

Northern Ohio Field Notes

August 4, 2022 John Schoenhals, Pioneer Field Agronomist

Fungicide/Insecticide Application to Corn – Update

Current Observations:

- Gray Leaf Spot is currently the most prevalent disease
- Tar spot has been found at low levels across northern Ohio- it is not easy to find in most fields at this time, but seems to be increasing
- Northern Corn leaf blight and Common rust can be found occasionally

What is the ideal timing for fungicide application?

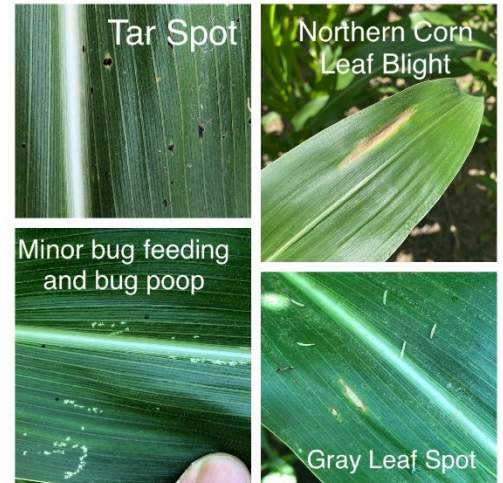
- Fungicides provide about 3 weeks of good disease protection before beginning to tail off. With low to moderate disease pressure in most fields, a slightly delayed fungicide application is likely the ideal timing this year. Aiming for a “brown silk” timing (about 2 weeks after silking) will allow better protection deeper into grain fill.

When is “too late” to apply a fungicide on corn?

- When aggressive diseases like tar spot or southern rust are present, fungicide applications through the R4 (dough) stage can provide an economic return. Once ears are fully dented (R5), the likelihood of an economic response declines.

Should I apply a fungicide in corn?

- The likelihood of a fungicide application creating a positive return on investment will be determined by the severity of disease development in the coming weeks. If rainfall, heavy dews, and/or high humidity continue, positive yield response to fungicide applications is likely. Priority for fungicide applications should be placed on fields in the following categories:
 - High yield potential
 - Hybrids with low disease tolerance
 - Fields with historically high disease pressure (river bottoms, etc.)
 - Irrigated
 - Corn back to corn



Tar spot has small, raised, black bumps that can not be rubbed off a leaf. Bug poop is small, shiny spots that can be rubbed off a leaf.

GDU Accumulation Update

With a wide range of planting dates and many acres of corn planted in June, warm/sunny weather is important to keep the crop moving toward maturity. This chart shows that regardless of planting date, GDU accumulation since planting is running at or above normal.

| GDU Accumulation Since Planting Compared to Average | | | | |
|---|------------|--------|--------|---------|
| | Plant Date | | | |
| | April 29 | May 13 | June 3 | June 18 |
| Montpelier | +6% | +6% | +3% | +1% |
| Napoleon | +5% | +6% | +2% | +/-0% |
| Fremont | +10% | +10% | +5% | +3% |
| Wellington | +10% | +11% | +6% | +3% |

data from https://mygeohub.org/groups/u2u/purdue_gdd

Fungicide/Insecticide Applications to Soybeans

Bottom Line: Consistent yield benefits have been realized from applying foliar fungicide/insecticide in soybeans at mid-R3 growth stage. Significant advantages to applying fungicide/insecticide to soybeans this year are expected, both from a disease/insect management perspective, as well as overall plant health benefits. Fungicide applications through the R4 and into R5 growth stage are likely to be worthwhile.

Understanding Corn Growth Stages

Tassel (VT) – bottom-most branch of tassel completely visible.

Silking (R1) – silks visible outside the husks.

Blister (R2) – kernels white on outside, clear liquid inside.

Milk (R3) – kernel yellow outside, milky white fluid inside.

Dough (R4) – kernel fluid thick/pasty, cob pink or red (or white in some hybrids).

