CROPLAN® seed by WinField United brings a broad portfolio of locally proven, nationally validated products to market, backed by data from nearly 200 Answer Plot® locations. WinField® United precision ag solutions help you place seed and crop inputs to achieve high yield and ROI potential. As trusted advisors, we work with you every step of the way to help you achieve your long-term goals.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Topic</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>4–21</td>
</tr>
<tr>
<td>Soybean</td>
<td>22–31</td>
</tr>
<tr>
<td>Alfalfa</td>
<td>32–39</td>
</tr>
<tr>
<td>Corn Silage</td>
<td>40–49</td>
</tr>
<tr>
<td>Technology</td>
<td>50–57</td>
</tr>
<tr>
<td>Winfield® United Products</td>
<td>Page 58</td>
</tr>
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</table>
YOUR GUIDE TO SEASON-LONG CROP MANAGEMENT
PLAN APPROPRIATELY

- Use this Seed Guide and the R7® Tool Top 10 and CHT functions to choose the right hybrids and varieties for your soil type and yield goals.
- CROPLAN® seed offers genetics and traits geared specifically for your region.

MAKE INFORMED EARLY-SEASON DECISIONS

- Consult Answer Plot® data and response-to-population (RTP) scores to find optimal seeding rates for the products you choose.
- Seed treatments help reduce disease and insect damage.
- Use Ascend® plant growth regulators to help spur early-season emergence.

MANAGE THROUGHOUT THE SEASON

- In-season management using R7® Tool satellite imagery helps identify concerns quickly so you can capitalize on higher-producing fields and minimize inputs on lower-producing ones.
- Tissue testing at optimal plant growth stages helps you stay on top of nutrient needs.
- Response-to-nitrogen (RTN) scores can help you determine whether you have chosen the most appropriate hybrids for your level of nitrogen use and make any necessary changes for next season.
- Use response-to-fungicide (RTF) scores to accurately predict the effectiveness of fungicide applications on your selected hybrids.

HARVEST AND EVALUATE

- Consult this Seed Guide for tips on proper harvesting techniques to minimize in-field losses. Use the R7® Tool Field Response Map to compare yield data to satellite imagery, which will indicate crop response to applications, and to plan for next year.
- The R7® Tool Profitability Map is designed to provide you with input costs and yield potential map data to help you determine ROI potential and better align input investments with yield potential in the future.
CORN

Optimize today’s fields for tomorrow’s yields

WinField United equips you with the tools you need to make good agronomic decisions for your corn crop. For example, what nutrients and crop protection products make the most sense for your particular acres and your specific hybrids? How much do you apply, when do you apply and where do you apply them to achieve the most yield and profit potential? And how do you use them in a way that puts sustainability at the forefront?

KEY TAKEAWAYS

1. Optimize yield potential by understanding hybrid response to population.
2. Understand hybrid response to crop rotation and soil type.
3. Consider split- and in-season nitrogen applications.
4. Understand a hybrid’s potential ROI with fungicide applications.
5. Use quality data from WinField United for informed decision-making.
## CONSIDER POPULATION

### SILKING UNDER STRESS

The greatest improvement in the newest genetics is the ability to silk under stress, even at high plant densities.

At nearly 200 Answer Plot™ locations, hybrids are carefully evaluated for their specific response to plant populations. The data from these evaluations are used to determine our response-to-population (RTP) scores, which are available from your WinField® United representative and through the R7™ Tool.

### HYBRID POPULATION COMPARISON

Planting each hybrid at the right population is key to optimizing its performance potential. In this example, note the ear flex and decrease in root size and stalk diameter when the hybrid has a low response to population (RTP). With higher RTP characteristics and more fixed-ear hybrids, the hybrid with a high RTP maintains root diameter at higher plant densities.

### HYBRID PERFORMANCE AT DIFFERENT POPULATIONS

CROPLAN® seed’s proprietary RTP ratings range from low to high. A high RTP score identifies a hybrid that shows a potential yield gain with increasing populations. A medium RTP score defines a hybrid as able to achieve high yields at moderately high populations, yet still maintain yield at moderately low populations. A low RTP score indicates a flex-ear-type hybrid with acceptable yield potential, even at low populations for a particular area. The charts below show how hybrids perform differently under high, medium and low populations.

### 80 RM and less

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MATCH HYBRID TO CROP ROTATION AND SOIL TYPE

- **RESPONSE-TO-CONTINUOUS-CORN RANGE:** 3.3 TO 33.5 BUSHELS
- **RESPONSE-TO-SOIL-TYPE RANGE:** 0.6 TO 23.9 BUSHELS

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 residue, insect and disease management — in addition to vigilant scouting — are all critical to sustaining an optimal corn-on-corn system.
- For good emergence, match hybrids to soil type, plant corn at uniform depths, and keep stronger-emerging hybrids on continuous-corn fields with heavy residue.

The CHT function of the R7 Tool uses data from the Answer Plot Program to compare CROPLAN seed products, as well as seed from other major companies, to see how they are projected to perform on fields like yours. Categories for comparison include soil type, crop rotation activity, plant population and management practices. For example, this CHT chart shows how hybrids A, B and C are projected to perform on fine, medium and coarse soils.

TOP-PERFORMING HYBRIDS

CROPLAN corn hybrids include the right genetics adapted for top performance in Canada. Several leading hybrids in different relative maturities are highlighted below.

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*Response ranges show the importance of how hybrids respond to each management practice to help ensure the highest yield potential. 2016 Answer Plot data from 178 locations.*
BE STRATEGIC ABOUT NITROGEN

RESPONSE-TO-NITROGEN RANGE: 16.8 TO 70.9 BUSHELS

Be sure to consider the response-to-nitrogen (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 for limited nitrogen exposure. Perform appropriate tissue testing to determine optimal application timing for nitrogen, which may help minimize the financial and environmental costs of applying too much.

RESPONSE TO NITROGEN

CROPLAN® seed’s proprietary response to nitrogen (RTN) ratings range from low to high. A high RTN score identifies a hybrid that has an increased chance of return on investment from additional nitrogen (N) inputs or managing N for later release or in-season N applications. A medium RTN score defines a hybrid as able to achieve high yields at moderate to higher N levels, yet still maintain yield in situations where N may be less than optimal. A low RTN score indicates a hybrid with an acceptable yield potential even in situations where N may be limited. The charts below show how hybrids perform differently under different nitrogen management levels.

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Response ranges show the importance of how hybrids respond to each management practice to help ensure the highest yield potential. 2016 Answer Plot® data from 178 locations.

Because of factors outside of Winfield Solutions’ 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 Solutions.
KNOW WHEN FUNGICIDES BENEFIT

RESPONSE-TO-FUNGICIDE RANGE: 0.7 TO 32.1 BUSHELS

Fungicides are another tool to help you optimize the yield potential of your corn crop. Response-to-fungicide (RTF) scores help you understand where fungicides may increase yield potential and have positive ROI potential.

HIGH RTF SCORES
YIELD IMPROVEMENT

RTF scores predict the effectiveness of fungicide applications on a hybrid-by-hybrid basis.

LATE-SEASON FUNGICIDE TREATMENTS

- Under heavy disease pressure, split fungicide applications made during the V5 to V6 stage and around tasseling to R1 have been shown to be effective in preserving yield potential.
- Late-season fungicide treatments can be especially beneficial when applied to hybrids in corn-on-corn rotations.
- Thorough coverage is essential. Add Interlock® adjuvant to the tank to improve fungicide spray deposition, canopy penetration, and spray droplet sticking and spreading.

RESPONSE TO FUNGICIDE

91% of locations showed a positive response to fungicide
Average response: 5.7 bu/A advantage
Range of response: -3.7 to 21.6 bu/A
LSD (0.10) = 2.52
Source: 2014 data from 26 Answer Plot® locations.

1998–2016 Answer Plot® trial data.
TURNING 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, and sustainability.

MORE THAN 5MM DATA POINTS
18 YEARS OF ANSWER PLOT® EXPERTISE
NEARLY 200 ANSWER PLOT® LOCATIONS
EXCEPTIONAL DATA ACCURACY (LOW LSDs)

1998–2016 Answer Plot® trial data.
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, including Genuity®-traited products, develop more uniform, vigorous plant stands for high yield potential.

Acceleron® Seed Applied Solutions for corn guard against a variety of early-season pests, such as wireworms, seedcorn maggots, white grubs, grape colaspis and black cutworms (suppression). Disease protection provides excellent control of tough soil- and seedborne diseases, including Fusarium, Rhizoctonia and Pythium.

PONCHO®/VOTIVO® FOR CORN

Acceleron® Seed Applied Solutions for corn paired with Poncho®/VOTIVO® offer a unique biological mode of action for nematode management. This powerful combination protects against damage from a wide range of nematode species as well as early-season insects, from planting through critical early-season development stages.

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 soil- and seedborne disease, including Fusarium, Rhizoctonia and Pythium.

**TWO-YEAR PERFORMANCE**

Source: 2011 and 2012 Internal Monsanto Commercial Field Trials. Individual results may vary.
NEW DUPONT™ LUMIVIA® INSECTICIDE SEED TREATMENT.

DuPont™ Lumivia® is the new standard in corn seed treatment that:

- Protects against key early season insect pests, such as wireworm, white grub, cutworm and seedcorn maggot* 
- Provides excellent seedling protection 
- Simplifies your seed treatment decisions 
- Offers a favourable environmental profile 

Lumivia®: Make every seed count. Available on Croplan® brand corn for the 2018 planting season. 

Ask for Lumivia® today. lumivia.dupont.ca

DuPont™ Lumivia® is a DuPont™ Lumigen® seed sense product. 

*Suppression 

As with all crop production products, read and follow label instructions carefully. 

Member of CropLife Canada. 

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CORN Plant populations are based on final stands. See page 42.

