliver the nutrients expected without proper preservation. Forage quality can have a huge impact on your operation's profitability and performance. That is why generating the most value from the forages you grow is important. Highquality forage optimizes productivity and herd health.

The NutriSAVE® Forage Management System features acid-based solutions. The blended organic acid products work to reduce mold and wild yeast growth to widen harvest windows, enhance fermentation and increase aerobic stability, both before and after storage. The flexibility to offer the ideal solution for nearly every forage management challenge is why producers have relied on the NutriSAVE® Forage Management System for decades.

KEY FEATURES OF USING NUTRISAVE® PRODUCTS

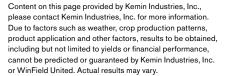
- Acid-based products for all forage applications.
- Helps reduce shrinkage and spoilage of dry matter.
- Reduces growth of mold and wild yeast.
- Promotes faster fermentation or curing.
- Extends aerobic stability at feedout.
- Supports optimal animal performance.

PROVEN PERFORMANCE WITH NUTRISAVE® PRODUCTS AND PROGRAMS

Extensive laboratory, university and field trials show that NutriSAVE® products can outperform other additives. By using the tools and resources available, NutriSAVE® programs can help you achieve a greater potential return on your forage investment. For more information about the Kemin® NutriSAVE® Forage Management System, talk with your WinField United representative or contact Kemin® at KeminAg@kemin.com or 515-559-5304. Additional product details are available online at kemin.com/feedquality.

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*** Trademarks of Kemin Industries, Inc., U.S.A. Certain statements may not be applicable in all geographical regions. Product labeling and associated claims may differ based upon government requirements.





TECHNOLOGY



PROPER MANAGEMENT PROTECTS TECHNOLOGY'S VALUE

Sound management practices and compliance with stewardship requirements will help protect the benefits and value of biotech trait seed technology for future generations.

SOYBEAN AND CANOLA PIRACY

Seed containing a patented trait can only be used to plant a single commercial crop. It is unlawful to save and replant seed from that crop. Examples of seed containing a patented trait include but are not limited to XtendFlex® soybeans, Roundup Ready 2 Yield® soybeans, Roundup Ready 2 Xtend® soybeans, TruFlex™ canola, Roundup Ready® spring canola and Roundup Ready® winter canola. Additional information and limitations on the use of these products are provided in the Technology Stewardship Agreement, the Bayer Technology Use Guide: https://tug.bayer.com. U.S. patents for Bayer technologies can be found at the following webpage: http://www. monsantotechnology.com.

INSECT RESISTANCE MANAGEMENT

Insect-protected crops are genetically improved to provide in-plant protection against selected insect pests. Beneficial insects are not affected. To preserve the benefits and insect protection of these technology crops, Bayer CropScience, Syngenta Crop Protection and Dow AgroSciences have developed IRM guidelines that must be incorporated by everyone purchasing and planting insect-protected crops.



Verification Required The last patent on the original Roundup Ready* soybean trait expired a few years ago and U.S. farmers may legall y plant saved seed from some varieties of soybean containing the Roundup Ready* soybean trait. However, it is important that you check with your seed supplier to determine if a specific Roundup Ready* soybean variety is covered by other intellectual property rights, and if so, the policy for saving seed of that variety.

Higher Seeding Rate A higher seeding rate may be required for bin-run Roundup Ready" soybeans compared to new branded seed.

Yield Loss Roundup Ready 2 Yield", Roundup Ready 2 Xitend" and XiendFlex" soybean varieties typically have a higher yield opportunity
than Roundup Ready" soybean varieties.

Cleanout Loss Loss of seed and/or shrink occurs during the seed cleaning and handling processes for bin-run seed.

Seed Treatment Costs Treating your seed will add costs—both the cost of the treatment and the application of that treatment.

Lost Income Every bushel of saved seed you plant is a bushel you're not selling as commodity grain.

Increased Seed Management If you plan to save and bin-run Roundup Ready® soybeans for planting, you will have to manage your harvest operations and grain storage so that the seed isn't co-mingled with other seed that's covered by intellectual property rights.

