Plant Disease and Insect Advisory

Entomology and Plant Pathology
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Wheat Disease Update – Oklahoma – 23 May, 2003

Bob Hunger, Extension Wheat Pathologist

Wheat I have seen over the last 10 days or so has left me with the impression that although diseases will cause losses in some areas, most of the state's crop will not suffer significantly. One difference this year is that there are many foliar diseases contributing to the losses (in combination with drought in some areas) as opposed to just one or two diseases. At any rate, below is a summary of what I've seen or heard.

Foliar Diseases

Powdery mildew (PM). Although PM rarely causes significant yield or quality reductions in Oklahoma, there probably are some exceptions this year as I have personally seen or heard reports of PM on the flag leaves and heads of susceptible varieties. Mostly this has been in Jagger because of its high susceptibility to PM and widespread planting. These high infestations of PM have been seen in fields or areas of fields where humidity is high or moisture has been abundant.

Wheat stripe rust. Jagger, which is widely planted across northern (and much of) OK is resistant to stripe rust, so there has not been a problem with stripe rust on this variety. In some locations stripe rust has been severe (e.g., on a field of Pecos near Ponca City), but overall I don't think losses directly due to stripe rust will be as severe as was the case a couple years ago.

Wheat leaf rust. Leaf rust has become much more visible over the last 7-10 days, but for the most part I think leaf rust came in sufficiently late that it will not cause significant losses. For example, I have seen some high levels of leaf rust on Jagger, but the Jagger was at the soft to medium dough stage so the leaf rust won't cause as large of a yield reduction.

Septoria/tan spot. Once again, septoria (and possibly some tan spot) has contributed to the killing of flag leaves. Mostly I've seen this in wheat to the north and west from Stillwater. Losses are difficult to predict because the wheat is fairly mature (soft to medium dough), the stems and heads are still green, and much of the area in northern/north central OK now has sufficient moisture and has been relatively cool.

Foliar disease summary. Just about all of the foliar diseases have been seen in Oklahoma this year; however, I wouldn't say we have had an epidemic of any of them. What has occurred, is that these foliar diseases in combination with the drought through the spring has caused the leaves (and most importantly the flag leaves) to die prematurely. This could contribute to lower yields, but for most of the wheat in the northern half of Oklahoma there seems to be adequate

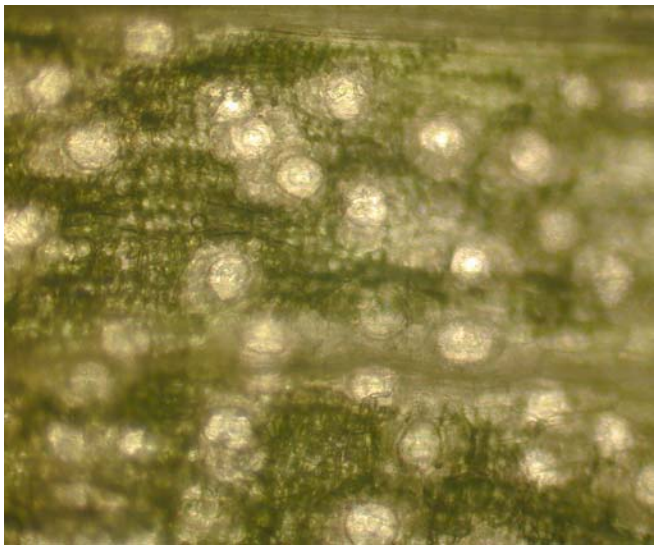
moisture and with cool temperatures that are in the forecast, this should promote filling and finishing of the grain from the green stem and awns.

Other Diseases

Barley Yellow Dwarf Virus (BYDV). I've seen BYDV symptoms most everywhere I've been, but these have been in scattered spots with little stunting. Hence, I believe these BYDV infections resulted from spring infestations of aphids and will not cause significant losses in this year's crop.

Root rots. Root rots (especially sharp eyespot caused by *Rhizoctonia* spp.) continue to be observed. However, with the cooler temperatures and moisture the characteristic whiteheads indicating root rot problems are not appearing in high incidence.

Downy mildew. We did receive a sample of wheat that was determined to be infected with the fungus *Sclerophthora macrospora*, which causes downy mildew or "crazy-top" of wheat (see accompanying photos). This fungus has a wide host range of grasses, and since it requires free moisture for part of its life cycle, downy mildew will be restricted to low-lying areas. This disease shouldn't cause significant losses, but can be confused with herbicide (especially 2,4-D) damage on wheat.



Other States

The only information I've received from other states over the last ten days is the bulletin sent out by the Cereal Disease Lab in Minnesota. They indicate that as of the third week in May, harvest has commenced from southwestern Oklahoma to southern Georgia. Regarding diseases, they indicated that during the third week in May that leaf rust was increasing in south central Kansas and that in mid-May, although leaf rust was prevalent throughout Arkansas, this was later than usual and no significant yield losses were expected.

Black Cutworms in Turf

Tom A. Royer, Extension Entomologist and Nathan Walker, Assistant Professor, Turf IPM

We recently observed some black cutworm damage on a research green at the Plant Pathology Research farm in Stillwater. Black cutworms are one of three potential cutworm pests of golf greens in Oklahoma. The others include the bronze and variegated cutworm.