RTP/RTN Ratings

L = Low Response
M = Moderate Response
H = High Response
TBD = To be tested in 2017

KEY Scale
1 = Excellent
2 = Above Average
3 = Average
4 = Below Average
5 = Not Recommended

1756VT2P/RIB

77 day 2250 CHU

Seedling Vigor
Drought Tolerance
Root Strength
Staygreen
Stalk Quality
Drydown
Test Weight
5 4 3 2 1

RTP vs. RTN
Response to Population
Low
Mod
High

Response to Nitrogen
Low
Mod
High

- Fixed-ear hybrid requiring medium to high populations
- Strong roots and test weight
- Above-average staygreen with solid agronomics
- Medium stature plant with medium flowering date for maturity

1725RR

79 day 2325 CHU

Seedling Vigor
Drought Tolerance
Root Strength
Staygreen
Stalk Quality
Drydown
Test Weight
5 4 3 2 1

RTP vs. RTN
Response to Population
Low
Mod
High

Response to Nitrogen
Low
Mod
High

- High-yielding genetics similar to 2123 with equal agronomic strengths
- Flowers 2 to 3 days earlier than 2123 and dries down 1 to 2 days earlier
- Dual-purpose product
- Consistent-yielding product for eastern and western Canada

184RR

80 day 2450 CHU

Seedling Vigor
Drought Tolerance
Root Strength
Staygreen
Stalk Quality
Drydown
Test Weight
5 4 3 2 1

RTP vs. RTN
Response to Population
Low
Mod
High

Response to Nitrogen
Low
Mod
High

- Flint-dent hybrid for cool, early-maturity areas
- Tall, aggressive-growing hybrid; excellent silage yield potential; must chop before 50% milkline or grain is difficult to crack
- Large, flex ear for wide adaptation to all soils and populations

2123VT2P/RIB

81 day 2450 CHU

Seedling Vigor
Drought Tolerance
Root Strength
Staygreen
Stalk Quality
Drydown
Test Weight
5 4 3 2 1

RTP vs. RTN
Response to Population
Low
Mod
High

Response to Nitrogen
Low
Mod
High

- Consistent yield potential and quick out of the ground
- Very early flowering product with fast drydown
- Mostly fixed, girty ear with good tip fill
- Excellent moisture stress tolerance in cool environments

2417VT2P/RIB

85 day 2600 CHU

Seedling Vigor
Drought Tolerance
Root Strength
Staygreen
Stalk Quality
Drydown
Test Weight
5 4 3 2 1

RTP vs. RTN
Response to Population
Low
Mod
High

Response to Nitrogen
Low
Mod
High

- High-yield-potential product with excellent defense
- Excellent emergence
- Good heat and moisture stress tolerance with proper nutrition
- Girty ear with good flex

2587VT2P/RIB

85 day 2625 CHU

Seedling Vigor
Drought Tolerance
Root Strength
Staygreen
Stalk Quality
Drydown
Test Weight
5 4 3 2 1

RTP vs. RTN
Response to Population
Low
Mod
High

Response to Nitrogen
Low
Mod
High

- Great product for multiple soil types
- Above-average staygreen and average stalk integrity
- Open husk for quick drydown
- Good disease tolerance

77–85 DAY 2350 - 2625 CHU

Plant populations are based on final stands. See page 42.
### 2845VT2P/RIB

**88 day 2675 CHU**

#### Seedling Vigor
- Drought Tolerance
- Root Strength
- Staygreen
- Stalk Quality
- Drydown
- Test Weight

#### RTP vs. RTN
- High yield-potential product across all soil types and environments
- Excellent heat stress tolerance and great tolerance to cool or short growing seasons
- Flowers early with fast drydown
- Optimum performance with higher management

#### Response to Nitrogen
- Excellent yield potential
- Early flowering enhances northern movement
- Keep on best soils with high management
- Stalk quality will benefit from side-dress nitrogen application

### 3134SS/RIB

**(VT2P/RIB) 91 day 2700 CHU**

#### Seedling Vigor
- Drought Tolerance
- Root Strength
- Staygreen
- Stalk Quality
- Drydown
- Test Weight

#### RTP vs. RTN
- Defensive companion to 2845 and 3134
- Excellent high-yield-potential product for moderate- to low-yield environments
- Good tip fill, even under high population
- Industry-leading roots and stalks

### 3146SS/RIB

**(VT2P/RIB) 91 day 2725 CHU**

#### Seedling Vigor
- Drought Tolerance
- Root Strength
- Staygreen
- Stalk Quality
- Drydown
- Test Weight

#### RTP vs. RTN
- Above-average stalks and roots
- Above-average seedling vigor
- Workhorse hybrid for low-yielding environments
- Great ear flex for variable populations

### 3314VT2P/RIB

**93 day 2750 CHU**

#### Seedling Vigor
- Drought Tolerance
- Root Strength
- Staygreen
- Stalk Quality
- Drydown
- Test Weight

#### RTP vs. RTN
- Above-average stalks and roots
- Above-average seedling vigor
- Workhorse hybrid for low-yielding environments
- Great ear flex for variable populations

### 3337VT2P/RIB

**RR 93 day 2800 CHU**

#### Seedling Vigor
- Drought Tolerance
- Root Strength
- Staygreen
- Stalk Quality
- Drydown
- Test Weight

#### RTP vs. RTN
- Great yield potential under stress
- Excellent drought tolerance with consistent silking under stress
- Early flowering
- Large, penetrating, fibrous root system for all soil types

### 3399SS/RIB

**(VT2P/RIB) 94 day 2800 CHU**

#### Seedling Vigor
- Drought Tolerance
- Root Strength
- Staygreen
- Stalk Quality
- Drydown
- Test Weight

#### RTP vs. RTN
- Excellent emergence and seedling vigor
- Medium-stature hybrid that has above-average staygreen and intactness
- Slender ear with good flex in length
- Good choice for corn-on-corn
**3611SS/RIB**  
(VT2P/RIB) 96 day 2900 CHU  

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**RTP vs. RTN**
- Response to Population
  - High
  - Mod
  - Low

**Response to Nitrogen**
- Ideal product for low- to medium-yield environments
- Handles variable plant populations
- Excellent roots and late-season intactness
- Above-average test weight

**3614VT2P/RIB**  
96 day 2850 CHU  

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</table>

**RTP vs. RTN**
- Response to Population
  - High
  - Mod
  - Low

**Response to Nitrogen**
- Offensive hybrid with strong yield potential
- Best positioned on rotated acres
- Highly responsive to increased nitrogen fertility; a fungicide application is recommended
- Excellent roots and fast drydown

**3699VT3P/RIB**  
(VT2P/RIB, RR) 96 day 2875 CHU  

<table>
<thead>
<tr>
<th>Seedling Vigor</th>
<th>Drought Tolerance</th>
<th>Root Strength</th>
<th>Staygreen</th>
<th>Stalk Quality</th>
<th>Drydown</th>
<th>Test Weight</th>
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</table>

**RTP vs. RTN**
- Response to Population
  - High
  - Mod
  - Low

**Response to Nitrogen**
- Excellent emergence with strong roots and stalks
- Very consistent hybrid that handles stress well
- Very good late-season plant health
- Adaptable to most soil types

**3705SS/RIB**  
(VT2P/RIB) 97 day 2875 CHU  

<table>
<thead>
<tr>
<th>Seedling Vigor</th>
<th>Drought Tolerance</th>
<th>Root Strength</th>
<th>Staygreen</th>
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</table>

**RTP vs. RTN**
- Response to Population
  - High
  - Mod
  - Low

**Response to Nitrogen**
- Excellent stalks with above-average seedling vigor
- Handles stress well
- Works well in both hot or cool growing seasons
- High yield potential in both high- and moderate-yield environments

**3737SS/RIB**  
(VT2P/RIB, RR) 97 day 2875 CHU  

<table>
<thead>
<tr>
<th>Seedling Vigor</th>
<th>Drought Tolerance</th>
<th>Root Strength</th>
<th>Staygreen</th>
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</table>

**RTP vs. RTN**
- Response to Population
  - High
  - Mod
  - Low

**Response to Nitrogen**
- Excellent emerging hybrid
- Early-flowering product with a smaller stature and good greensnap
- Very good drought tolerance
- Consistent performance across all environments

**3899VT2P/RIB**  
96 day 2875 CHU  

<table>
<thead>
<tr>
<th>Seedling Vigor</th>
<th>Drought Tolerance</th>
<th>Root Strength</th>
<th>Staygreen</th>
<th>Stalk Quality</th>
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</table>

**RTP vs. RTN**
- Response to Population
  - High
  - Mod
  - Low

**Response to Nitrogen**
- Excellent emergence and seedling vigor
- Data Proven hybrid; great dual-purpose option
- Above-average drought tolerance
- Consistent performance across multiple yield environments

---

**KEY**
- **Scale**
  1 = Excellent  
  2 = Above Average  
  3 = Average  
  4 = Below Average  
  5 = Not Recommended

**RTP/RTN Ratings**
- **L** = Low Response  
- **M** = Moderate Response  
- **H** = High Response  
- **TBD** = To be tested in 2017

**Hybrids best location**
- **W** = Western Hybrids  
- **E** = Eastern Hybrids

Plant populations are based on final stands. See page 42.
### 3909SS/RIB
**[VT2P/RIB] 99 day 2950 CHU**

- **Seedling Vigor**
- **Drought Tolerance**
- **Root Strength**
- **Staygreen**
- **Stalk Quality**
- **Drydown**
- **Test Weight**

### RTP vs. RTN

<table>
<thead>
<tr>
<th>Response to Population</th>
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<th>Med</th>
<th>High</th>
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<tr>
<td>High</td>
<td>3</td>
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</tbody>
</table>

### Response to Nitrogen

- Stable yield potential across multiple environments
- Early-flowering hybrid with excellent drydown
- Above-average roots and stalks with a strong response to fungicide
- Performs well in moderate fertility situations

### 4020VT2P/RIB
**NEW 100 day 2925 CHU**

- **Seedling Vigor**
- **Drought Tolerance**
- **Root Strength**
- **Staygreen**
- **Stalk Quality**
- **Drydown**
- **Test Weight**

### RTP vs. RTN

<table>
<thead>
<tr>
<th>Response to Population</th>
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<th>Med</th>
<th>High</th>
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<tr>
<td>High</td>
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### Response to Nitrogen

- Tough-acre hybrid well-adapted to stressful growing conditions
- Large fibrous root system on medium-height plant
- Flex ear allows a variety of population options
- Strong natural corn borer tolerance

### 4079SS/RIB
**NEW [VT2P/RIB] 100 day 2950 CHU**

- **Seedling Vigor**
- **Drought Tolerance**
- **Root Strength**
- **Staygreen**
- **Stalk Quality**
- **Drydown**
- **Test Weight**