High Value of New Branded Seed

LATEST TECHNOLOGY

// High-yielding soybean technologies // Better variety options

// Leading seed treatment options

CUSTOMER SERVICE
// Dealer agronomic support befor

// Replant policy support

// Convenient packaging and delivery

RELIABLE GERMINATION AND QUALITY

// Rigorously tested and meets
U.S. Federal Seed Act requirements

// Properly stored and conditioned

For more information on seed intellectual property protection, or to anonymously report a tip, please call 1-866-99-BAYER. For a list of relevant patents visit www.monsantotechnology.com

Seed Innovation & Protection Alliance
to in Commodity Crops. Commercialized products have been approved for impart into key export

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Roundup Ready 2 Yield® soybeans and Roundup Ready 2 Xtend® soybeans are covered by different patents than original Roundup Ready® soybeans and cannot be saved and planted. For more information about seed innovation and intellectual property protection, please visit www.seedipalliance.com.





CORN INSECT RESISTANCE MANAGEMENT OVERVIEW¹ QUICK COMPLIANCE GUIDE FOR DEALERS AND FARMERS

1 REFUGE SIZE

Plant the correct size refuge for the area and corn product.

▶ The Corn-Growing Area

- 20% required for some B.t. products (20 acres of refuge for every 80 acres of B.t.)
- 5% only for SmartStax® and VT Double PRO® (5 acres of refuge for every 95 acres of B.t.)

► The Cotton-Growing Area

 20% only for SmartStax® and VT Double PRO® (20 acres of refuge for every 80 acres of B.t.)

2 REFUGE LOCATION

Plant the required refuge within each field that contains B.t. insect-protected corn. There are other options, but an in-field refuge is always accepted. The refuge should always be a minimum of four contiguous rows wide.



3 REFUGE PLANTING

In each field, plant your refuge first before planting any insect-protected corn. This will ensure that the minimum refuge size requirement is met should unforeseen circumstances (e.g., adverse weather) alter your planting schedule and strategy. Use a refuge product that contains no B.t. insect-protection traits (e.g., Roundup Ready® or conventional corn are acceptable). Growers must read the IRM/Grower Guide for complete refuge planting requirements.

4 TREATMENT

If you need to treat your refuge with a non-B.t. foliar insecticide, you may have to treat the B.t. technology in a similar manner. Growers must read the IRM/Grower Guide for complete treatment options.

COMMON REFUGE CONFIGURATIONS

Traited corn hybrid² Refuge

► In-Field Configuration Examples

Block Perimeter Strips

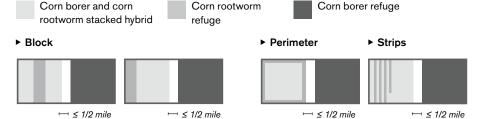
Minimum of four rows

► Adjacent-Field Configuration Examples



Separated by road, path, ditch, etc., but not by another field

SEPARATE REFUGE CONFIGURATIONS



- 1. Provided as a summary only. Farmers must read the IRM/Grower Guide prior to planting for important information on planting and insect resistance management.
- 2. Traited = B.t., RW or B.t./RW.





