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EXTENSION

Colorado State University Extension
Golden Plains Area
Contact: Ron F. Meyer
Title: Area Extension Agent
Phone: 719-346-5571
Email: rf.meyer@colostate.edu

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Do Plants Get a Virus?
RF Meyer

Virus infections can not only occur in people, but plants as well. However, people and plant viruses are not the same nor do they cross infect. In other words, viruses that infect plants will not infect people. Additionally, most virus diseases need a vector, which is the way they are transported. Thus, stopping the spread (stopping the vector) of a virus will control it.

In plants, there are common virus diseases that can attack, particularly wheat. The most common viral diseases in wheat include: wheat streak mosaic virus (WSMV), triticum mosaic virus (TriMV), and high plains wheat mosaic virus. Barley Yellow Dwarf Virus is another common wheat disease. All cause yield losses if not controlled.

Plant leaf testing from symptomatic plants is the only way to know which virus is attacking a wheat field, as symptoms are nearly identical between viruses. These symptoms include yellow leaves and stunted plants. Any of the above-mentioned virus types can reduce wheat yields tremendously. Once a plant has a virus, no remedy exists. Virus inoculated plants cannot be cured with known pesticides.

As a result, the single most effective way to prevent virus spread in plants is to prevent virus infection. One strategy is extremely successful, control or eliminate all volunteer wheat prior to newly planted wheat emergence. The vector for plant virus is the Wheat Curl Mite, a microscopic insect that feeds on grasses (it prefers wheat). When the mite feeds on volunteer wheat infected with a virus and moves to newly planted wheat in the fall, the mite is the disease vector and spreads it to all wheat it feeds on.

Strategies for viral disease control includes eliminating volunteer wheat at least 10 days prior to new wheat emerging. Breaking this "green bridge" has proven to be a successful virus management strategy and provides newly emerged wheat "isolation protection". When volunteer wheat is controlled, mites die and cannot spread the virus. Wheat Curl Mites can also live on corn plants, although corn does not show virus symptoms (asymptomatic). Mites can travel from corn fields to newly emerged wheat and infect the field. Dryland corn that dies premature from drought will not harbor mites. Wheat fields next to green corn should be planted later in the season if possible to obtain the "green bridge" break.

Planting wheat varieties with known genetic tolerance to WSMV can also be effective. Colorado State University wheat varieties such as: Canvas, Guardian, and Whistler are very tolerant to WSMV. There are other varieties in addition to the ones mentioned that also can perform well with virus in the area. These varieties would be effective choices when planting fields with known plant virus issues.

Source: Tess Albrecht, Colorado State University

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