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### **Early Fungicide Applications to Corn**

As corn reaches the V4-V7 growth stages, you may hear of early season fungicide applications. In a 2019 article, University of Nebraska Plant Pathologist Tamra Jackson-Ziems summarized results of a large analysis of U.S. and Canada fungicide trial results, noting the probability of positive economic return from dual modes of action fungicides at only about 40 percent of the time while a single mode of action resulted in probable positive returns on investment less than 20 percent of the time. Iowa State University Plant Pathologist Alison Robertson compared fungicide application timings, showing yield benefits from V5 applications ranging from -2.5 to 6.0 bushels/acre (2.1 bushels/A average), compared to 1.2 to 17.7 bushels/acre (6.0 bushels/acre average) with an application at VT. In short, it often didn't pay.

Why are the chances for a profitable result so variable and often not any better than 50 percent? Robertson provides a number of suggestions.

First, V5/6/7 applications are done to leaves that typically die and fall off soon after canopy closure, not substantially contributing to yield. A fungicide is active on the leaves to which it is applied, and while it may move through the leaf tissue to leaf margins, it will not translocate through the whole plant or to new leaves that emerge from the canopy.

Second, length of effectiveness varies, but many fungicides provide protection for about three weeks. Early applications are done when it's unusual to see foliar disease pressure. *If* Gray Leaf Spot pressure is heavy, we *could* see some early presence, but it's seldom extreme. Work at Iowa State and Wisconsin also found no relationship between diseases like anthracnose leaf blight and later stalk rots, negating the need for early fungicide passes for preventing stalk rots.

Third, applying an early fungicide does not negate the potential need for one later. If disease is an issue, fungicide applications at VT will still be necessary – and will provide a much better chance for a positive return on investment.

In most cases, save the fungicide for later applications when ROI is better. This will not only help your bottom line, but help reduce potential fungicide resistance issues as well.

### **Caterpillar Feeding in Trees**

I've received a few reports over the last couple of weeks about caterpillars feeding in trees. Insects like Eastern Tent Caterpillar or Brownheaded Ash Sawfly are active now.

Control can be difficult. Trees may be large and difficult to perform physical removal or chemical controls. If not performed correctly, chemical controls can also have adverse effects on beneficials. Fortunately, healthy mature trees can often handle defoliation just fine. They will try to put on new leaves, and assuming the rest of the summer is good, they'll do well. Younger trees, or trees under stress might struggle. They don't have the established recovery system of older trees, and attention may be needed to make sure additional stresses are kept to a minimum. Pay close attention to them, first and foremost. Control programs and additional attention to watering throughout the summer may be in order.