



PLANT DISEASE AND INSECT ADVISORY

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Dry Fall = Presence of Transitory Insect Invaders in Wheat (and Canola)

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Wheat planting is being completed, which means fields are greening up all over Oklahoma. Such green, succulent plants are attractive to “invading” insects such as leafhoppers; especially as their preferred foods dry up. We have begun to receive inquiries about leafhoppers over the last few weeks. There are several leafhopper species that will move into, and feed on wheat, including the painted leafhopper, the aster leafhopper, and the gray lawn leafhopper, just to name a few. These insects are small (1/16 – 1/8 inches) wedge-shaped relatives of aphids that actively fly and move when disturbed. The painted leafhopper is grayish-yellow with dark brown markings and two black spots on its “face”. The aster leafhopper is greenish yellow with 3 pairs of spots or dashes on its “face”.



Think of leafhoppers as “plant vampires” because they feed on the wheat plant’s sap with their needle-like mouthparts, and literally suck the life out of it. Heavy numbers may cause plants to appear as if they are nitrogen deficient. Leaf blades may turn brown along the edges, and have a green-yellow color to the leaves. It is difficult to evaluate their potential for injury because under dry soil conditions, the wheat plants may already be suffering from nitrogen and water deficiency.

One question that sometimes arises about leafhoppers in wheat is “do they transmit barley yellow dwarf virus?” The answer, based on years of research by numerous entomologists and plant virologists, is NO! Barley yellow dwarf virus (BYDV) is transmitted by aphids, such as the bird cherry oat aphid, rice root aphid, greenbug, corn leaf aphid and English grain aphid. It must be acquired by the aphid vector before it can be transmitted. When an aphid feeds on an infected plant, the virus is taken up through the food canal, into the gut and into the body

cavity where it then circulates into the accessory salivary gland of the aphid. The aphid infects a new plant when it “spits” infected saliva as it feeds. It is not transmitted through seed, infected soil, by rubbing healthy leaves with infected leaves, by pollen or by leafhoppers that have fed on an infected plant. Any correlation between treating a field for leafhoppers with an insecticide and a seeming reduction in barley yellow dwarf incidence probably occurred because infective aphids were controlled as well.

I know of no recommended treatment threshold for leafhoppers; in fact I found only one reference on leafhoppers in wheat, written in 1932. My “rule of thumb” suggestion is that if noticeable damage is present, and leafhopper numbers are high (they come up in clouds as you walk) consider treatment with an insecticide. While Lorsban 4E SG and dimethoate are specifically labeled for control of leafhoppers, other products such as Baythroid, Karate, Mustang MAX and Proaxis will likely work as well. Leafhoppers will probably be around until things really cool down, sometime after October. For more information, consult [Current Report CR-7194 Management of Insect and Mite Pests in Small Grains](#).

Aster leafhopper and Canola

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As winter canola acres expand in Oklahoma, the aster leafhopper (also known as the six-spotted leafhopper, see previous article for image) is of concern because it is a vector of aster yellows. Aster yellows disease is caused by a mycoplasma that requires transmission by a host insect. This disease can be particularly damaging to canola, especially when it infects plants early. It affects more than 300 species of plants including several common weeds such as horseweed, plantain, ragweed, wild carrot and wild lettuce. The disease is picked up by the leafhopper vector, but it takes 9 to 21 days for the leafhopper to become infective. Once it is infective, it can spread the disease for up to 100 days. Unfortunately, this insect has had all summer to pick up the disease from other sources before canola is planted.



Aster yellows disease is difficult to control but growers should not panic about leafhoppers and this disease. Typically, aster yellows infects 2-5% of plants in a given field with the occasional exception. While there are no available varieties that are resistant to the disease, there are some that seem to be more tolerant than others. Talk to a seed dealer about which varieties seem to be “tolerant”. Insecticide applications can control leafhoppers, but they can re-infest fields after the residual activity of the insecticide is depleted. Thus, multiple applications would be required to keep a field clear of leafhoppers which is simply not economical or responsible. We do not know at this time if seed treatments of Gaucho or Cruiser are effective at warding off early infections.

My “rule of thumb” for this pest is similar to my suggestion for leafhopper in wheat. Consider treating a field if leafhopper numbers are high (they come up in clouds as you walk the field). Brigade, Mustang MAX, Proaxis or Warrior are registered for use in canola and should provide control. Our best bet for long-term control of this disease is to have a good weed management program in place and develop resistant varieties adapted to Oklahoma. For more information consult [Current Report CR-7667, Management of Insect and Mite Pests in Canola](#).

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