

Agronomy Newsletter

With all of the challenges that we have faced throughout this growing season there have been countless agronomic issues in our area. The Allen/DeKalb county areas saw record replant, with roughly 1/3 of all acres that we service needing some sort of replant. Many acres that were not replanted also went through numerous challenges. We saw this as a good opportunity to start an agronomy newsletter where we will highlight some of the current issues, as well as look ahead to what may be showing up in the future. -Alex Emehiser

Season Recap

As always, we started the year with hopes and dreams of a smooth and flawless planting season. Unfortunately, those dreams were just that. April rolled around with above average temperatures and moderate rainfall, and by mid-month there were some areas able to plant into very good ground conditions. By late April the heavy rains showed up, and with them came below average temperatures. In general, the closer the planting date to the rains and cold, the poorer the emergence. Corn and soybeans that were emerged were met with frost from temperatures that dipped into the upper 20's.

The cold rains continued through the first part of May, causing very difficult growing conditions for the planted crops. Soils were saturated and high temperatures were in the 50's and low 60's. By mid-May, the weather had turned around for the time being, and ground conditions were as good as many growers had seen. A large portion of acres in our area were planted in this time window, as well as some replanting from April. At this point, most growers were very pleased with how the seed went in. However, in late May the weather turned ugly again, and a large percentage of the May planted crops were either drowned out or crusted in.

By early June, many operations were facing very difficult decisions as to what should be replanted. Many whole fields were scrapped due to rotten seeds and thick crusting. Fortunately, we had good weather to accomplish all of the tasks that needed completed. In general, corn planted in June came up well and has had good growing conditions except in low areas where it has had water standing several times since. The beans planted late have had a tough time getting going, and many of them did not get good color and start growing until late July.

Overall, crops that were able to get a consistent stand established will still have good yield potential. We believe there will be a wide variety of yields coming in this year from area to area, field to field, and especially within the fields themselves.

- ❖ We appreciate your business, and thank you for working through this tough year with us. We hope that you will find this informative as well. As always, if you have any questions about these topics or anything else going on, please feel free to call us.

- Alex Emehiser

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Corn Topics

- Corn growth stages and late season stress
- Western Bean Cutworm
- Product Highlight: P0574AM

Corn Growth Stages and Late Season Stress

A tough spring has led to corn planting dates in 3 different months, in some cases all in the same field. Looking ahead, each of these plantings will be maturing through a different set of growing conditions. This section will touch on some important dates and how an average or abnormal fall could affect yield and or grain quality.

Things to Consider

- April 25th planting: 105 day corn, estimated blacklayer date – September 13th
- May 18th planting: 105 day corn, estimated blacklayer date – September 15th
- June 3rd planting: 103 day corn, estimated blacklayer date – September 23rd

Table 2. Potential corn yield loss per stress day during various stages of growth

Growth Stage	Estimated Yield loss / day Min – avg – max (%)
V12 – V16	2.1 – 3.0 – 3.7
V16 – Tasseling	2.5 – 3.2 – 4.0
Pollination (R1)	3.0 – 6.8 – 8.0
Blister (R2)	3.0 – 4.2 – 6.0
Milk (R3)	3.0 – 4.2 – 6.8
Dough (R4)	3.0 – 4.0 – 5.0
Dent (R5)	2.5 – 3.0 – 4.0
Maturity (R6)	0

Source: ¹Rhoads and Bennett (1990) and ²Shaw (1988).

- The table to the left shows how plant stress can affect yields at various plant stages. Notice that the greatest losses can occur during the reproductive stages of pollination through maturity.

- The growing season from now through late September will play a large role in the yield potential of late planted corn. A lack of late season rains, or an early frost could have significant impact on crops. A hard freeze during the dent stage could cause yield losses of **4-23%** according to a University of Wisconsin study.

- A corn plant can experience yield loss up until it reaches full maturity. While losses are normally minimal, they can still occur through the dent stage. Timely rains and good growing conditions are needed to finish a crop through blacklayer or full maturity.

- Stress and yield loss can also occur due to nutrient deficiencies.

With heavy rains and saturated soils through much of the year, nitrogen losses could lead to late season shortages.

Western Bean Cutworm

The Western Bean Cutworm is a native pest of corn and soybeans in the United States. Its range has expanded to the Eastern Corn Belt, and in recent years has become a major pest in Northern Indiana. This year, Purdue University and Pioneer saw record moth counts in traps across the state.



