Program 3CR-2

Tips For Using Foliar Fungicides On Corn And Wheat

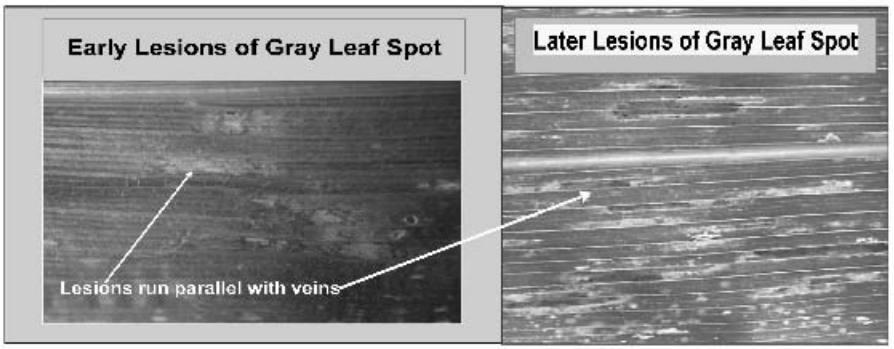
Presented by Dr. Melvin Newman
Professor, University of Tennessee

Many corn and wheat producers are considering spraying their crop with a fungicide to control diseases. This interest has been spurred by the increase in gray leaf spot disease in corn and Fusarium head blight in wheat. Tests at the Research and Education Center at Milan, TN have shown a favorable increase in disease control and yield when diseases are present. Of course, not every field should be sprayed. If there is no disease or very little disease, the response will not be very great. On the other hand, if the disease potential is high, more increase can be expected compared to the untreated. The more disease causing-factors that are present, the more likely a fungicide will increase yields.

Some important factors to consider when spraying Corn:

1. Susceptibility or resistance of the corn Hybrids to gray leaf spot (none are totally resistant to all leaf diseases) is very important.
2. Continuous corn increases disease potential.
3. Tillage practices (no-till) that leave corn residues on the surface of the ground will increase disease potential. However, conventional tillage may also promote foliar disease, especially if fields are not rotated with other crops.
4. Later plantings tend to have more disease.
5. Irrigation will provide essential moisture for diseases to develop.
6. Dry weather before and after tassel will reduce foliar disease development.
7. Periods of rainy weather throughout the growing season will increase the likelihood and severity of disease.
8. Severe gray leaf spot will weaken the stalks and may result in increased lodging.

Symptoms of Gray Leaf Spot of corn



Frequently Asked Questions about spraying Corn

Which fungicides should producers use? The strobilurin fungicides have given the best yield increases in research plots. Headline, Quadris, and Evito, have been tested and have given significant disease control and higher yields. A tank mix combination of a strobilurin fungicide and a Triazole fungicide or a pre-mix (Quilt, QuiltXcel, Stratego , Stratego YLD, Evito T or Headline AMP) would be recommended especially when Southern Corn Leaf Rust is expected to be a problem but these combination fungicides will also control other common diseases such as Gray leaf Spot. Tilt, PropiMax and Domark are Triazole fungicides that do not contain a strobilurin but have shown moderately good control of certain diseases as well. These should be tank mixed with a strobilurin fungicide for best disease control.

When is the most effective time to spray a fungicide? For several years, research has demonstrated that corn should be sprayed just at the tasseling stage (VT). If sprayed before tassel, the fungicide may lose its effectiveness, if sprayed too late, when corn is in full silk, disease control and yield tend to drop off. If silks have turned brown or black, very little increase in yield may result.

How should the fungicide be applied? Most corn is too tall at tassel to be sprayed with a high cycle sprayer, so many will use aerial application. However, some ground sprayers are big enough and may cause very little damage.

How much water should be applied? For best disease control aerial applicators should use at least 5 gallons of water per acre with a fungicide adjuvant or COC. Ground applicators should use 15-20 gallons of water per acre with a fungicide adjuvant or COC. Nozzles that give smaller droplets in the range of 300 microns will give better coverage.

Some Important factors to consider when spraying Wheat:

1. Stage of growth. Wheat can be sprayed at the Feekes' Scale 10.3 (1/2 of head emerged) to 10.5 (head emergence is complete) when considering control of Glume Blotch (caused by Stagonospora spp.) and Rust diseases. But, when the threat of Fusarium Head Blight is strong, then spraying a Triazole containing fungicide at the F 10.5.1(mid-bloom) would be recommended.
2. Fusarium Head Blight (FHB) or Head Scab is caused by Fusarium spp. and causes spikelets and heads to be killed and may produce high levels of mycotoxins such as deoxyrivalenol (DON) in some years. High levels of DON may cause grain to be unsaleable. Fungicides containing a Strobilurin type fungicide may increase DON levels while at the same time increase overall yields by controlling other foliar diseases. Fungicides in the Triazole group do not increase the DON levels and should provide a measure of control of FHB. Some fungicides that contain only Triazoles are: Prosaro, Caramba, Absolute, Tilt. There are many premix fungicides that contain both a Triazole and a Strobilurin fungicide.
3. DON levels may increase when wheat is in the blooming stage (F10.5.1) especially when there is continuous cloudy, damp or rainy weather for several days. Dry weather during the heading and flowering stages may limit the infection process of Fusarium thereby reducing FHB.
4. Crop rotation with at least a one year break from a host crop such as corn, wheat, barley or other cereals will help reduce Head Scab and some other diseases as well.
5. Good spray cover is necessary for the best control of foliar wheat disease. Usually, 5 gallons of water per acre by airplane or 15 to 20 gallons per acre by ground application provides the best control. Adjuvants may increase the effectiveness of fungicides but are not always necessary.
6. High rates of nitrogen fertilizer may increase some diseases.
7. Wheat varieties differ in their susceptibility to various diseases. Choose varieties with good resistance or tolerance to Stripe and Leaf rust disease as well as FHB.

Symptoms of Fusarium Head Blight (Scab)

Program 4CR-2

Management Of Glyphosate-Resistant Weeds In A Corn Rotation

Presented by Dr. Larry Steckel
Extension Weed Specialist, University of Tennessee

There are no less than 8 glyphosate-resistant (GR) weeds in the Mid-South. They include horseweed, Italian ryegrass, goosegrass, Johnsongrass, giant ragweed, common ragweed, common waterhemp and Palmer amaranth. One way some growers choose to manage fields infested with GR weeds is to rotate the field from cotton and soybean to corn. This can be a very effective way to reduce the population of GR weeds. Unfortunately, this rotation often does not work to reduce the overall GR weed population. There are a number of reasons for this which includes enhanced atrazine soil degradation, poor corn stands that do not shade the ground effectively and a long growing season in the Mid-South that allows weed seed production after corn harvest.

Recent research in Mississippi and Tennessee has shown that atrazine no longer provides reliable residual weed control due to enhanced soil degradation. In part due to this development, effective corn weed control is best obtained in a planned sequential program. In our research a Pre followed by an early Post application has provided more consistent weed control than relying on a single application.

There are many herbicides that can be used in corn that are quite effective on GR weeds, particularly Palmer amaranth. However, none of them can provide good residual control in thin corn stands. Light able to reach the soil after herbicide residual has played out will promote germination of many GR weeds, especially Palmer amaranth. These late emerging weeds will often begin to grow as the corn begins to dry down in late July and early August. As a result, weeds can mature and produce a large weed seed load that will have to be managed in the fol-