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Notes on Soybean Foliar Fungicide Applications in a Cool, Wet Year

By XB Yang, Department of Plant Pathology

Last week I wrote an article on scouting soybean foliar diseases in this unusual summer, which has been cool and wet. As the weather trend of cool and wet continues, there are questions about the use of soybean fungicides to manage the risk of soybean foliar diseases. Now plants in many soybean fields are approaching the R3 growth stage which is critical to the effective use of foliar fungicide sprays. This report addresses a few questions on fungicide applications.

What is happening in the fields? At this week's teleconference, many ISU agronomists reported observations of foliar diseases on corn or soybean. Soybean brown spot and frogeye leaf spot were reported with some reports of high levels of prevalence. My own field scouting also indicates the level of these diseases is higher than in a normal season, which is a not surprising due to the cooler and wetter than normal weather.

When to spray? R3 is time to pull the trigger if foliar disease risk is high in your soybean fields. Application at R1 or earlier did not pay off. Application at R3 consistently produces the highest yields across the region. R3 is the growth stage when soybean starts to set pods.

How to assess the risk? Even when the season is cool across Iowa, the disease risk is not evenly spread. This year the summer temperatures are cooler than those during the past four seasons. Different fungal pathogens like different temperatures. There is little quantitative information available on how to assess soybean foliar disease risk under unusually cool temperatures, especially for frogeye leaf spot, brown spot, and *Cercospora* leaf spot. Here are few points that may be helpful:

- 1) If you consistently have positive spray results in your fields in the past four years, the chance is higher that you will have positive results this year.
- 2) Data from different sectors suggests that in the last four years in Iowa when precipitation was plentiful, more than 50 percent of the sprays yielded economical return and more than 70 percent of the sprays provide positive yield.
- 3) If your fields are in high ground and never had foliar disease problems in the past, the risk would be low.
- 4) If you had white mold in the past and your soybean had a dense canopy in mid-July or early, white mold risk is high.

What will not work? Many report the occurrence of bacterial blight, a disease caused by a bacterium. The disease likes cool and wet weather and is mostly seen on the top canopy of the plants. Any fungicides will not be effective to reduce bacterial blight. Another disease that most fungicides have little effect on is soybean white mold. Additionally, it is too late to control white mold at

R3 growth stage. Effective spray for white mold should be carried out at R1 growth stage because white mold fungus infects soybean plants through dead flowers.

XB Yang is a professor of plant pathology with research and extension responsibilities in crop diseases. Yang can be reached at (515) 294-8826 or xbyang@iastate.edu.

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