Black cutworm moths are grey with black markings, with a wingspan of 1.4-1.8 inches. They have a characteristic black "dagger" marking on their forewings. The larvae measure up to 2 inches when full grown. They undergo 7 instars, molting 6 times after they hatch. When they reach the 4th instar, they begin to feed below the soil surface. Infestations in Oklahoma derive from a few resident larvae or pupae that successfully overwinter here, along with flushes of migrating moths that originate from more southern locations.

Black cutworms are a "tunneling cutworm", typically burrowing under the green's surface and emerging from their tunnel at night to feed. The damage often shows up as a circular spot of grass that is closely clipped, and actually can resemble a ball mark. Adult moths lay eggs on leaf blades. Because grass on a green is so frequently mowed, cutworm eggs deposited on the green

are removed with the mowed clippings. Most cutworm infestations on greens get started from eggs laid around the collar of the green, or from eggs that hatch in piles of grass clippings that are left too close to the green. The larvae feed above ground on leaf blades until they reach the 3rd instar, then they move out onto the green surface and excavate a hole, or occupy aeration holes. A cutworm larva will mature in 20 to 40 days.

Black cutworms can be detected through close examination of the green, or by using a "soap flush." This simply involves mixing about 2 tablespoons of dishwashing soap into a gallon of water. Pour the water over the suspected infestations on the green and wait for 30 seconds to one minute. Any larvae present will become irritated by the soap, and come to the surface of the green. Greens should be regularly inspected for evidence of cutworm damage, and appropriate controls taken. Often, they leave trails in the dew at night as the move from the green collar to the green itself that can still be seen in the morning. While the presence of active bird feeding is

a good indicator that cutworms are present, a soap flush should be used to confirm their presence, since other insects or earthworms may be a food choice for the birds.

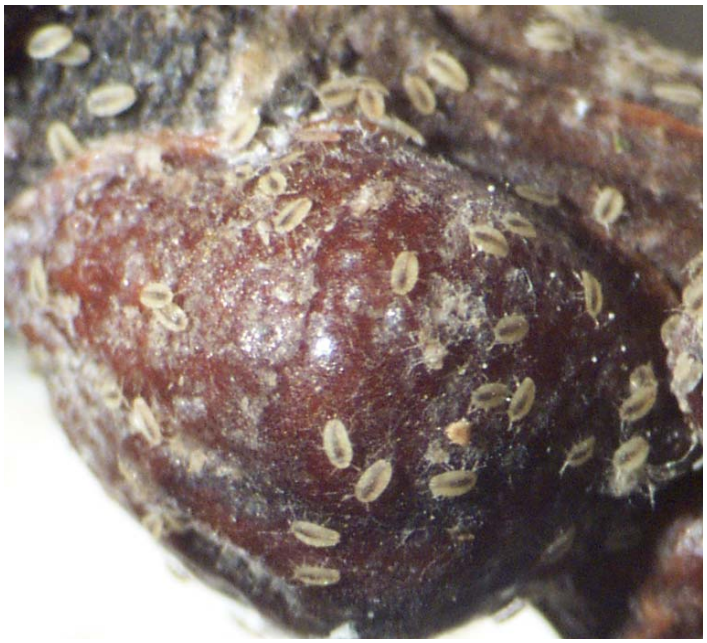
There are a number of insecticides that are registered for control of black cutworms on golf courses that can provide excellent control, including Astro®, DeltaGard®, Demand®, Scimitar®, Talstar®, or Tempo®. Conserve™, which is derived from a naturally-occurring bacterium, is also registered, as is Sevin® (carbaryl). Carefully read the label for use patterns, some products may be registered for all turf uses, while others may not.

Lecanium Scales are Hatching

Tom Royer, Extension Entomologist

On May14, I observed lecanium scales hatching on several infested trees in Oklahoma City. The term lecanium scale is used to identify a group of similar scales that occur on trees and shrubs. The most common species is probably the European fruit lecanium, which infests numerous species of ornamental and fruit trees. Mature scales are chestnut brown, and measure up to from ⅛ to ¼ inch in diameter, and are attached to the stem tissue. Heavy infestations can cause branches to become weakened and die.

Lecanium scales are difficult to control unless they are treated when newly hatched crawlers are active. These scales overwinter as 2nd instar nymphs, maturing in early spring. Adult females lay from 300-5000 eggs, which remain under the protective covering provided by the mother scale. The crawlers hatch underneath the scale covering and crawl away to attach to the underside of leaves. Later in the summer, they migrate back to the stem tissue where they reattach and spend the winter.



Most healthy trees can withstand some scale infestation. If infestations are heavy, control can be achieved with insecticidal soaps, horticulture oils, or various commercially available insecticide products. The most common problem in controlling lecanium scales arises from inadequate spray coverage on the underside of the leaves, or poor timing of the application. Even when sprays are timed for optimum effect, a second application may be needed about 10 days after the first, especially if infestations are

heavy, or egg hatch occurs over an extended period. Thorough spray coverage is essential for good control, and the product label should be strictly followed.

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