

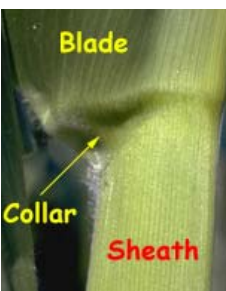


June 13, 2011

The corn and soybean crops in northern Illinois are progressing and likely to have exceeded average heat unit accumulation for the growing season to date. Corn growth stage is approaching or exceeding V8, which is considered the Grand Growth Stage. The soybean crop will start to flower and will advance to pod set as the length of the day becomes shorter. In this edition, growth staging of the corn crop; traditional corn rootworm hatch; adverse crop effects from summer storms, such as brittle snap and hail; nutrient requirements in soybeans; and the National Corn Yield Contest are discussed.

We are also very excited to update you on the industry-leading local advancement process called IMPACT™ plots—advancing the right products on the right acre for northern Illinois. Also, in 2012, *Pioneer will be the first company to offer a fully integrated in-bag rootworm refuge system.* This exciting technology that eliminates the use of soil-applied insecticide is reviewed in this edition as well. If you have any questions regarding these or other agronomic topics, contact your local Pioneer sales representative.

Many postemergence herbicide labels specify the growth stage and/or corn height required for proper application. It is important to follow these recommendations to avoid crop injury.



**Leaf collar method.** This is the most technically accurate corn development staging method. Leaf stages are defined by counting only those leaves that are fully emerged from the whorl and have a visible leaf collar. The leaf collar is the “band” located at the base of an exposed leaf blade, near the spot where the leaf blade comes in contact with the stem of the plant. Leaves within the whorl, not yet fully expanded with no visible leaf

collar, are not included when using the leaf staging method. Begin with the lowest leaf that has a rounded tip.

**2011 corn rootworm hatch.** By the time you receive this newsletter we will be well into the corn rootworm (CRW) egg hatch and you can begin scouting for CRW larval feeding. A range of 684 to 767 GDUs are required for 50% egg hatch. By early June we had accumulated enough GDUs for hatch to begin.



Now is the time to begin digging corn plants of any non-rootworm-resistant corn hybrid to check soil insecticide efficacy. Please consult your local Pioneer sales representative for information on corn rootworm management and consider

industry-leading corn rootworm protection in Pioneer® brand Herculex® RW, Herculex® XTRA, and Optimum® AcreMax® products.

**Brittle snap**, or breakage of corn stalks by violent winds, is a concern during rapid growth and stalk elongation in corn. The two most common periods for brittle snap damage are:

- V5 to V8 - when the growing point is just emerging from the soil line
- V12 to R1 - two weeks prior to tasseling until just after silking.

Many factors affect the severity of brittle snap injury, including growing conditions, field geography, crop management practices, soil type, and hybrid genetics. Most often the risk is highest during early-morning storms when the plants are turgid. Growth regulator herbicides can also increase the incidence and severity of brittle snap injury



by impacting cell division in the nodal area and increasing stalk brittleness. Best practices for managing brittle include:

- Plant a package of hybrids and maturities
- Plant a package of hybrids with varying brittle scores
- Manage herbicide applications to minimize risk
- Evaluate crop insurance options on fields planted to hybrids with increased risk of brittle snap.

When analyzing a corn crop that has been damaged by hail, the growing point needs to be checked for damage. When corn is young and the growing point is below ground, stand and yield reduction are usually minimal. If the growing point is above ground, check to make sure it is not severely bruised. It is often best to wait seven days after a hailstorm event to make accurate conclusions and to see if new growth is escaping older, damaged leaves. Hail can severely reduce corn yield potential up to the appearance of the tassel. Once pollination occurs, yield loss from hail diminishes as corn reaches maturity. Refer to the following table for estimates of corn yield reductions caused by defoliation at different growth stages.

Leaf Stage <sup>a</sup>	Percent Leaf Defoliation			
	25%	50%	75%	100%
	Approximate % Yield Loss			
7-leaf	0	2	5	9
8-leaf	0	3	6	11
9-leaf	1	4	7	13
10-leaf	11	6	9	16
11-leaf	1	7	12	22
12-leaf	2	9	16	28
13-leaf	2	10	19	34
14-leaf	3	13	25	44

<sup>a</sup>Leaf stage according to the "droopy leaf" method. The corresponding leaf stage according to the leaf collar method would be approximately 2 less than the "droopy leaf" values shown above (e.g., 7-leaf-V5).  
Adapted from the National Crop Insurance Association's "Corn Loss Instruction" (Rev. 1994).  
Table from Nielsen, Purdue.

