August 2, 2019

SCOUT FOR SOUTHERN RUST

Southern rust is caused by the fungus *Puccinia polysora* is now present in area corn fields but at low incidence levels. It is a complicated decision this year for corn growers. 1) First, we are dealing with differences in planting dates throughout our area on corn, therefore, we have an extended window for foliar disease to develop on corn leaves. 2) Will spraying a fungicide pay this year on dent corn with current commodity prices? 3) What if my hybrid's resistance to southern rust? 4) What is our weather going to do in August and early September? Will it favor an outbreak of southern rust disease in our corn? We know that southern rust does not always require treatment, making scouting and disease monitoring critical.

Symptoms are similar to common rust, but pustules are smaller and occur almost exclusively on the upper leaf surface. Pustules are usually circular or oval, very numerous, and densely scattered over the leaf surface. Spores are orange when they erupt from the pustule. As pustules age, they become chocolate brown to black, often forming dark circles around the original pustule.

The disease is favored by moisture, high humidity and temperatures around 80°F day or night. Fields in our area need to be monitored carefully now during reproductive stages in corn.

The rust pathogens do not overwinter here. Spores (urediniospores) must be blown into the area on winds from areas south of Nebraska. These fungi need moisture to germinate and infect, so high relative humidity, rainfall, and irrigation will hasten disease development. Warm temperatures also favor southern rust development, especially temperatures in the upper 70s to 80s F, which are optimal for the fungus, even if they occur during the overnight hours. Cooler and drying conditions will help slow disease spread. This was observed in 2018 when the disease was confirmed in Nebraska early in the growing season and failed to become widespread in most counties.

It is all about protecting yield with a fungicide but will it pay? It is tough to pencil out with current prices if disease incidence remains low. Most hybrids are susceptible to the southern rust fungus. Resistant varieties are the most cost-effective means to manage southern rust.

Southern rust does not always require treatment, making scouting and disease monitoring critical. It may take two or more weeks under favorable weather conditions for the disease to become more severe and widespread. Severe disease that impacts a large percent of leaf area can impact yield and stalk strength (standability) at the end of the season.

Later planted fields that are earlier in their maturity are at the greatest risk for yield loss if the disease develops there soon. Sometimes southern rust can take from several days to several weeks to develop, if at all, once it's identified in an area. Treatment may not be necessary in vulnerable fields, so scouting is critical. Spraying early may mean a second application is necessary later in the season to protect plants during later grain-fill stages if the disease increases in severity once the fungicide has worn off. Scouting corn is recommended to monitor for this and other diseases and their spread.

Foliar fungicides can effectively manage the disease. Most fungicides can provide protection of leaves from future infections for 21-28 days, so application timing is critical. Treating before disease develops may lead to loss of full product efficacy before the disease reaches a critical level. Treating too early can result in the need for reapplication later if the disease spreads and worsens after the time when the earlier fungicide application has worn off.

Don't confuse southern rust with common rust. Southern rust pustules are often numerous and tightly clustered in patches. They may appear tan to orange in color. Most spores are produced in raised rust pustules on the upper leaf surface. In contrast, common rust produces brick-red to brown spores on both the top and bottom of the leaves.

A new southern rust tracking website has been created to monitor the distribution of the disease. Go to: https://corn.ipmpipe.org/ For more information go to the UNL CropWatch website.

Soybean Management Field Day

The 21st annual Soybean Management Field Days (SMFDs), scheduled for August 13-16, 2019, will focus on helping farmers stay competitive in a global marketplace. The field days will offer farmers research-based information to improve their soybean profitability.

I am happy to be a local host on Thursday, August 15, 2019 on the Ross and Judd Boeckner farm near Plymouth in Jefferson County. From Plymouth, travel two miles west on Highway 4, then turn right or north ¼ mile on road 576th Avenue. The field day is on the west side of the road.

You can go to https://go.unl.edu/2019smfd for more information and directions. Please attend, your "Czech Off" dollars have paid for this program!

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