REFUGE REQUIREMENTS FOR BIOTECH CORN PRODUCTS^{1, 2}

	% NON-B.T. REFUGE	CONFIGURATIONS	REFUGE LOCATION
SMARTSTAX® RIB COMPLETE® CORN BLEND³	5% in the bag	_	No separate planted refuge is required
VT DOUBLE PRO® RIB COMPLETE® Corn Blend³	5% in the bag	_	No separate planted refuge is required
DROUGHTGARD® HYBRIDS WITH VT DOUBLE PRO® RIB COMPLETE® CORN BLEND³	5% in the bag	_	No separate planted refuge is required
SMARTSTAX® CORN	5% corn-growing areas; 20% cotton-growing areas	Block, Perimeter, Strips, Adjacent	Within or adjacent to SmartStax® field; if adjacent, may be separated by a road, path, ditch, etc., but not another field
VT DOUBLE PRO® CORN	5% corn-growing areas; 20% cotton-growing areas	Block, Perimeter, Strips, Adjacent	Within, adjacent to or within 1/2 mile from VT Double PRO® field
AGRISURE VIPTERA®	20% corn-growing areas	Block, Perimeter, Strips, Adjacent	Within or adjacent to Agrisure Viptera® field; if adjacent, may be separated by a road, path, ditch, etc., but not another field
AGRISURE® 3000GT, AGRISURE® CB/LL/RW	20% corn-growing areas; 50% cotton-growing areas	Block, Perimeter, Strips, Adjacent	Within or adjacent to Agrisure® 3000GT or Agrisure® CB/LL/RW field; if adjacent, may be separated by a road, path, ditch, etc., but not another field
AGRISURE® GT/CB/LL, AGRISURE® CB/LL	20% corn-growing areas; 50% cotton-growing areas	Block, Perimeter, Strips, Adjacent	Within, adjacent to or within 1/2 mile from Agrisure® GT/CB/LL or Agrisure® CB/LL field
HERCULEX® XTRA INSECT PROTECTION	20% corn-growing areas; 50% cotton-growing areas	Block, Perimeter, Strips, Adjacent	Within or adjacent to Herculex® XTRA field; if adjacent, may be separated by a road, path, ditch, etc., but not another field
HERCULEX® I INSECT PROTECTION	20% corn-growing areas 50% cotton-growing areas	Block, Perimeter, Strips, Adjacent	Within, adjacent to or within 1/2 mile from Herculex® field

^{1.} All refuge configurations require a minimum of four rows.

For more detailed refuge requirements please visit: https://traits.bayer.com/stewardship/Pages/Insect-Resistance-Management.aspx



Content on this page provided by Bayer, Corteva Agriscience and Syngenta Group Company, please contact them for more information. Due to factors such as weather, crop production patterns, product application and other factors, results to be obtained, including but not limited to yields or financial performance, cannot be predicted or guaranteed by Bayer, Corteva Agriscience and Syngenta Group Company or WinField United. Actual results may vary.

^{2.} Provided as a summary only. Farmers must read the IRM/Grower Guide prior to planting.
3. SmartStax® RIB Complete®, VT Double PRO® RIB Complete® and DroughtGard® Hybrids with VT Double PRO® RIB Complete® corn blends are each a blend of 95% traited seed and 5% refuge seed interspersed in the bag and do not require a separate structured refuge in corn-growing areas.

EXCELLENCE THROUGH STEWARDSHIP

Bayer is a member of Excellence Through Stewardship® (ETS). Bayer products are commercialized in accordance with ETS Product Launch Stewardship Guidance, and in compliance with Bayer's Policy for Commercialization of Biotechnology-Derived Plant Products in Commodity Crops. Commercialized products have been approved for import into key export markets with functioning regulatory systems. Any crop or material produced from this product can only be exported to, or used, processed or sold in countries where all necessary regulatory approvals have been granted. It is a violation of national and international law to move material containing biotech traits across boundaries into nations where import is not permitted. Growers should talk to their grain handler or product purchaser to confirm their buying position for this product. Excellence Through Stewardship® is a registered trademark of Excellence Through Stewardship.

Forage Genetics International, LLC ("FGI") is a member of Excellence Through Stewardship® (ETS). FGI products are commercialized in accordance with ETS Product Launch Stewardship Guidance, and in compliance with FGI's Policy for Commercialization of Biotechnology-Derived Plant Products in Commodity Crops. Any crop or material produced from this product can only be exported to, or used, processed or sold only in countries where all necessary regulatory approvals have been granted. It is a violation of national and international law to move material containing biotechnology traits across boundaries into nations where import is not permitted. Growers should talk to their grain handler or product purchaser to confirm their buying position for this product. Growers should refer to biotradestatus.com for any updated information on import country approvals. Excellence Through Stewardship[®] is a registered trademark of Excellence Through Stewardship.