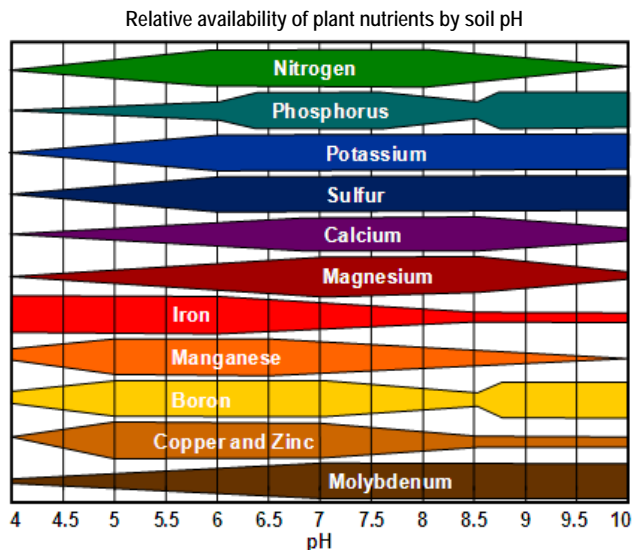
Soybeans are extremely sensitive to hail damage when they are in the cotyledon stage and later in the growing season during flowering. Shortly after emergence the soybean plant is living off of the nutrients in the cotyledons. If both cotyledons are removed by hail damage and the first true leaves have not emerged, the plant is not likely to recover. However, if one cotyledon remains intact the plant should be able to resume growth and recover from the damage. The adjacent table can be used to help determine the amount of yield loss associated with hail damage to soybeans in the vegetative growth stage.

% of Nodes Cut or Broken	% Yield Loss
10	1
20	3
30	4
40	6
50	9
60	14

Source: National Hail Insurance Association.

**Soybean fertility.** As with other crops, the basis for strengthening soybean fertility begins with reliable soil testing. One important area of the soil test report to watch closely is soil pH. Soil pH determines the availability of soil nutrients (see following chart). Soybeans prefer a soil pH of 6.0 to 6.7 and are less forgiving of lower soil pH than corn.

Phosphorus and potassium are also very important to high-yielding soybeans. A 60 Bu/acre soybean crop would remove about 48 lb P<sub>2</sub>O<sub>5</sub> and 84 lb K<sub>2</sub>O from the soil in the grain. This is 33% less phosphorus but 55% more potassium than a 200 Bu/acre corn crop removes in the grain. This illustrates the need to monitor soil test levels thoroughly, especially potassium, for top soybean yields.



Adapted from E. Truog, 1946. Soil reaction influence on availability of plant nutrients. Soil Science Society of America Proceedings 11, 305-308.

**2011 National Corn Yield Contest (NCYC)**  
**Northern Illinois has some of the best corn growers in the country!** Consider entering the 2011 National Corn Yield Contest! There are both state and national awards in several categories, including:

- Non-Irrigated No-Till/Strip-Till Non-Irrigated Ridge-Till Non-Irrigated
- Irrigated No-Till/Strip-Till Irrigated Ridge-Till Irrigated

**The early entry deadline has been extended to June 25.**  
 See your Pioneer sales professional for more information and management suggestions.



Pioneer IMPACT™ (Intensively Managed Product Advancement and Characterization Trials) plots are the heart of a pre-commercial advancement process that selects the best Pioneer® corn and soybean products to fit local growing environments.

The cool, wet spring has challenged almost everyone to get fields planted in a timely manner. Pioneer IMPACT teams have diligently planted every location available, despite weather challenges. As a result, Pioneer has planted over 300 corn and over 200 soybean locations in Illinois and Indiana. Our thanks to our cooperators and the IMPACT teams that made it possible.

The main objective of the IMPACT testing program is to advance the Right Products for the Right Acre, tested in each local growing environment with local farming practices. In Illinois, Pioneer will be testing a large number of corn and soybean products with new genetics and trait combinations—comparing them to competitive and leader products in the local environment in which they would be sold. This is Pioneer's commitment to local testing and advancement.

Yield and agronomics within each local environment are core to advancing products to the pre-commercial stage. Also, key traits such as early vigor, stand establishment, uniformity, root lodging, brittle snap, disease tolerance, and stalk lodging will be recorded. Thousands of observations will be analyzed. To learn more, talk with your local Pioneer sales representative.

## Integrated Refuge — Available Now!

### Optimum® AcreMax® 1 (AM1) insect protection

Optimum® AcreMax® 1 insect protection from Pioneer is the industry's first in-the-bag solution for corn rootworm refuge.

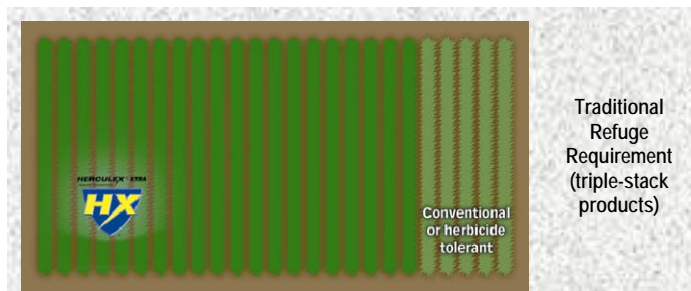
#### System benefits:

**Simplified refuge.** Optimum AcreMax 1 products meet a grower's CRW refuge requirements with an in-the-bag solution, eliminating challenges associated with planting an in-field or adjacent corn rootworm refuge, and providing flexibility to plant the required corn borer refuge up to ½ mile away. One product per field vs. two products required with traditional refuge.

