Northern Ohio Field Notes

July 18, 2023 John Schoenhals, Pioneer Field Agronomist

Fungicide/Insecticide Applications to Soybeans

1. **Growth Stage**
   a. **Mid-R3 to early R4, 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 Aproach 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.

Bottom Line: Consistent yield benefits have been realized from applying foliar fungicide/insecticide in soybeans at mid-R3 growth stage or slightly later. 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

Soybean Growth and Development

Regardless of the weather soybeans are currently experiencing, short plant height is noted in many fields. Stresses for earlier in the season (extreme dryness) and current wet soil conditions in some areas (discussed on the next page) are some of the reasons. Plant height (in inches) is less correlated to final yield than total nodes. Compact plants with tightly-packed nodes use less water and energy to support stems, allowing photosynthesis and water use to more fully support pod and seed development though the later summer. Compact plants are also at lower risk for foliar disease development and lodging. New nodes can be produced every 3-4 days in good growing conditions, and plants continue to add new nodes until about early R5 growth stage (beginning seed).

Fungicide/Insecticide Application to Corn

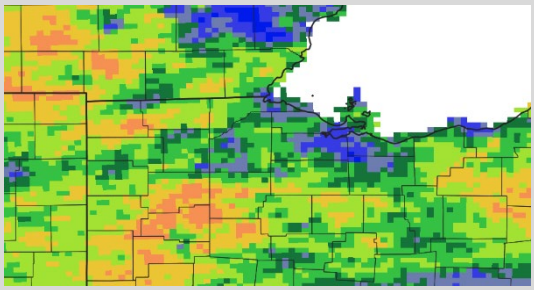
The duration of dry, low humidity weather through at least mid-June (later in some areas) has led to slow onset of foliar disease; however, the return of moisture and humidity will likely lead to disease progression. Corn fungicide decisions should prioritize fields with average or above average yield potential. Well-timed fungicide applications (targeting "brown silks" this year) are likely to provide a benefit again this season.

More details/hybrid ratings from last Field Notes update:
https://corteva.showpad.com/share/lazy8PmZOx03tnwSDDAWh

Tar spot ***cannot*** be rubbed/scratched off a leaf. Bug poop ***can*** be rubbed off.

Weather Stress, Pollination, etc

Rainfall over the last 30 days has been variable. The map shows estimates as of July 14, but local rainfall amounts have been even more variable in many places. This has led to a wide array of crop conditions and concerns.



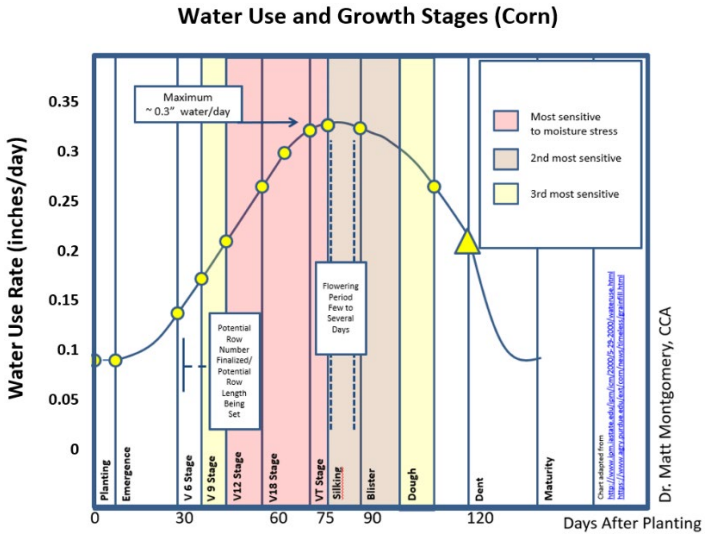
Previous 30 Days % of Normal Precipitation
Estimated Data from National Weather Service

Excessive water – *especially impactful for soybeans*: Saturated soils, followed by hot, sunny weather, can cause oxygen levels in the soil to rapidly decline. When this occurs, several issues can occur.

- **Flooding injury/water damage**: The most "diagnostic" symptom of flooding injury is "rat-tail roots" (outside is brown and easily removed to reveal a white/firm center). Depending on duration of flooding, leaves may die, but if new roots develop, recovery and new growth can occur.
- **Yellow soybeans/tile lines showing**: Saturated/oxygen deprived soils lead to decline of *Rhizobia* bacteria in soybean root nodules. Soybeans are especially sensitive to "wet feet" when they are smaller. When investigating the cause of yellow soybeans, look for the health of root nodules. Healthy nodules are whitish and firm outside and a deep red color when sliced open. Yellow soybeans often have mushy/inactive or few nodules. Good growing weather will allow new nodules to form. To help plants recover, a broadcast application of 50-75lbs AMS may provide a benefit. Sulfur is helpful in the formation of nodules, and nitrogen helps feed the plant during recovery. Foliar nutritionals can also help recovery, but provide much smaller amounts of nutrition. https://extension.entm.purdue.edu/newsletters/pestandcrop/article/soybeans-wet-feet-recovery-or-rescue/
- **Disease**: Phytophthora, Fusarium, and Rhizoctonia are primary soil-borne diseases. By far the most common of these is phytophthora, but all of these have been noted this year.

Drought stress – *especially impactful for corn nearing pollination*

- **Corn**: The period of 2 weeks before through 2 weeks after tasseling is the most critical period for corn to have access to water. Significant yield declines due to reduced ear length or poor pollination may occur. Corn leaf curling is a natural response to dryness and heat, and does not immediately signal that yield loss is occurring. More than 4 days of tight leaf curling is generally accepted as the point at which yield declines may begin to occur.
- **Soybeans**: Compared to corn, soybeans are more tolerant of dry weather now. This is because flowering and pod fill extend over several weeks. The most critical time for soybeans to have access to water is R3-R6 (generally, August rains make soybeans).



Septoria Brown Spot


Septoria brown spot (lower leaves)

Septoria brown spot is showing up on lower leaves in some places, especially beans-back-to-beans and/or where heavy rainfall occurred. Infected leaves usually turn yellow and have small brown spots. They may fall off over time. This is a very common disease that typically does not require management and usually does not cause significant yield impacts; however, some cases are showing symptoms moving to the middle canopy. Combined with stressed beans (either too much or not enough water), a low-cost fungicide application soon may be warranted.

ILEVO seed treatment at the high rate provides protection from early Septoria brown spot.