INSECT RESISTANCE MANAGEMENT

IMPORTANT IRM INFORMATION: Always read and follow IRM requirements. Insect-protected crops are genetically improved to provide in-plant protection against selected insect pests. Beneficial insects are not affected. To preserve the benefits and insect protection of these technology crops, Bayer, Syngenta Crop Protection and Dow AgroSciences have developed insect resistance management (IRM) guidelines that must be incorporated by everyone purchasing and planting insect-protected crops.

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. It is a violation of federal and state law to use any pesticide product other than in accordance with its labeling. NOT ALL formulations of dicamba or glyphosate are approved for in-crop use with Roundup Ready 2 Xtend® soybeans. NOT ALL formulations of dicamba, glyphosate or glufosinate are approved for in-crop use with products with XtendFlex® Technology. ONLY USE FORMULATIONS THAT ARE SPECIFICALLY LABELED FOR SUCH USES AND APPROVED FOR SUCH USE IN THE STATE OF APPLICATION. Contact the U.S. EPA and your state pesticide regulatory agency with any questions about the approval status of dicamba herbicide products for in-crop use with Roundup Ready 2 Xtend® soybeans or products with XtendFlex® Technology.

B.t. products may not yet be registered in all states. Check with your seed brand representative for the registration status in your state.

IMPORTANT IRM INFORMATION: RIB Complete® corn blend products do not require the planting of a structured refuge except in the Cotton-Growing Area where corn earworm is a significant pest. See the IRM/Grower Guide for additional information. Always read and follow IRM requirements.

Roundup Ready® Technology contains genes that confer tolerance to glyphosate. Roundup Ready® 2 Technology contains genes that confer tolerance to glyphosate. Roundup Ready 2 Xtend® soybeans contain genes that confer tolerance to glyphosate and dicamba. Products with XtendFlex® Technology contains genes that confer tolerance to glyphosate, glufosinate and dicamba. Glyphosate will kill crops that are not tolerant to glyphosate. Dicamba will kill crops that are not tolerant to dicamba. Glufosinate will kill crops that are not tolerant to glufosinate. Contact your seed brand dealer or refer to the Bayer Technology Use Guide for recommended weed control programs.

Insect control technology provided by **Vip3A** is utilized under license from Syngenta Crop Protection AG. Herculex[®] is a registered trademark of Dow AgroSciences LLC. Agrisure Viptera[®] is a registered trademark of a Syngenta group company. LibertyLink[®] and the Water Droplet Design[®] is a trademark of BASF Corporation. Respect the Refuge and Corn Design[®] and Respect the Refuge are registered trademarks of National Corn Growers Association. Acceleron[®], DroughtGard[®], RIB Complete[®], Roundup Ready 2 Technology and Design[™], Roundup Ready 2 Xield[®], Roundup Ready 2 Yield[®], Roundup Ready 2 Yield[®], Roundup Ready SmartStax[®], Trecepta[®], TruFlex[™], VT Double PRO[®] and XtendFlex[®] are trademarks of Bayer Group.

Important: Always read and follow label and bag tag instructions; only those labeled as tolerant to glufosinate may be sprayed with glufosinate ammonium based herbicides.

Agrisure® Technology incorporated into these seeds is commercialized under license from Syngenta Seeds, Inc. Herculex® Technology incorporated into these seeds is commercialized under license from Dow AgroSciences LLC. HERCULEX® and the HERCULEX shield are registered trademarks of Dow AgroSciences LLC.

Seed products with the LibertyLink® (LL) trait are resistant to the herbicide glufosinate ammonium, an alternative to glyphosate in corn, and combine high-yielding genetics with the powerful, non-selective, postemergent weed control of Liberty® herbicide for optimum yield and excellent weed control. LibertyLink®, Liberty® and the Water Droplet logo are registered trademarks of BASF Corporation.