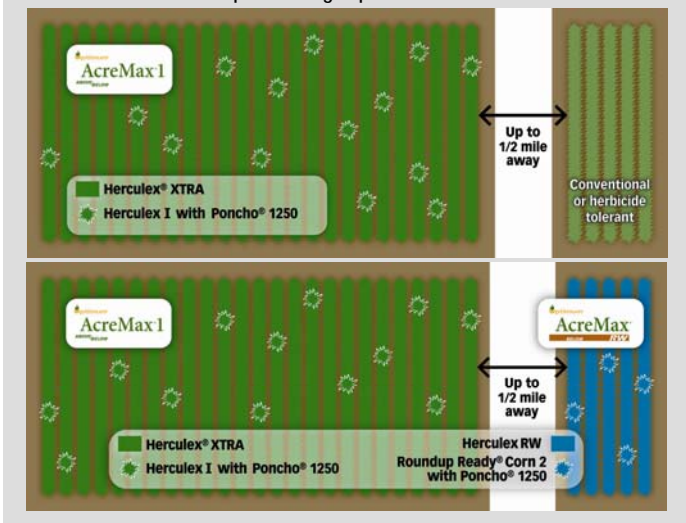
**Reduced refuge, maximum yields.** Optimum AcreMax 1 products or Optimum AcreMax 1 products plus Optimum® AcreMax® RW products are designed to maximize field-by-field productivity and increase yields in fields with corn rootworm pressure by placing in-plant CRW protection where it is needed. In addition, the Optimum AcreMax 1 system can help growers potentially eliminate their need for soil-applied insecticides.

**Technology preservation.** Optimum AcreMax 1 insect protection provides growers new productivity options while minimizing the risk of rootworm resistance and maximizing the sustainability of in-plant insect protection technology.

**Proven performance.** More than four years of testing shows Optimum AcreMax 1 insect protection products consistently deliver the same strong yield and performance as their Herculex® XTRA counterparts. Optimum AcreMax 1 products are available in locally tested and trusted hybrid platforms to maximize your farm yields.



#### Simplified refuge options with AM1



## Single-bag Refuge Concept!

### Optimum® AcreMax® Xtra (AMX) insect protection

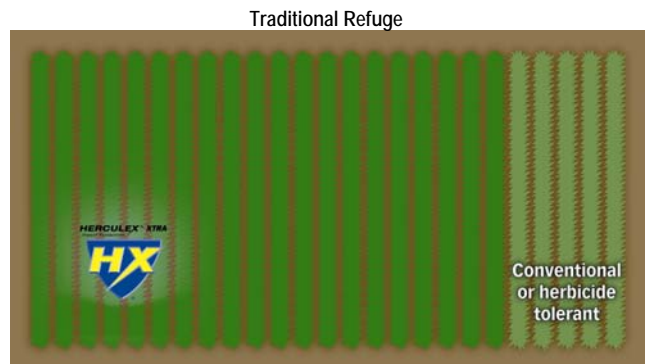
**What is it?** Upon regulatory approval, Optimum AcreMax Xtra insect protection products would offer growers an option for single-bag refuge in areas needing both above- and below-ground insect protection.

#### System benefits:

**Ultimate simplicity.** Optimum AcreMax Xtra insect protection products would satisfy all of a grower's refuge requirements in a single bag.

**Maximized farm yields.** On-farm trials illustrate that Optimum AcreMax Xtra products yield the equivalent of pure stands of Herculex XTRA insect protection products, which when planted across a grower's operation would provide higher overall farm yield potential.

**Technology preservation.** Optimum AcreMax Xtra insect protection would provide growers a new option to reduce the risk of insect resistance and extend the viability of in-plant protection in the future.



#### Single-bag Refuge Concept



Herculex® Insect Protection technology by Dow AgroSciences and Pioneer Hi-Bred.

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RR2 = Contains the Roundup Ready® Corn 2 gene. \*YieldGard and Roundup Ready are registered trademarks used under license from Monsanto Company.

Poncho® is a registered trademark of Bayer.

All products are trademarks of their manufacturers.

Optimum® AcreMax® Xtra insect protection products are **not yet available for sale or use**. Products, benefits and concepts described are subject to full regulatory approval and field testing.

Consult your local ag chem retailer for specific rates and recommendations.

This reference guide is not intended as a substitute for the product label for the products referenced herein. Product labels for the above products contain important precautions, directions for use and product warranty and liability limitations that must be read before using the product. Applicators must be in possession of the product label(s) at the time of application. Always read and follow all label directions and precautions for use when using any pesticide alone or in tank-mix combinations.

WALKING YOUR FIELDS®



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