### RTP vs. RTN

<table>
<thead>
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<th>Response to Population</th>
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<th>Med</th>
<th>High</th>
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<tr>
<td>High</td>
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</tbody>
</table>

### Response to Nitrogen

- Excellent roots and stress tolerance
- Above-average Goss’s wilt rating and well-adapted to corn-on-corn rotations
- Above-average seedling vigor for early planting
- Best positioned in medium to medium-high plant populations

### 4099SS/RIB
**99 day 2950 CHU**

- **Seedling Vigor**
- **Drought Tolerance**
- **Root Strength**
- **Staygreen**
- **Stalk Quality**
- **Drydown**
- **Test Weight**

### RTP vs. RTN

<table>
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<th>Response to Population</th>
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<th>Med</th>
<th>High</th>
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</tr>
<tr>
<td>High</td>
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</tbody>
</table>

### Response to Nitrogen

- Excellent roots and good late-season plant intactness
- Flowers late for maturity and has above-average stress tolerance
- Well-adapted to both high- and moderate-yield environments
- Consistent high yield potential

### 4199SS/RIB
**[VT2P/RIB] 101 day 2975 CHU**

- **Seedling Vigor**
- **Drought Tolerance**
- **Root Strength**
- **Staygreen**
- **Stalk Quality**
- **Drydown**
- **Test Weight**

### RTP vs. RTN

<table>
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<th>Response to Population</th>
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<th>Med</th>
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<tr>
<td>High</td>
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</tbody>
</table>

### Response to Nitrogen

- Exceptional stalks, roots and seedling vigor
- Strong stress tolerance within RM
- Offensive product that performs well in multiple yield environments
- Broadly adaptable hybrid with slightly more ear flex than 4099

### 4350SS/RIB
**102 day 3075 CHU**

- **Seedling Vigor**
- **Drought Tolerance**
- **Root Strength**
- **Staygreen**
- **Stalk Quality**
- **Drydown**
- **Test Weight**

### RTP vs. RTN

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<tr>
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</table>

### Response to Nitrogen

- Great for variable geographies and populations
- Above-average Goss’s wilt and stress tolerance
- Excellent roots on medium-short plant height
- Versatile hybrid with a girthy, semi-flex ear
**4488SS/RIB**

**NEW** 104 day 3150 CHU

- **Seedling Vigor**
- **Drought Tolerance**
- **Root Strength**
- **Staygreen**
- **Stalk Quality**
- **Drydown**
- **Test Weight**

- **RTP vs. RTN**
- **Response to Population**

- **Response to Nitrogen**

- Exceptional yield potential; best positioned in high-yield environments
- Tall plants with above-average roots and greensnap ratings
- Well-adapted to corn-on-corn rotations
- Above-average Goss’s wilt tolerance

---

**4791AS3111**

[ASGT] 107 day 3200 CHU

- **Seedling Vigor**
- **Drought Tolerance**
- **Root Strength**
- **Staygreen**
- **Stalk Quality**
- **Drydown**
- **Test Weight**

- **RTP vs. RTN**
- **Response to Population**

- **Response to Nitrogen**

- Medium-tall plant with outstanding late-season intactness; strong ear flex in girth
- Structured refuge needed
- Above-average Goss’s wilt tolerance with moderate response to fungicide
- Above-average roots and stalks; outstanding dual-purpose option

---

**4997SS/RIB**

**NEW** [VT2P/RIB] 109 day 3300 CHU

- **Seedling Vigor**
- **Drought Tolerance**
- **Root Strength**
- **Staygreen**
- **Stalk Quality**
- **Drydown**
- **Test Weight**

- **RTP vs. RTN**
- **Response to Population**

- **Response to Nitrogen**

- Best kept in 100 RM zone
- Tall hybrid with above-average stalks, roots and staygreen
- Broadly adapted to multiple soil types and yield environments

---

**5875SS/RIB**

108 day 3275 CHU

- **Seedling Vigor**
- **Drought Tolerance**
- **Root Strength**
- **Staygreen**
- **Stalk Quality**
- **Drydown**
- **Test Weight**

- **RTP vs. RTN**
- **Response to Population**

- **Response to Nitrogen**

- Male from 4975
- Strong yield potential across several environments with low greensnap risks
- Semi-flex ear type with 16- to 18-kernel rows; very good stalks, roots and test weight

---

**5887VT3P/RIB**

[VT2P/RIB] 108 day 3275 CHU

- **Seedling Vigor**
- **Drought Tolerance**
- **Root Strength**
- **Staygreen**
- **Stalk Quality**
- **Drydown**
- **Test Weight**

- **RTP vs. RTN**
- **Response to Population**

- **Response to Nitrogen**

- A fast-die/fast-dry product with exceptional top-end yield potential
- Excellent grain finish and test weight
- Position on medium- to top-end-producing fields; utilize moderate to lower populations
- Maintain adequate nitrogen for yield and stalk quality

---

**KEY**

- **Scale**
  - 1 = Excellent
  - 2 = Above Average
  - 3 = Average
  - 4 = Below Average
  - 5 = Not Recommended

- **RTP/RTN Ratings**
  - L = Low Response
  - M = Moderate Response
  - H = High Response
  - TBD = To be tested in 2017

- **Hybrids best location**
  - W = Western Hybrids
  - E = Eastern Hybrids

Plant populations are based on final stands. See page 42.
### BRAND

<table>
<thead>
<tr>
<th>BRAND</th>
<th>Relative Maturity</th>
<th>CHIL</th>
<th>Population (RT)</th>
<th>Nitrogen (RT)</th>
<th>Response to Fungicide (RTFC)</th>
<th>Punctural Height</th>
<th>Ear Height</th>
<th>Ear Flex</th>
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<td>T</td>
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<td>M-L</td>
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<td>TBD</td>
<td>T</td>
<td>M-H</td>
<td>RED</td>
<td>SF E</td>
</tr>
</tbody>
</table>

### KEY

**Scale**

1 = Excellent  
2 = Above Average  
3 = Average  
4 = Below Average  
5 = Not Recommended

**RTP/RTN/RTCC/RTF Ratings**

L = Low Response  
M = Moderate Response  
H = High Response  
TBD = To be tested in 2017

**Plant Height**

T = Tall  
M = Medium  
S = Short

**Ear Flex**

FL = Flex  
SF = Semi-flex  
FX = Fixed

**Staygreen**

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

**Western Hybrids**

Late-season health coming from strong leaf-disease resistance, enhancing hybrid standability.
These ratings reflect trends observed in research trials that change with variations in rainfall, temperature, crop production patterns and other factors. Ratings on new hybrids are based on limited data and may change as more data is collected.

*Follow IRM guidelines and refuge configurations outlined on pages 56-57 to preserve the benefits and insect protection of these technology crops.
Mitigate risk

Matching the right soybean genetics and traits to each field’s conditions is the first step in your aim to achieve optimal returns on your seed and input investments. Devastating soybean diseases make it imperative to invest in seed bred for disease tolerance and to protect the soybean plant throughout all stages of growth.

KEY TAKEAWAYS

1. Use appropriate trait technology to achieve effective weed control.
2. Ensure optimal plant health.
3. Choose the right soybean varieties for your specific fields.
4. Choose varieties bred with disease tolerance and manage 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.

ROUNDUP READY 2 XTEND® SOYBEANS
GENUITY® ROUNDUP READY 2 YIELD® SOYBEANS
LIBERTYLINK® SOYBEAN VARIETIES

MONITOR FERTILITY

For in-season management, regular soil and tissue sampling are the most reliable ways to determine a soybean crop’s nutrient needs.

2016 NATIONWIDE DEFICIENCIES

K POTASSIUM
Mn MANGANESE
Cu COPPER

POULATION RECOMMENDATIONS

<table>
<thead>
<tr>
<th>Row Width</th>
<th>Desired Plants/Acre</th>
<th>Optimum Plant Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>7&quot; to 10&quot; (Drilled)</td>
<td>175,000 to 200,000</td>
<td>Intermediate to Narrow</td>
</tr>
<tr>
<td>15&quot; to 20&quot; (Planter)</td>
<td>165,000 to 180,000</td>
<td>Intermediate to Medium Bush</td>
</tr>
<tr>
<td>30&quot; (Planter)</td>
<td>150,000 to 170,000</td>
<td>Medium Bush to Bush</td>
</tr>
</tbody>
</table>

MAXIMIZING STAND DENSITY

Maximizing stand density is important in order to maintain high yield potential. Here are some factors to consider when trying to obtain maximum stand density.

• Proper residue management
• Uniform seedbed
• Proper seed depth
• Proper seed-to-soil contact
• Applying a premium seed treatment
PLACE BY VARIETY

Soybean plants are hardy and adapt to a wide range of soils. To achieve your soybean seed’s optimal yield potential, match the right genetic package to each field’s specific environment.

VARIETY PERFORMANCE IN DIFFERENT SOIL TYPES

In this example, which compares Variety A and Variety B, Variety A performs better in tight, heavy clay (fine) soils, while Variety B performs better in sandy (coarse) soils.

VARIETY CHARACTERIZATION CHART

![Variety Performance Chart]

CONTROL DISEASES

Select your disease package based on field conditions.

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

PHYTOPHTHORA ROOT ROT RESISTANCE GENES

Phytophthora root rot (PRR) is a yield-robbing disease commonly found in heavier, poorly drained soils. There are many known races of phytophthora. Genes are bred into soybean varieties to convey resistance to these races, but not all resistance genes will control all races. Consult your local WinField® United representative to help you determine which resistance gene you may need.

<table>
<thead>
<tr>
<th>PRR GENES</th>
<th>PRR RACES CONTROLLED</th>
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</thead>
<tbody>
<tr>
<td>Rps3a</td>
<td>1–5, 8, 9, 11, 13, 14, 16, 18, 23, 25</td>
</tr>
<tr>
<td>Rpslc</td>
<td>1–3, 6–11, 13, 15, 17, 21, 23, 24, 26</td>
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<tr>
<td>Rpslk</td>
<td>1–11, 13–15, 17, 18, 21, 22, 24, 26</td>
</tr>
<tr>
<td>Rpsla</td>
<td>1, 2, 10, 11, 13–18, 24</td>
</tr>
</tbody>
</table>
The Next Step in Weed Control Technology

The Roundup Ready® Xtend Crop System is an advanced weed management tool in the fight against resistant and tough-to-control broadleaf weeds in soybeans. With both dicamba-tolerant and glyphosate-tolerant traits, the Roundup Ready® Xtend Crop System is designed to help maximize yield potential and improve weed control.