Before opening a bag of seed, be sure to read, understand and accept the stewardship requirements, **including applicable refuge requirements for insect resistance management**, for the biotechnology traits expressed in

the seed as set forth in the Technology/Stewardship Agreement that you sign. By opening and using a bag of seed, you are reaffirming your obligation and agreement to comply with the most recent stewardship requirements.



GENERAL DISCLAIMERS

Performance may vary from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the growers' fields.

Important: Always read and follow label instructions. Some products may not be registered for sale or use in all states or counties. Please check with your local extension service to ensure registration status.

Please know that, despite the challenges, Bayer stands fully behind XtendiMax[®] herbicide and will continue working with the EPA, growers, academics, and others to provide long-term access to this important herbicide.

However, no dicamba may be used in-crop with seed in the Roundup Ready® Xtend Crop System, unless and until approved or specifically permitted by the U.S. EPA and the appropriate state agency for such use. As of July 13, 2020, no dicamba formulations are currently registered by the U.S. EPA for in-crop use with seed in the Roundup Ready® Xtend Crop System in the 2021 season, Current stocks of lowvolatility dicamba herbicides XtendiMax® herbicide, Engenia® herbicide, and FeXapan® herbicide previously approved for in-crop use with seed in the Roundup Ready® Xtend Crop System may not be used after July 31, 2020. Dicamba may harm crops that are not tolerant to dicamba. Contact the U.S. EPA and your state pesticide regulatory agency with any questions about the approval status of dicamba herbicide products for in-crop use with seed in the Roundup Ready® Xtend Crop System.

NOTICE: DO NOT APPLY ANY HERBICIDE TO SEED IN THE ROUNDUP READY® XTEND CROP SYSTEM UNLESS IT HAS A PRODUCT LABEL SPECIFICALLY AUTHORIZING THAT USE. TO USE A HERBICIDE IN ANY MANNER INCONSISTENT WITH ITS LABELING IS A VIOLATION OF FEDERAL LAW. REFER TO THE BAYER TECHNOLOGY USE GUIDE FOR DETAILS AND RECOMMENDATIONS ON USING APPROVED HERBICIDES ON SEED IN THE ROUNDUP READY® XTEND CROP SYSTEM.

SOYBEAN AND CANOLA PIRACY

Seed containing a patented trait can only be used to plant a single commercial crop. It is unlawful to save and replant seed from that crop. Examples of seed containing a patented trait include but are not limited to Roundup Ready 2 Yield® soybeans, Roundup Ready 2 Xtend® soybeans, XtendFlex® soybeans, Roundup Ready® spring canola, Roundup Ready® winter canola, and TruFlex™ canola with Roundup Ready® Technology. Additional information and limitations on the use of these products are provided in the Technology Stewardship Agreement and the Bayer Technology Use Guide: https://tug.bayer.com. U.S. patents for Bayer technologies can be found at the following webpage: http://www.monsantotechnology.com

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HarvXtra® Alfalfa with Roundup Ready® Technology: Purchase and use of HarvXtra® Alfalfa with Roundup Ready® Technology is subject to a Seed and Feed Use Agreement, requiring that products of this technology can only be used on farm or otherwise be used in the following states: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming. In addition, due to the unique cropping practices do not plant HarvXtra® Alfalfa with Roundup Ready® Technology in Imperial County, California, pending import approval and until Forage Genetics International, LLC (FGI) grants express permission for such planting. HarvXtra® Alfalfa with Roundup Ready® Technology has pending import approvals. **GROWERS MUST DIRECT ANY PRODUCT** PRODUCED FROM HARVXTRA® ALFALFA WITH ROUNDUP READY® TECHNOLOGY SEED OR CROPS (INCLUDING HAY AND HAY PRODUCTS) ONLY TO UNITED STATES DOMESTIC USE. Any crop or material produced from this product can only be exported to, or used, processed or sold in countries where all necessary regulatory approvals have been granted. It is a violation of national and international law to move material containing biotech traits across boundaries into nations where import is not permitted.

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