

Northern Ohio Field Notes

July 15, 2022 John Schoenhals, Pioneer Field Agronomist

Fungicide/Insecticide Applications to Soybeans

1. Growth Stage

- a. **Mid-R3, along with at least 15 nodes on the main stem, is the optimum timing for foliar fungicide/insecticide**
(R3 begins when one of the top 4 fully developed nodes has a pod that is 3/16" long, R4 begins when a pod at one of the top 4 nodes is 3/4" long.)

2. Environment

- a. Rainy and/or humid weather conditions are most conducive for disease development, but soybeans have shown responsiveness to fungicides/insecticides in most types of environmental conditions.
- b. Fields planted to soybeans in back-to-back years (*especially in no-tilled situations*) will be at increased risk for disease development
- c. Timely-planted, high yield potential fields will offer the highest chance for economic return from fungicide applications.

3. Treatment

- a. Many Frogeye leaf spot isolates are resistant to QoI (strobilurin) fungicides. **Be sure to use a product with multiple modes of action like Approach Prima.**
- b. **Insecticides should always be included** to help with pests such as Japanese beetles, grasshoppers, stink bugs, and bean leaf beetles. The addition of insecticide in this tank mix has shown a synergistic effect (Pioneer data: +2.6bu/A fungicide alone, +5.3bu/A fungicide with insecticide).
 - i. In the case of stink bugs, remember that most insecticides offer very little in terms of residual activity. Late-season scouting will be important this year to prevent seed damage.



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Bottom Line: Consistent yield benefits have been realized from applying foliar fungicide/insecticide in soybeans at mid-R3 growth stage. While disease pressure is currently low, 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/Insecticide Application 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.

Several weeks of hot, dry, low humidity weather from mid-June through early July has led to slow development of foliar disease; however, the return of moisture, humidity, and more moderate temperatures will likely lead to disease progression. Fungicide decisions should prioritize fields with average or above average yield potential, or hybrids susceptible to foliar diseases. Well-timed fungicide applications (slightly delayed to brown silk when disease pressure is low) are likely to provide a benefit this season (2 pass applications in high management, corn-on-corn, or irrigated acres).

More details/hybrid ratings from last Field Notes update:
<https://corteva.showpad.com/share/5mDcjUaLcAs70hm47MaZG>

Gray Leaf Spot has been the most prevalent disease in corn nearing tassel stage. A small amount of tar spot has also been found in the area. The weather over the last 10 days has created an environment likely to lead to increased disease pressure. It is important to maintain a healthy canopy to maximize yield.

Abnormal Soybean Leaves

Dicamba off-target movement (drift and/or volatilization):

Soybeans are extremely sensitive to dicamba, showing symptoms with exposure to as little as 1/800th of a normal rate. Dicamba symptoms often show most strongly 2-3 weeks after applications, and are persistently present on new growth of the soybean plant. Dicamba sprayed in both corn and soybean fields may lead to soybean leaf cupping.

Group 15 herbicides (EverpreX, Zidua, Dual, etc): When applied POST for additional residual control, these herbicides can cause leaf distortion, or “draw-stringing.” New growth will appear normal.

Tank mixes with high oil content: Spotting or speckling of soybean leaves present at time of application.



Temporary Leaf Droop



Group 15 herbicide response



Crop response from tank mix, adjuvants, etc.



Off-target dicamba on non-tolerant soybeans

With the prevalence of dicamba injury in areas, some myths have developed regarding the use of Enlist herbicides

- **Myth 1: Enlist herbicide exposure cups soybeans**

- Reality: Temporary drooping of soybeans recently sprayed with Enlist One or Enlist Duo may occur in the first 12-24 hours, but cupping is not seen. **The Enlist weed control system is the most advanced herbicide tolerant system on the market, providing an effective, on-target weed management solution.**

- **Myth 2: Ammonium sulfate (AMS) exposure cups soybeans.**

- Reality: University trials have shown that rates as high as 34lb/A AMS in spray solution can cause significant burning on the leaf, but do not lead to cupping

- **Myth 3: Enlist herbicide tolerance is “weak” in some Enlist E3 soybeans, leading to cupping.**

- Reality: Enlist applications as high as 6x normal rates have been tested, with no symptomology showing on Enlist E3 soybeans.

- **Myth 4: Environmental stress makes some soybean genetics prone to cupping regardless of herbicides.**

- While aphid feeding and several virus diseases can cause leaf deformation, these can often be differentiated from herbicide damage based on patterns in the field.

How Does Corn Pollinate?

Corn pollination is the most critical stage of corn development. Moderate temperatures and sufficient soil moisture create ideal pollination conditions.

- Each potential kernel has a silk and must receive a pollen grain. Each tassel produces up to 25 million pollen grains
- Silks from the base of the ear emerge first, silks from the tip emerge last
- Silks grow 1-2” per day initially, slowing over time. Silks remain viable for about 10 days (less if hot/dry)
- Silks range in color from green to yellow to pink/red/purple, depending on hybrid genetics and environment
- With some plant-to-plant variability, pollen shed in a field continues for aprx. 10 days, peaking around day 5
- Once pollen grains reach a silk, a pollen tube grows from the pollen, through the silk, and reaches the developing kernel, completing pollination. Once this occurs, the silk detaches from the kernel within 2-3 days, and the silk begins to dry, while kernel development continues
- Pollination can be tracked by carefully removing the husks from an ear and gently shaking the ear. Silks that remain attached indicate kernels not yet pollinated (or pollinated recently, and silk has not yet detached)
- **Silk clipping insects** (Japanese beetles, red headed flea beetles, or corn rootworm adults) may be spotted in some fields. The threshold for silk clipping is ears not yet pollinated and silks clipped to ½” or less.