**Innovative Traits**

XtendiMax® with VaporGrip® Technology is a dicamba straight-goods product for tank mixing with low volatility properties.

Roundup Xtend® with VaporGrip® Technology is a glyphosate and dicamba pre-mix product with low volatility properties that provides growers with an additional choice for broad-spectrum control of weeds.

**VaporGrip® Technology**

VaporGrip® Technology is an important component of Monsanto’s dicamba formulations. VaporGrip® Technology is designed to effectively prevent the formation of dicamba acid in solution, which can volatilize when it combines with free hydrogen ions.

**Enhanced Chemistry Options**

Greater Flexibility
Weed Control and Yield Potential

**DESIGNED TO:**

- Control resistant and tough weeds with two modes of action
- Enhance application and planting flexibility
- Provide residual control up to 14 days
- Deliver proven genetics
- Maximize yield potential
Application Requirements

**SELECTING THE RIGHT NOZZLE**

Successful herbicide applications largely depend on correct nozzle selection because nozzles help determine the application rate, uniformity of spray droplet size and the carrier volume. The specific usage will determine the nozzle type necessary to do the job. Selecting the appropriate nozzle is required for on-target application of herbicides in the Roundup Ready® Xtend Crop System.

### Droplet Sizes and Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>Symbol</th>
<th>Colour Code</th>
<th>Approximate Volume Median Diameter (VMD) (microns)</th>
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</thead>
<tbody>
<tr>
<td>Extremely Fine</td>
<td>XF</td>
<td>Purple</td>
<td>~50</td>
</tr>
<tr>
<td>Very Fine</td>
<td>VF</td>
<td>Red</td>
<td>&lt; 136</td>
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<tr>
<td>Fine</td>
<td>F</td>
<td>Orange</td>
<td>136–177</td>
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<tr>
<td>Medium</td>
<td>M</td>
<td>Yellow</td>
<td>178–218</td>
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<tr>
<td>Coarse</td>
<td>C</td>
<td>Blue</td>
<td>219–349</td>
</tr>
<tr>
<td>Very Coarse</td>
<td>VC</td>
<td>Green</td>
<td>350–428</td>
</tr>
</tbody>
</table>

**Monsanto Canada recommends Extremely Coarse to Ultra Coarse.**

- Extremely Coarse (XC): White, 429–622
- Ultra Coarse (UC): Black, > 622

Always read and follow label directions.

---

### Soybean

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

#### Flower Color
- **P** = Purple
- **W** = White

#### Canopy Type
- **Nar** = Narrow
- **Int** = Intermediate
- **Bush** = Bushy

#### Pubescence Type
- **GR** = Gray
- **TW** = Tawny
- **LTW** = Light Tawny

#### Key
- **Scale**
  - 1 = Excellent
  - 2 = Above Average
  - 3 = Average
  - 4 = Below Average
  - 5 = Not Recommended

- **Brand**
  - **LT** = Liberty® Tolerant
  - **LC** = Liberty® Tolerant with SCN resistance
  - **R2T** = Roundup® Tolerant, Roundup Ready 2 Yield®
  - **R2C** = Roundup® Tolerant, Roundup Ready 2 Yield® with SCN resistance
  - **RX** = Roundup Ready 2 Xtend®
  - **S** = STS® tolerance

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

- **Canopy Type**
  - **Int** = Intermediate
  - **Bush** = Bushy

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

- **Emergence**
  - **1**
  - **2**
  - **3**
  - **4**
  - **5**

- **Standability**
  - **1**
  - **2**
  - **3**
  - **4**
  - **5**

#### Canopy Type
- **Int/Bush**

#### Emergence
- **TW**

#### Plant populations are based on final stands.

---

#### Hybrid Descriptions

**R2C0724**
- **Group** = 0.7 2725 CHU

- Best performance on silt to sand loams
- Excellent stress tolerance
- Excellent SCN with good PRR
- Moderate bush plant type to fit wider row spacings

**R2T1010**
- **Group** = 1.0 2800 CHU

- Average height and aggressive early in the season
- Average lodging and white mold tolerance
- Good PRR field tolerance
- Better in tough conditions

**LC1070**
- **Group** = 1.0 2775 CHU

- Adapted to variable soil types
- Strong defensive package
- Slightly taller plant with great standability

**RX00797**
- **Group** = 0.7 2475 CHU

- Medium height, branchy and aggressive
- Above average IDC rating with good disease package
- East/West fit
- Prefer wide rows

**RX0247**
- **Group** = 0.2 2600 CHU

- Shorter variety that stands very well
- Fits all soils
- Good white mold tolerance with nice appearance
- Prefers narrow rows and conventional tillage

**RX0636**
- **Group** = 0.6 2700 CHU

- High yielding
- Tall aggressive and branchy
- Better fit on heavier soil and minimum tillage
- Prefer wide rows
**RX2436**

Group = 2.4  3150 CHU

- Medium height, bushy, stand well
- Fit all soils and tillage system
- Consistent yield across environments
- Good disease package

**RX3015**

Group = 3.0  3225 CHU

- Robust, tall and branchy
- Stand well
- Clay beans with great diseases package
- Nice phenotype

---

Xperience better weed control with tolerance to both dicamba and glyphosate, combined with the high yield potential of Roundup Ready 2 Xtend® soybeans.

Learn more at [GenuityTraits.ca](https://GenuityTraits.ca)
# Soybean Traits and Characteristics

<table>
<thead>
<tr>
<th>BRAND 1</th>
<th>Genotype</th>
<th>Relative Maturity</th>
<th>Determinate/Indeterminate</th>
<th>SCN Resistance</th>
<th>RPS Gene</th>
<th>PRR Gene</th>
<th>SDS Tolerance</th>
<th>BSR Tolerance</th>
<th>SWM Tolerance</th>
<th>Iron Chlorosis</th>
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## ROUNDUP READY 2 XTEND™

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<th>SDS Tolerance</th>
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<td>1</td>
<td>2</td>
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<td>N/A</td>
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</tbody>
</table>

## Key

### Scale

1 = Excellent  
2 = Above Average  
3 = Average  
4 = Below Average  
5 = Not Recommended

Plant populations are based on final stands.

### Herbicide Tolerance

**LT** = Liberty® Tolerant  
**LC** = Liberty® Tolerant with SCN resistance  
**R2T** = Roundup® Tolerant, Roundup Ready® 2 Yield™  
**R2C** = Roundup® Tolerant, Roundup Ready® 2 Yield™ with SCN resistance  
**RXX** = Roundup Ready® 2 Xtend™  
**ST** = STS® tolerance

### SCN Resistance

R = Resistance to races listed  
MR = Moderately resistant to races listed

### PRR Gene

Rps = Resistance to Phytophthora sojae  
Hrps = Heterozygous segregating Rps occurrence

### Stem Canker and Root-Knot Nematode

1 = Resistant  
2 = Moderately Resistant  
3 = Moderately Resistant–Moderately Susceptible  
4 = Moderately Susceptible  
5 = Susceptible

### Canopy Type

Nar = Narrow  
Int = Intermediate  
Bush = Bushy

### Plant Height

T = Tall  
M = Medium  
S = Short

### Flower Color

P = Purple  
W = White
These ratings reflect trends observed in research trials that change with variations in rainfall, temperature, crop production patterns and other factors. Ratings on new soybean varieties are based on limited data and may change as more data is collected.
ALFALFA

Manage from seed to storage

Select the best alfalfa genetics for each field and for your management practices. New traits and technologies offer opportunities for producing higher-quality feed and enjoying greater flexibility in cutting schedules.

KEY TAKEAWAYS

1. Choose traits that fit your fields and management.
2. Use coated seed to improve stand establishment and seed efficiency.
3. Manage in-season.
4. Evaluate alfalfa fields by Reading the Stand.
5. Harvest and store properly.
TRAIT SELECTION
CROPLAN® alfalfa seed offers a variety of traits to fit your production needs.

HARVXTRA® ALFALFA
- Is the most advanced alfalfa today.
- Modifies lignin content beyond what is possible with conventional breeding.
- Gives farmers the flexibility to maintain current harvest schedules for improved quality or delay harvest for greater yield potential.
- Comes stacked with Roundup Ready® Technology for improved weed control and excellent crop safety.
- To be planted in Eastern Canada only.

CONVENTIONAL ALFALFA
- Is developed through conventional breeding and is not the result of genetic engineering (non-GMO).
- Has excellent alfalfa genetics for high forage quality and excellent yield potential.
- Is developed with high resistance to several key insects and diseases.
- May be approved for organic hay production when used with OMRI Listed® Apex™ Green coated seed option.

PRACTICE GOOD IN-SEASON MANAGEMENT

STAND ESTABLISHMENT
- Plant into a firm seedbed to control seed depth. Planting into a loose seedbed often allows seeds to end up at varying depths, resulting in uneven stands. Avoid surface application unless follow-up packing is performed.
- Planting rates do not need to be adjusted for coated seed. The planting rate for alfalfa varies from region to region, but generally 18 to 20 pounds per acre is recommended.
- Seed-to-soil contact is crucial. Water must leave the soil particle and enter the seed coat before the tiny seed can germinate. Press wheel drills, cultipackers or other roller-type devices help increase seed-to-soil contact and the number of seedlings that germinate and become established plants.

WEED CONTROL
Roundup Ready® Alfalfa provides alfalfa growers with more flexible management strategies.
- Direct seed in spring
- Spring seed with cover crop
- Direct seed in summer/early fall
- Control weeds throughout stand life
- Plant conventional alfalfa (weed control options vary)

INSECT AND DISEASE MANAGEMENT
Control insects such as aphids. Manage foliar leaf diseases and Anthracnose.

NUTRIENT MANAGEMENT
Alfalfa requires a neutral soil pH for high production. Take soil and plant tissue tests to monitor macronutrients and micronutrients.