Dent (R5) – 50% of kernels at least partially dented. Milk line begins to progress.

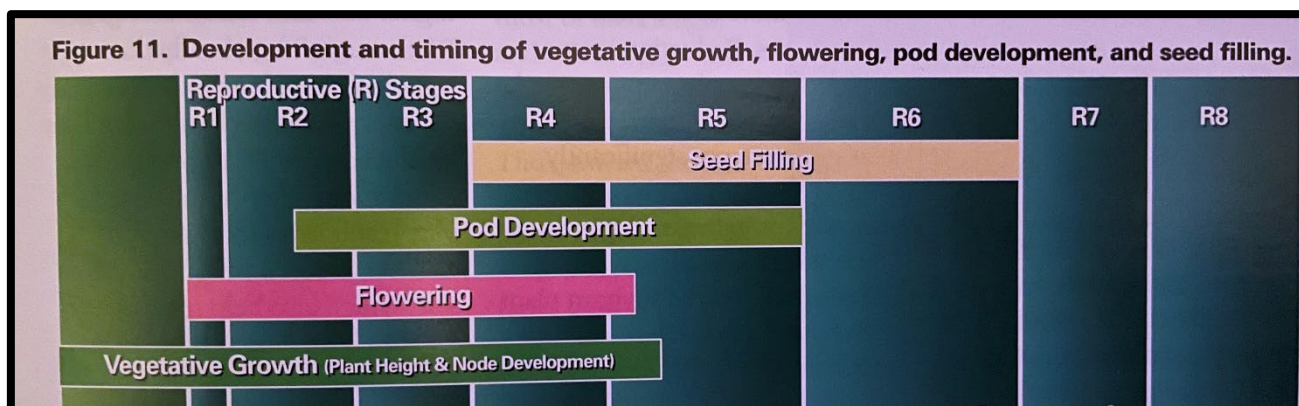
Physiological Maturity (R6) – milk line no longer evident, black layer formed. Maximum dry weight achieved.

| Kernel Growth Stage | Aprx. Days After Pollination | % of total kernel dry weight accumulated | Aprx. % Moisture | Impact of stress at this stage |
|---------------------|------------------------------|--|------------------|--|
| Silking (R1) | | | | Poor pollination, fewer kernels |
| Blister (R2) | 10-12 | | | Kernel abortion, fewer kernels |
| Milk (R3) | 18-20 | | | Kernel abortion possible (not as likely as R2) |
| Dough (R4) | 24-26 | 33% | 70% | Smaller kernel size/weight (abortion unlikely) |
| Early Dent (R5) | 31-33 | 45% | 60% | Smaller kernel size/weight |
| ¼ Milk Line | 35-38 | 65% | 52% | Smaller kernel size/weight |
| ½ Milk Line (R5.5) | 41-44 | 90% | 40% | Smaller kernel size/weight |
| ¾ Milk Line | 50-54 | 97% | 37% | Smaller kernel size/weight |
| Black Layer (R6) | 60-65 | 100% | 30-35% | No Impacts |

Growth stage progress can vary significantly based on hybrid, planting date, and weather

Understanding Soybean Growth Stages

| Stage | Description |
|------------------------|--|
| R1: Beginning Bloom | One flower open at any node on main stem |
| R2: Full Bloom | Open flower at one of the two uppermost nodes with a fully developed leaf |
| R3: Beginning Pod | Pod 3/16" long at one of the four uppermost nodes with a fully developed leaf |
| R4: Full Pod | Pod ¾" long at one of the four uppermost nodes with a fully developed leaf |
| R5: Beginning Seed | Seed 1/8" long in a pod at one of the four uppermost nodes with a fully developed leaf |
| R6: Full Seed | Pod with a seed that fills pod cavity at one of the four uppermost nodes |
| R7: Beginning Maturity | One normal pod on the main stem that has reached its mature color |
| R8: Full Maturity | 95% of the pods have reached their mature color |



From "Soybean Growth and Development," Iowa State University