We recorded moth counts as high as 90 per week here at Max's warehouse with the peak coming in mid-July. However, after much scouting, none of the fields in the area were near the threshold required for an insecticide application. In the last week we have been able to find some worms feeding on ears in the area.

Life Cycle

Larvae, such as the one pictured above, overwinter in the soil. They prefer sandy soil, therefore they have not been a major problem in much of our area until recently. The moths emerge in late June and July, and mated females begin laying eggs on the upper leaves of corn plants. Eventually they work their way to the ear where they feed on kernels.

Damage

Damage from larvae feeding can be extensive. The picture below is a good example of Western Bean Cutworm ear damage. Unlike earworms the larvae are not cannibalistic; this can allow multiple worms to feed on each ear.



- Yield losses occur due to kernels lost during feeding
- Wounds in the ear allow ear molds to become established leading to poor grain quality and possible mycotoxins.

Control

- Herculex 1 above ground trait will suppress feeding larvae. 100% control is not achievable with this trait
- A well timed insecticide application can be effective. It must be applied at or near egg hatch and before larvae are in the ear. This can be difficult with staggered moth flights.

Product Highlight: P0574AM



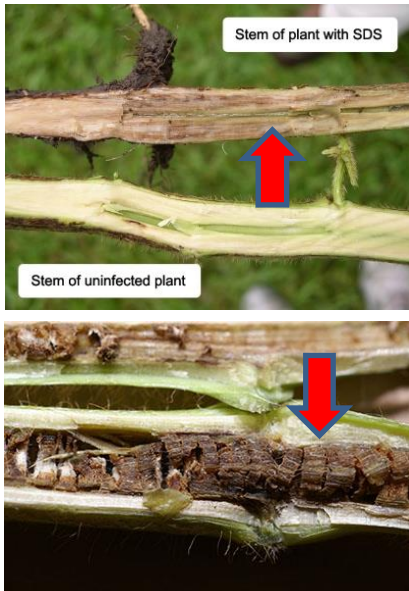
- P0574 is an exciting new hybrid that will be offered as an AM (double-stack) and as a conventional.
- Strengths: Strong emergence, great drought-tolerance, strong stalks and roots, shorter plant height and good ear placement
- Things to keep an eye on: Gray Leaf Spot

P0574 will be mixed into many product lineups this year to compliment P0506. It will help to spread the risk with a different genetic background. **In over 8,000 comparisons it has 8.9 bu/ac yield advantage!**

Soybean Topics

- Brown Stem Rot vs. Sudden Death Syndrome
- Soybean Aphids
- Product Highlight: P31A22X

Brown Stem Rot vs. Sudden Death Syndrome



- Brown Stem Rot (BSR) and Sudden Death Syndrome (SDS) can both have devastating effects on yield
- Both diseases prefer cool and wet soils at the time of infection, and the foliar symptoms they display are very similar
- SDS infection can occur as early as a few days after germination, but foliar symptoms may not appear until late in the growing season
- Soybeans are most susceptible to BSR during the reproductive stages
- The easiest way to distinguish the two diseases is by examining split stems
- SDS will show a stem with the outer portion (cortex) being brown and rotting while the center (pith) is healthy.
- BSR will show a stem with the cortex being healthy, and the pith will be brown. Many people compare the look to a stack of pennies when identifying BSR. The picture on the bottom left is an example.
- A few management options for SDS include: reducing compaction,

planting into warmer soils, and treating with ILeVO seed treatment

- Management options for BSR include: selecting resistant varieties, crop rotation, and tillage

Soybean Aphids



- Soybean Aphids can be a major pest in most areas of the Midwest
- Yield loss is caused by feeding on the plant sap, which in turn takes nutrients and fluids from the plant
- Aphids are born pregnant, so populations are able to increase nearly exponentially. Adults develop wings when plants become crowded, and this enables them to move between plants and or fields
- Aphids are most often found on the underside of the newest foliage,

and therefore they are often worse in later planted fields

- Treatment is economic if more than 250 aphids per plant are found while scouting in a random pattern
- Management options include: host plant resistance, and insecticide treatment

Product Highlight: P31A22X



- P31A22X will be a new RoundUp Ready 2 XTend variety offered next year that brings top end yield potential paired with solid agronomics, making it suited for nearly all soils.
- Excellent emerger with strong SDS tolerance.
- **In over 1,700 comparisons: +3.4 bu/ac! Won 70+% of all comparisons**