HEALTHY ALFALFA PLANT
High response or luxury supply of potassium (K), boron (B), sulfur (S) and phosphorus (P)
- Potassium (potash or K) soil test = 300 lbs or 150 ppm
- Phosphorus (P) soil test = 50 lbs or 25 ppm

Optimum soil pH is 6.8 to 7.2

STRESSED ALFALFA PLANT
High soil pH of >7.6 can cause nutrient deficiencies, such as for phosphorus (P), manganese (Mn), zinc (Zn) and copper (Cu)
- Low soil pH of <6.0 can result in poor growth, limit nodulation and require lime

Poorly drained, compacted soils that contain rock layers or hard pans can cause restricted root growth
USE COATED SEED

The most critical time for long-term stand productivity occurs within 30 days after seeding. An excellent coated seed option is GroZone® plus Advanced Coating® Zn 34% seed.

Wet spring conditions can make establishing a stand more difficult. It may be necessary to use Stamina® fungicide seed treatment to provide protection against multiple races of Aphanomyces.

GROZONE® PLUS ADVANCED COATING® ZN

Aids in producing strong, healthy seedlings for high-yielding alfalfa stands.

READING THE STAND

Evaluate alfalfa stem density to determine current productivity potential and root health to determine future yield potential. Dig up several plants from different field locations, cut into the taproot and visually assess the plant according to the photo chart below.

<table>
<thead>
<tr>
<th>Stem Density</th>
<th>Suggested Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;55</td>
<td>Stem density not limiting yield</td>
</tr>
<tr>
<td>40–55</td>
<td>Expect some yield reduction</td>
</tr>
<tr>
<td>&lt;39</td>
<td>Consider replacing stand</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plant Density</th>
<th>Plants/sq ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period</td>
<td></td>
</tr>
<tr>
<td>Within 30 days of seeding</td>
<td>25–30</td>
</tr>
<tr>
<td>Fall of seeding year</td>
<td>15–25</td>
</tr>
<tr>
<td>1st production year</td>
<td>10–15</td>
</tr>
<tr>
<td>2nd production year</td>
<td>6–10</td>
</tr>
<tr>
<td>3rd production year</td>
<td>4–6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plant Health</th>
<th>Suggested Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Root Score</td>
<td></td>
</tr>
<tr>
<td>0–2</td>
<td>Keep stand in production</td>
</tr>
<tr>
<td>2–3</td>
<td>Consider replacing stand</td>
</tr>
<tr>
<td>3–5</td>
<td>Rotate stand out of production</td>
</tr>
<tr>
<td>1</td>
<td>Healthy root</td>
</tr>
<tr>
<td>2</td>
<td>Some root discoloration</td>
</tr>
<tr>
<td>3</td>
<td>Moderate root discoloration and rot</td>
</tr>
<tr>
<td>4</td>
<td>Significant root discoloration and rot</td>
</tr>
<tr>
<td>5</td>
<td>Greater than 50% root discoloration</td>
</tr>
<tr>
<td>6</td>
<td>Dead root</td>
</tr>
</tbody>
</table>

HARVEST AND STORE PROPERLY

Wheel traffic and compacted soil can reduce yields. Minimize leaf loss from field to storage and minimize shrinkage from storage to feedout. Up to 28 percent of yield can be lost during the harvesting process. Damage resulting from harvest traffic reduces crop regrowth and can cause yield loss.

- Leaves are typically greater than 400 Relative Forage Quality (RFQ) and stems can be less than 100 RFQ.
- Mechanically condition stems and use a wide swath.
- Use a forage inoculant for silage and a preservative acid for dry baled hay.
- Minimize ash content at harvest. Ash provides no nutritional value and can negatively impact fiber digestibility.

**HARVXTRA® ALFALFA CHANGES THE GAME**

HarvXtra® alfalfa with Roundup Ready® Technology is the first genetically enhanced alfalfa trait developed to maximize quality by reducing lignin when compared to conventional breeding.

**FORAGE QUALITY ADVANTAGE**
- Maintain current harvest schedules to obtain higher forage quality potential.
- Provide feed that is 14 to 18 percent higher in NDFD or RFQ.
- For the dairy or livestock producer: increased forage digestibility may support increased dry matter intake and promote more milk production or weight gain.

**HARVEST FLEXIBILITY**
- Increased flexibility in harvest timing to avoid weather delays and equipment breakdowns.
- Maximize the growing season and value potential of each harvest to help meet farm goals.
- Potential for increased yield with more consistent forage quality across cuttings with delayed harvest.

**DELAYED HARVEST**
- Reduce harvest frequency and possibly eliminate a cutting each year.
- Can provide more than 20 percent higher yield potential over the life of the stand.
- Cutting at greater than 30-day intervals is less stressful on stands and may provide additional plant health and stand persistence.

Due to factors outside of Forage Genetics International’s (FGI) control, such as weather, crop production patterns and other factors, results to be obtained, including but not limited to yields or financial performance, cannot be predicted or guaranteed by FGI. Results are based upon FGI controlled tests, field trials and public trials. Results may vary.

Do not export Roundup Ready® Alfalfa seed or crop, including hay or hay products, to China pending import approval. In addition, due to the unique cropping practices do not plant Roundup Ready® Alfalfa in Imperial County, California, pending import approvals and until Forage Genetics International, LLC (FGI) grants express permission for such planting. 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.

Growers must direct any product produced from HarvXtra® Alfalfa with Roundup Ready® Technology is subject to a Seed and Feed Use Agreement, noting that this technology can only be used on farm or otherwise be used in the United 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 in China and until Forage Genetics International, LLC (FGI) grants express permission for such planting. 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.

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HarvXtra® is a registered trademark of Forage Genetics International, LLC. HarvXtra® Alfalfa with Roundup Ready® Technology is enabled with Technology from The Samuel Roberts Noble Foundation, Inc.
PROVEN BENEFITS OF CROPLAN® HARVXTRA® ALFALFA

ACID DETERGENT LIGNIN (ADL) — ALSO KNOWN AS LIGNIN CONTENT

INCREASE NEUTRAL DETERGENT FIBER DIGESTIBILITY (NDFD) OR FORAGE YIELD

DATA IS AN AVERAGE OF CROPLAN® HarvXtra® HarvaTron, MegaTron and Driver varieties harvested in 2014 and 2015 trials from Nampa, Idaho; Touchet, Wash.; Boone, Iowa; West Salem, Wis.; and Mt. Joy, Pa.

FAST REGROWTH, HIGH YIELD POTENTIAL

HVX DRIVER
Multifoliate Alfalfa
Fall Dormancy: 4.0
Winterhardiness: 2.0

Yield
Persistence
Feed Quality
Grazing Tolerance
Baled Hay (Drydown)
Haylage (Regrowth)
5 4 3 2 1

- Maximize harvest flexibility for excellent yield and forage quality potential with the HarvXtra® alfalfa trait
- Exceptional ability to perform well across multiple geographies
- Rapid regrowth after cutting
- Stacked with Roundup Ready® Technology for unsurpassed weed control with excellent crop safety
- Available in GroZone® plus Advanced Coating® ZN plus Stamina® fungicide seed treatment to provide additional early plant health

DATA IS AN AVERAGE OF CROPLAN® HarvXtra® HarvaTron, MegaTron and Driver varieties harvested in 2014 and 2015 trials from Nampa, Idaho; Touchet, Wash.; Boone, Iowa; West Salem, Wis.; and Mt. Joy, Pa.

FALL DORMANCY/WINTERHARDINESS
• Fall dormancy (FD) and winterhardiness (WH) are important considerations for alfalfa seed selection.
• A higher FD number = higher yield potential.
• A lower WH number = more cold tolerance and stand persistence.
• Breeding and selecting for highest yield potential and persistence provides highly productive stands year after year.

DATA IS AN AVERAGE OF CROPLAN® HarvXtra® HarvaTron, MegaTron and Driver varieties harvested in 2014 and 2015 trials from Nampa, Idaho; Touchet, Wash.; Boone, Iowa; West Salem, Wis.; and Mt. Joy, Pa.

KEY
Scale
1 = Excellent
2 = Above Average
3 = Average
4 = Below Average
5 = Not Recommended
**LEGENDARY XHD**  
**Multifoliare Alfalfa**  
Fall Dormancy: 3.2  
Winterhardiness: 1.2

- The LegenDairy line has improved forage quality through three decades of conventional breeding selection
- Exceptional winterhardiness; great choice for producers in northern growing regions, moves well east to west
- Excellent salt-tolerance ratings in germination tests and outstanding performance in stand persistence trials
- Above-average yield potential; suited for 3- to 4-cut baled hay or haylage flexible harvest systems
- Great choice for producers who prefer mixed alfalfa-grass stands
- Available in GroZone® plus Advanced Coating® ZN plus Stamina® fungicide seed treatment to provide additional early plant health; also in Apex® Green coating for OMRI Listed® organic use, and in uncoated seed

**HARVXTRA® WITH ROUNDUP READY® TECHNOLOGY**

**CONVENTIONAL BREEDING FOR FORAGE QUALITY**
- For more than three decades, alfalfa breeders have used conventional alfalfa breeding techniques to select for improved forage quality. Varieties developed using this method include the LegenDairy.
- These varieties show an incremental improvement in forage quality when compared to non-selected varieties.
- Independent of breeding efforts, fall dormancy (FD) has a significant impact on forage quality. – More dormant cultivars are higher in forage quality. For example, FD3 > FD5.
- It is important to compare forage quality between varieties of similar fall dormancy.

**KEY**

<table>
<thead>
<tr>
<th>Scale</th>
<th>Resistance Ratings</th>
<th>Feed Quality Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = Excellent</td>
<td>S = Susceptible (0–5%)</td>
<td>HarvXtra® products</td>
</tr>
<tr>
<td>2 = Above Average</td>
<td>LR = Low Resistance (6–14%)</td>
<td>are represented on a separate scale than</td>
</tr>
<tr>
<td>3 = Average</td>
<td>HR = Moderate Resistance (15–30%)</td>
<td>Roundup Ready® and conventional alfalfa</td>
</tr>
<tr>
<td>4 = Below Average</td>
<td>R = Resistance (31–51%)</td>
<td>varieties and are signified with an</td>
</tr>
<tr>
<td></td>
<td>HR = High Resistance (&gt;50%)</td>
<td>“HR.” Because there is a significant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>improvement in forage quality,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HarvXtra® alfalfa products can only</td>
</tr>
<tr>
<td></td>
<td></td>
<td>be compared to other HarvXtra® alfalfa products.</td>
</tr>
</tbody>
</table>
CORN SILAGE

Satisfy nutrient needs

WinField United representatives can help you select the right hybrids, diagnose pest problems and determine plant nutrition needs throughout the season. We will work with you to help optimize the level of quality nutrients available for your beef or dairy cows.

KEY TAKEAWAYS

1. Select Data Proven silage products.
2. Consider hybrids based on forage nutrition needs.
3. Properly harvest and store your crop.
4. Choose SilageFirst® hybrids for high tonnage and high quality potential.
SELECT DATA PROVEN SILAGE PRODUCTS

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 nearly 200 Answer Plot® locations in the United States. After harvest, data are compiled and summarized over multiple years and locations to provide a performance snapshot.
- Summary data are compiled and computed using the University of Wisconsin MILK2006 milk-per-ton value, then plotted on a scatter graph to show the relationship between quality and tonnage potential for each hybrid.
- For most operations, selection will be based on hybrids in the high-quality, high-tonnage quadrant to ensure optimal production potential.
- CROPLAN® corn silage hybrids that consistently perform in this high-quality and high-tonnage quadrant are marked with the Data Proven logo on pages 44 through 46.

CONSIDER HYBRIDS BASED ON FORAGE NUTRITION NEEDS

Considering both nutrient requirements and agronomic factors during hybrid selection is an important risk-management tool for corn silage products.

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.

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. For example, this CHT chart shows how hybrids A, B and C are projected to perform at high and low plant populations when compared to the following categories*:

- Yield
- NDFD
- Milk per acre
- Starch

*Other categories are available.
HARVEST TIMING AND STORAGE

The average farmer loses 15 percent or more of a total corn silage crop yield each year due to dry matter loss at harvest and during storage. Take these steps to help minimize losses and to ensure optimal forage quality at feedout.

- Harvest corn silage when the crop is between 63 and 69 percent moisture.
- Apply inoculant.
- Pack densely with the correct weight.
- Cover with two layers of plastic to seal and protect from spoilage.

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.
- They work well when harvested first and floury-leafy hybrids are harvested last.
- These are appropriate for feeding after the 120+ day post ensiling when they reach optimum starch and fiber digestibility.
- They provide the energy and tonnage requirements to optimize weight gain for beef cattle.

Floury-leafy

High-energy/High-tonnage
**SILAGEFIRST™ HYBRIDS: THE RIGHT COMBINATION FOR HIGH TONNAGE AND HIGH QUALITY**

Leafy hybrids provide increased starch and fiber digestibility, while slower plant drydown at harvest offers minimal ensiling time prior to feedout.

Dual-purpose hybrids offer more flexibility at harvest and feedout as silage or grain, but also provide a balance for early/late harvest and feedout schedules when used with leafy hybrids.

---

**DS93RR**  
93 day 2850 CHU

- New floury x leafy silage-only hybrid with very high tonnage potential
- Much better replacement for DS 93 with higher tonnage, digestibility and agronomics
- White-cob hybrid with large semi-flexed ears that can handle lower populations
- Highly responsive to nitrogen and fungicide applications

**S4100VT3P/RIB**  
Leafy 101 day 2975 CHU

- New leafy proven hybrid, plot winner for two years for both tonnage and quality
- Tall, white-cob hybrid that does best in medium-high populations
- Tough, very adaptable hybrid; excels with high nitrogen

---

**184RR**  
81 day 2450 CHU

- Flint-dent hybrid for cool, early-maturity areas
- Tall, aggressive-growing hybrid; excellent silage yield potential; must chop before 50% milkl ine or grain is difficult to crack
- Large, flex ear for wide adaptation to all soils and populations

**2123VT2P/RIB**  
81 day 2450 CHU

- Consistent yield potential and quick out of the ground
- Very early flowering product with fast drydown
- Mostly fixed, girthy ear with good tip fill
- Excellent moisture stress tolerance in cool environments

---

**2417VT2P/RIB**  
85 day 2600 CHU

- High-yield-potential product with excellent defense
- Excellent emergence
- Good heat and moisture stress tolerance with proper nutrition
- Girthy ear with good flex

---

**KEY**

- **Scale**  
  1 = Excellent  
  2 = Above Average  
  3 = Average  
  4 = Below Average   
  5 = Not Recommended

- **TONNAGE/NDFD Ratings**  
  1–2 = H (High Response)  
  3–4 = M (Moderate Response)  
  5 = L (Low Response)  
  TBD = To be tested in 2017.

- **Hybrids best location**  
  W = Western Hybrids  
  E = Eastern Hybrids

See page 42.
### Corn Silage

**2845 VT2P/RIB**  
88 day 2675 CHU

- **Seedling Vigor**
- **Drought Tolerance**
- **Root Strength**
- **Tonnage Potential**
- % IVD
- Milk/Acre
- % NDFD
  
| 5 | 4 | 3 | 2 | 1 |

**TONNAGE vs. NDFD**

- Low
- Mod
- High

- NDFD (%)

- **Notes:**
  - Excels in better soils with high nitrogen; not for corn-on-corn rotations
  - Best in 85 to 90 RM at medium to medium-high populations; not recommended later than 100 RM for early silage
  - Takes the heat in medium and heavy soils; keep out of drought-prone sandier soils
  - Plant early, great emergence in cooler soils; excellent conservation-till hybrid

---

**3533 VT2P/RIB**  
95 day 2650 CHU

- **Seedling Vigor**
- **Drought Tolerance**
- **Root Strength**
- **Tonnage Potential**
- % IVD
- Milk/Acre
- % NDFD
  
| 5 | 4 | 3 | 2 | 1 |

**TONNAGE vs. NDFD**

- Low
- Mod
- High

- NDFD (%)

- **Notes:**
  - Defensive companion hybrid to the 99 series
  - Flex-ear type and drought tolerant; great choice for lighter soils
  - Produces great silage in soils with average fertility and above-average nitrogen
  - High response to fungicides

---

**3611 SS/RIB**  
96 day 2875 CHU

- **Seedling Vigor**
- **Drought Tolerance**
- **Root Strength**
- **Tonnage Potential**
- % IVD
- Milk/Acre
- % NDFD
  
| 5 | 4 | 3 | 2 | 1 |

**TONNAGE vs. NDFD**

- Low
- Mod
- High

- NDFD (%)

- **Notes:**
  - Very offensive, high-yield-potential product
  - Best kept in rotation
  - Responds to increased fertility
  - Optimum performance with moderate populations and good soil moisture

---

**3699 VT3P/RIB**  
(RR) 96 day 2875 CHU

- **Seedling Vigor**
- **Drought Tolerance**
- **Root Strength**
- **Tonnage Potential**
- % IVD
- Milk/Acre
- % NDFD
  
| 5 | 4 | 3 | 2 | 1 |

**TONNAGE vs. NDFD**

- Low
- Mod
- High

- NDFD (%)

- **Notes:**
  - Excellent emergence and seedling vigor; works well in rotation or corn-on-corn
  - Good heat and moisture stress tolerance; above-average Goss’s wilt tolerance
  - Very good root system for all soil types
  - Very consistent hybrid year over year

---

**3899 VT2P/RIB**  
96 day 2875 CHU

- **Seedling Vigor**
- **Drought Tolerance**
- **Root Strength**
- **Tonnage Potential**
- % IVD
- Milk/Acre
- % NDFD
  
| 5 | 4 | 3 | 2 | 1 |

**TONNAGE vs. NDFD**

- Low
- Mod
- High

- NDFD (%)

- **Notes:**
  - Excellent roots and very good late-season plant intactness
  - Flowers later, but has excellent heat and moisture stress tolerance
  - High-yielding product for all environments; works well in both heat-driven or cool growing seasons
  - Excellent yield potential, especially in high-yield environments, but excels in low-yielding environments as well

---

**4099 SS/RIB**  
100 day 2950 CHU

- **Seedling Vigor**
- **Drought Tolerance**
- **Root Strength**
- **Tonnage Potential**
- % IVD
- Milk/Acre
- % NDFD
  
| 5 | 4 | 3 | 2 | 1 |

**TONNAGE vs. NDFD**

- Low
- Mod
- High

- NDFD (%)

- **Notes:**
  - Same female as 3399 and 3699 with a male related to SS version of 3899
  - Tall racehorse-type hybrid that moves west and south better than 3737
  - Works well in hot or cool growing seasons
  - Excellent yield potential, roots and late-season harvest appearance

---
**TONNAGE vs. NDFD**

- **4199SS/RIB**
  - **Seedling Vigor**
  - **Drought Tolerance**
  - **Root Strength**
  - **Tonnage Potential**
  - **% IVD**
  - **Milk/Acre**
  - **% NDFD**
  - **TONNAGE vs. NDFD**
    - Tonnage (Yield/A)
      - High
      - Mod
      - Low
    - NDFD (%)
      - High
      - Mod
      - Low

- **5887VT3P/RIB**
  - **Seedling Vigor**
  - **Drought Tolerance**
  - **Root Strength**
  - **Tonnage Potential**
  - **% IVD**
  - **Milk/Acre**
  - **% NDFD**

- **5415SS/RIB**
  - **Seedling Vigor**
  - **Drought Tolerance**
  - **Root Strength**
  - **Tonnage Potential**
  - **% IVD**
  - **Milk/Acre**
  - **% NDFD**

**Key**

- **Scale**
  1 = Excellent
  2 = Above Average
  3 = Average
  4 = Below Average
  5 = Not Recommended

- **TONNAGE/NDFD Ratings**
  - 5 = L (Low Response)
  - 3 = M (Moderate Response)
  - TBD = To be tested in 2017.

- **Hybrids best location**
  - Western Hybrids
  - Eastern Hybrids

- **See page 42.**

- **Notes:**
  - Solid agronomic package
  - Excellent heat and drought tolerance
  - Offensive product that also performs well in lower-yielding environments
  - Tremendous early-season vigor
  - Multiyear proven hybrid with high grain ratio; performs well in the East and West
  - Great for Southwestern Ontario, takes the heat; good greensnap and Goss's wilt ratings
  - Semi-flex hybrid performs well at medium to medium-high populations for drier areas; above-average starch
  - Needs high nitrogen; avoid corn-on-corn situations
  - Tall silage hybrid with great late staygreen agronomics
  - Tough hybrid; flexed ear to handle droughty soils and corn-on-corn acres
  - High-starch hybrid; doesn't need high populations
  - Excellent disease package, including for GLS and Goss's wilt
  - At the top of multiyear silage trials at this maturity
  - Excellent silage hybrid for higher populations on heavier soils because of its great roots, semi-flex ear and superior drought tolerance
  - Superior hybrid for irrigated and corn-on-corn acres; does not like Goss's wilt
  - Has a high grain-to-stover ratio; great choice for beef or high-starch feed
## Calibrate® Starch Rating
Relative rumen digestibility of grain starch
- **S** = Slow
- **M** = Moderate
- **F** = Fast
Ratings based on 2016 grain samples.

## Calibrate® Fiber Rating
Relative rumen digestibility of fiber
- **S** = Slow
- **M** = Moderate
- **F** = Fast
Ratings based on 2016 grain samples.

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

## Ear Height
- **H** = High
- **M** = Medium
- **L** = Low

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

## Flower Date
- **L** = Late
- **M** = Medium
- **E** = Early

## RTP/RTN/RTCC/RTF Ratings
- **L** = Low Response
- **M** = Moderate Response
- **H** = High Response
- **TBD** = To be tested in 2017.

## Response to Continuous Corn (RTCC)

## Response to Nitrogen (RTN)

## Response to Population (RTP)

## Response to Fungicide (RTF)

## Response to Continuous Corn (RTCC)

## Seedling Vigor

## Kernel Rows

## Root Strength

## Relative Maturity

## CHU

## TON

## Key
- **1** Plant Height
- **2** Ear Height
- **3** Ear Flex
- **4** Flower Date
- **5** RTP/RTN/RTCC/RTF Ratings
- **6** Response to Continuous Corn (RTCC)
- **7** Response to Nitrogen (RTN)
- **8** Response to Population (RTP)
- **9** Response to Fungicide (RTF)
- **10** Response to Continuous Corn (RTCC)
- **11** Seedling Vigor
- **12** Kernel Rows
- **13** Root Strength
- **14** Relative Maturity
- **15** CHU
- **16** TON

### Data Proven Brand

<table>
<thead>
<tr>
<th>Variety</th>
<th>Scale</th>
<th>Plant Height</th>
<th>Ear Height</th>
<th>Ear Flex</th>
<th>Flower Date</th>
<th>RTP/RTN/RTCC/RTF</th>
<th>Response to Continuous Corn (RTCC)</th>
<th>Seedling Vigor</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS93RR</td>
<td>93</td>
<td>T-M-L</td>
<td>SF</td>
<td>L</td>
<td>14-16</td>
<td>M-H-H-H</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>S4100VT3P/RIB*</td>
<td>101</td>
<td>T-M</td>
<td>SF</td>
<td>M</td>
<td>16-18</td>
<td>N/A-N/A-N/A-M</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

### Western Hybrids

<table>
<thead>
<tr>
<th>Variety</th>
<th>Scale</th>
<th>Plant Height</th>
<th>Ear Height</th>
<th>Ear Flex</th>
<th>Flower Date</th>
<th>RTP/RTN/RTCC/RTF</th>
<th>Response to Continuous Corn (RTCC)</th>
<th>Seedling Vigor</th>
</tr>
</thead>
<tbody>
<tr>
<td>W 184RR</td>
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<tr>
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<td>M-FX</td>
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<tr>
<td>3399SS/RIB* [VT2P/RIB]*</td>
<td>94</td>
<td>M-SF</td>
<td>M</td>
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<tr>
<td>3533VT2P/RIB*</td>
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<td>M-L-H-H</td>
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<tr>
<td>3699VT3P/RIB* [RR]</td>
<td>96</td>
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<td>M-H-SF</td>
<td>M</td>
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<td>H-M-M-M</td>
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<tr>
<td>3611SS/RIB* [VT2P/RIB]*</td>
<td>96</td>
<td>M-T</td>
<td>M-SF</td>
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<td>16-18</td>
<td>M-H-L-M</td>
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<tr>
<td>3899VT2P/RIB*</td>
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<td>M-H-SF</td>
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<td>5415SS/RIB*</td>
<td>107</td>
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<td>2</td>
</tr>
<tr>
<td>588VT3P/RIB* [VT2P/RIB]*</td>
<td>108</td>
<td>M-FL</td>
<td>M</td>
<td>M</td>
<td>14-18</td>
<td>L-H-L-H</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>
These ratings reflect trends observed in research trials that change with variations in rainfall, temperature, crop production patterns and other factors. Ratings on new hybrids are based on limited data and may change as more data is collected.

*Follow IRM guidelines and refuge configurations outlined on pages 56-57 to preserve the benefits and insect protection of these technology crops.
INNOVATIVE TECHNOLOGY

Traits include SmartStax® corn technology with the broadest spectrum of control for above- and below-ground insects, along with herbicide tolerance.

CORN TRAITS

- Farmers choose their level of insect protection, field by field.
- SmartStax® RIB Complete® corn blend offers the broadest spectrum of above- and below-ground insect protection with the simplicity and convenience of a single-bag refuge solution. Two modes of action against corn earworm help optimize yield potential.

- Genuity® VT Triple PRO® RIB Complete® corn blend provides advanced above- and below-ground insect protection with two modes of action against corn earworm for increased yield potential and improved grain quality.
- VT Double PRO® RIB Complete® corn blend contains the first double-stacked trait with dual modes of action against above-ground insects and maximum protection against corn earworm. This extra protection helps increase yield potential while providing the simplicity and convenience of a single-bag refuge solution.

BELOW-GROUND CONTROL

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

ROUNDUP READY® 2 TECHNOLOGY AND LIBERTYLINK® TRAITS TOGETHER

In addition to above- and below-ground 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

- It includes a 5 percent 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.

ABOVE-GROUND CONTROL

SmartStax® technology controls above-ground insects by uniting Bacillus thuringiensis (Bt) proteins with multiple modes of action from Genuity® 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.
### Genuity® VT Triple PRO® RIB Complete® CORN BLEND

Genuity® VT Triple PRO® RIB Complete® corn blend has 10 percent refuge seed in every bag, which means no more calculating or planting a separate, structured refuge, while control of ear-feeding insects with Genuity® VT Triple PRO® RIB Complete® corn blend can provide higher yield potential and improved grain quality.

### VT Double PRO® RIB Complete® CORN BLEND

VT Double PRO® RIB Complete® corn blend also provides dual modes of action against above-ground pests and a single mode of action against below-ground pests. Genuity® VT Triple PRO® corn also gives farmers in cotton-growing areas the opportunity to reduce their refuge acres from 50 percent to 20 percent, which can help increase farm profitability.

Years of product testing and research have led to Genuity® VT Triple PRO® RIB Complete® corn blend, which controls a broader spectrum of above-ground insects, such as corn earworm, corn borer and fall armyworm.

Control of ear-feeding insects with Genuity® VT Triple PRO® RIB Complete® corn blend can provide higher yield potential and improved grain quality.

### 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 Genuity® traits, allowing farmers to plant an entire field with just one product. Farmers will no longer need to plant a structured refuge when they use RIB Complete® corn blend products.
Whether you follow a pre- and post-emergent spray program or only spray post-emergence, 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 post-emergent herbicides can cause.

**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 Genuity® 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 GENUITY® ROUNDUP READY 2 YIELD® VARIETIES**

![Graph showing cumulative number of Genuity® Roundup Ready 2 Yield® varieties](chart)

Monsanto Company is a member of Excellence Through Stewardship® (ETS). Monsanto products are commercialized in accordance with ETS Product Launch Stewardship Guidance, and in compliance with Monsanto’s Policy for Commercialization of Biotechnology-Derived Plant Products in Commodity Crops. Certain 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. Growers should refer to http://www.biotradestatus.com/ for any updated information on import country approvals. Excellence Through Stewardship® is a registered trademark of Biotechnology Industry Organization.

B.t. products may not yet be registered in all states. Check with your Monsanto 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. Always read and follow IRM requirements.

**ALWAYS READ AND FOLLOW DIRECTIONS FOR USE ON PESTICIDE LABELING.** 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. ONLY USE FORMULATIONS THAT ARE SPECIFICALLY LABELED FOR SUCH USES AND APPROVED FOR SUCH USE IN THE STATE OF APPLICATION. May not be approved in all states. 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. Roundup Ready 2 Xtend® soybeans contain genes that confer tolerance to glyphosate and dicamba. Glyphosate will kill crops that are not tolerant to glyphosate. Dicamba will kill crops that are not tolerant to dicamba. Contact your Monsanto dealer or refer to Monsanto’s Technology Use Guide for recommended weed control programs.

Genuity®, RIB Complete and Design*, RIB Complete®, Roundup Ready 2 Technology and Design®, Roundup Ready®, Roundup®, Roundup Ready 2 Xtend®, Genuity®, Roundup Ready 2 Yield®, Roundup Ready PLUS®, SmartStax and Design®, SmartStax®, SR Design®, VT Double PRO® and VT Triple PRO® VaporGrip™, and XtendiMax™ are trademarks of Monsanto Technology LLC. LibertyLink and the Water Droplet Design® is a registered trademark of Bayer. Respect the Refuge and Corn Design® and Respect the Refuge® are registered trademarks of National Corn Growers Association. All other trademarks are the property of their respective owners.

Before opening a bag of seed, be sure to read and understand the stewardship requirements, including applicable refuge requirements for insect resistance management, for the biotechnology traits expressed in the seed set forth in the technology agreement that you sign. By opening and using a bag of seed, you are reaffirming your obligation to comply with those stewardship requirements.
**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, for more high-quality grain. By controlling major leaf-, stalk- and ear-feeding corn insects, the Agrisure Viptera® trait offers better crop stand and lower levels of disease, resulting in increased yield and profit potential.

**Agrisure Viptera® 3111**

Above- and below-ground insect control.

---

**AGRISURE VIPTERA® TRAIT PERFORMANCE ON WESTERN BEAN CUTWORM®**

Hybrid with the Agrisure Viptera® trait

Hybrid without the Agrisure Viptera® trait

Corn from Sterling, Colorado

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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 percent confidence interval of 6.8 percent to 10.5 percent 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 Genuity® Roundup Ready 2 Yield® products (with a minimum of 30 comparisons per product) versus competitive Pioneer® and NK® brands with Roundup Ready® by state.

ACHIEVE REAL YIELDS WITH THE LIBERTYLINK® SYSTEM

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

Every missed weed can impact yield. Liberty® herbicide is simply better weed control proven to effectively handle tough-to-control and resistant weeds.

- Only working nonselective herbicide for grasses and broadleaf weeds.
- S.T.O.P. Weeds with Liberty® application guidelines to best manage tough-to-control and resistant weeds.
- Simple to use, low-risk and nonvolatile chemistry providing peace of mind.
- 97% satisfaction rating among growers around the country.

With more than 60 million acres of canola, corn, cotton and soybeans enabled with the LibertyLink® trait, growers can spray powerful Liberty®, now backed by the Liberty Weed Control Guarantee.

LIBERTYLINK® SYSTEM

LIBERTYLINK® SOYBEANS

The LibertyLink® system is a simply better solution combining high-performing genetics with excellent weed control for high yield potential. With more than 60 million acres of soybeans, corn, cotton and canola now having the LibertyLink trait, growers can spray powerful Liberty®, the only working nonselective herbicide to handle tough-to-control and resistant weeds, including Palmer amaranth, giant ragweed, kochia, waterhemp and marestail.

LIBERTYLINK® CORN

The LibertyLink® system enables powerful Liberty®, the only working nonselective herbicide that is effective on tough-to-control grasses and broadleaves, 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 a simply better solution built upon high-performing genetics and excellent weed control that delivers real yield.

LIBERTY® HERBICIDE

The active ingredient in Liberty is a Group 10 herbicide, which is the only broad-spectrum herbicide that effectively controls grasses and broadleaf weeds, and it has no known resistance in U.S. broadacre crops.

To learn more about the Guarantee and guidelines for eligibility, see your Bayer representative or go to www.LibertyGuarantee.Bayer.us.

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**CROPLAN® TRAIT LETTERING FOR CORN HYBRIDS**

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

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<thead>
<tr>
<th>Key</th>
<th>Hybrid</th>
<th>Trait</th>
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<tr>
<td>SS/RIB</td>
<td>SmartStax® RIB Complete® Corn Blend; GENSS</td>
<td>5% RIB, YieldGard® VT Rootworm, Herculex® RW, YieldGard VT® PRO Corn Borer and Herculex® protection, Roundup Ready® 2 Technology and LibertyLink®</td>
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<td>VT3P/RIB</td>
<td>Genuity® VT Triple PRO® RIB Complete® Corn Blend; GENVT3P</td>
<td>10% RIB, YieldGard® VT Rootworm and YieldGard VT® PRO Corn Borer protection, Roundup Ready® 2 Technology</td>
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</tr>
<tr>
<td>RR</td>
<td>Roundup Ready® Corn 2; RR2</td>
<td>Roundup Ready® Corn 2</td>
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<tr>
<td>AS3111</td>
<td>Agrisure Viptera® 3111</td>
<td>Agrisure® Corn Borer, Rootworm and Broad Lepidopteran protection, Glyphosate Tolerant and LibertyLink®</td>
<td>![AS3111 Logo]</td>
</tr>
<tr>
<td>GT</td>
<td>Agrisure® GT</td>
<td>Agrisure® Glyphosate Tolerant</td>
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</table>
PROPER MANAGEMENT PROTECTS TECHNOLOGY’S VALUE

THINK BEFORE YOU USE BIN-RUN SEED

YIELD LOSS
Genuity® Roundup Ready 2 Yield® soybean seed outyielded bin-run Roundup Ready® soybeans by 6.1 bushels per acre.1

CLEANOUT LOSS
Loss of seed, or shrink, occurs during seed cleaning and handling processes for bin-run seed.

LOST INCOME
Income is lost by selling a bushel of soybeans that is saved for planting the next year.

SOYBEAN AND PIRACY
Seed containing a patented trait can only be used to plant a single commercial crop from which seed cannot be saved and replanted. Examples of seed containing a patented trait include but are not limited to Genuity® Roundup Ready 2 Yield® soybeans, Roundup Ready 2 Xtend® soybeans. Additional information and limitations on the use of these products are provided in the Monsanto Technology Stewardship Agreement, the Monsanto Technology Use Guide, and 2016 Technology Use Guide Addendum to include Roundup Ready 2 Xtend® soybeans. U.S. patents for Monsanto technologies can be found at the following webpage:

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, Monsanto Technology LLC, 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.

CORN REFUGE OPTIONS
The refuge on each farm may be arranged in a number of configurations. These options offer the flexibility to easily incorporate an effective corn refuge into farm operations. Options include the following:

• Plant a corn refuge within or adjacent to each traited corn field.
• Plant a corn refuge as a block within a traited corn field.
• Split the planter to alternate at least four consecutive rows of corn refuge with traited corn.
• Plant field perimeters or end rows to a corn refuge.

HIGH VALUE OF NEW BRANDED SEED

LATEST TECHNOLOGY
• Highest-yielding soybean technology available.
• More soybean trait products anticipated to come from Monsanto in the next several years.2
• Leading seed treatment options.

CUSTOMER SERVICE
• Dealer agronomic support before and after the sale.
• Replant policy support.
• Convenient packaging and delivery.

RELIABLE GERMINATION AND QUALITY
• Rigorously tested for quality and meets U.S. Federal Seed Act requirements.
• Free of seedborne diseases.
• Properly stored and conditioned.

1 First year results of 2-year protocol study with independent cooperators across 8 locations examining the yield differences of saved Roundup Ready® soybeans versus newly purchased Roundup Ready 2 Yield® soybeans.
2 Pending regulatory approvals.
3 Provided as a summary only. Farmers must read the IRM/Grower Guide prior to planting for important information on planting and insect resistance management.
4 Traited = Bt, RW or Bt/RW
5 All refuge configurations require a minimum of four rows.
6 Provided as a summary only. Farmers must read the IRM/Grower Guide prior to planting.
7 SmartStax® RIB Complete® corn is a blend of 95% traited seed and 5% refuge seed, interspersed within the bag.
8 SmartStax® RIB Complete® does not require a separate structured refuge in corn-growing areas.

Before opening a bag of seed, be sure to read and understand the stewardship requirements, including applicable refuge requirements for insect resistance management, for the biotechnology traits expressed in the seed set forth in the technology agreement that you sign. By opening and using a bag of seed, you are reaffirming your obligation to comply with those stewardship requirements.

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

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 Bt products, such as Genuity® VT Triple PRO® (20 acres of refuge for every 80 acres of Bt)
  - 5% only for SmartStax® and VT Double PRO® (5 acres of refuge for every 95 acres of Bt)

- The Cotton-Growing Area
  - 20% only for SmartStax®, Genuity® VT Triple PRO® and VT Double PRO® (20 acres of refuge for every 80 acres of Bt)

2 REFUGE LOCATION
Plant the required refuge within each field that contains Bt 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 Bt 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-Bt foliar insecticide, you may have to treat the Bt technology in a similar manner. Growers must read the IRM/Grower Guide for complete treatment options.

REFUGE REQUIREMENTS FOR BIOTECH CORN PRODUCTS

<table>
<thead>
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<th>% Non-Bt Refuge</th>
<th>Configurations</th>
<th>Refuge Location</th>
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<tr>
<td>SmartStax® RIB Complete® Corn Blend®</td>
<td>5% in-the-bag</td>
<td>—</td>
</tr>
<tr>
<td>VT Double PRO® RIB Complete® Corn Blend</td>
<td>5% in-the-bag</td>
<td>—</td>
</tr>
<tr>
<td>Genuity® VT Triple PRO® Corn</td>
<td>20% corn-growing areas</td>
<td>Block, Perimeter, Strips, Adjacent</td>
</tr>
<tr>
<td>VT Double PRO® Corn</td>
<td>5% corn-growing areas</td>
<td>Block, Perimeter, Strips, Adjacent</td>
</tr>
<tr>
<td>Agrisure Viptera®</td>
<td>20% corn-growing areas</td>
<td>Block, Perimeter, Strips, Adjacent</td>
</tr>
</tbody>
</table>
PROTECT AND NURTURE CROPS WITH WINFIELD® UNITED PRODUCTS

Turn to top-quality WinField® United crop protection and plant nutrition products for optimal yield potential and protection for your seed investment.

WINFIELD® UNITED ADJUVANTS

WinField® United adjuvants help optimize crop protection performance for a wide range of conditions. WinField® United adjuvants include drift control and deposition aids, oils, surfactants and spreader stickers, water conditioners, and utility products.

InterLock® adjuvant helps deliver more spray to its intended target to lock down your investment. Spray coverage is optimized while evaporation and drift are minimized. Coverage is greatly improved throughout the canopy for better weed, insect and disease control. InterLock® adjuvant can be used with all crop protection products and spray tips.

WINFIELD® UNITED PLANT NUTRIENTS

WinField® United plant nutrition products promote season-long healthy plants and optimal yield potential. The WinField® United plant nutrient line includes proprietary MAX-IN® technology for increased nutrient uptake.

Ascend® plant growth regulator products accelerate leaf, stem and root growth for strong, healthy plants. Ascend® plant growth regulator products can be used in seed treatments, or applied in-furrow or foliar to many crops.

MAX-IN® liquid micronutrients greatly increases movement of nutrients through the leaf cuticle to internal leaf structures. This makes more of the applied nutrients available to the plant. These proven products are specially formulated to meet the nutritional needs of crops across a broad range of soil conditions, fertility programs and tillage practices.

Product line: MAX-IN® Boron, MAX-IN® Calcium, MAX-IN® Copper, MAX-IN® Magnesium, MAX-IN® Ultra Manganese, MAX-IN® Ultra ZMB®, MAX-IN® Vine and Vegetable.

Ultra-Che®

Fully chelated with EDTA, Ultra-Che® Zinc 9% EDTA micronutrients can increase nutrient efficiency and availability to plants. As an additive in liquid fertilizer, Ultra-Che® micronutrients offer flexible application options, including preplant, starter, side-dress or fertigation.

Because of factors outside of Winfield Solutions’ 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 Solutions.