



Arkansas Plant Health Clinic Newsletter

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Wheat Diseases

We have received a number of oat and wheat samples that have tested positive for barley yellow dwarf virus (strain PAV). Barley yellow dwarf (BYDV) causes stunting of all plant parts and chlorosis (yellowing) of the leaves. On oats and wheat varieties with certain pigments, affected leaves may be red or purple. Often the disease appears in the spring in patches from 2-5 ft across, scattered in the field (top photo, left). This is because the virus is transmitted by infected aphids, particularly the bird oak cherry aphid in Arkansas. An infected aphid gets blown into a field and reproduces where it lands, with the colony spreading outward creating the patch effect. We have had a mild winter and even though aphid numbers appeared low last fall, apparently surviving aphids or aphids entering during the winter have continued to be more active than normal. Control of BYDV is difficult, because of its erratic nature. Although both seed treatment and foliar insecticides are registered for aphid control, we do not routinely recommend them because research has shown no economic return from their use most years.

Herbicide Injury – this is the time of year when we start receiving wheat samples with glyphosate injury or paraquat leaf spotting.

Glyphosate and paraquat are commonly used in Arkansas during early spring months to "burn down" weeds on crop fields prior to tillage or no-till planting. Sometimes these chemicals drift onto neighboring wheat fields resulting in various leaf, sheath, and head symptoms. Glyphosate is a systemic herbicide so if it drifts onto wheat, it is taken up and translocated to the fastest growing parts of the plant – this time of year the base of the upper leaves or the small head itself. Symptoms include stunting, distortion, and chlorosis (yellowing) of the leaf bases or developing heads. On some wheat varieties, pink or purplish pigments show up in the yellowed areas as the chlorophyll is destroyed (see middle photo, left). Paraquat drift results in small (1/16 – 3/8 inch) round or oval spots on leaves, sheaths, or heads; usually without borders and solid tan or solid white (at first). The spots will be scattered on tissue that was exposed during the drift, so new leaves may be unaffected. Usually, the injury from these spots is not much but sometimes growers have sprayed fungicides, thinking a foliar leaf spotting disease was developing.

The clinic has received samples and numerous reports of powdery mildew of wheat in southwest Arkansas, but also in east central (Grand Prairie) and the Arkansas River Valley. Powdery mildew is caused by an airborne fungus and favored by cool, humid (but not rainy) weather – pretty much what we have had this winter. It can be a fast-moving disease under the right conditions. Typically, it is not much of a problem most years in Arkansas except on sandy soils or river bottom fields or in lush, thick, heavily fertilized wheat. Control is by planting resistant varieties or the application of a triazole (Tilt, Propimax,



Sherrie Smith

Bumper, Quilt or Stratego) fungicide if the disease is widespread in a field and begins to threaten the upper 2-3 leaves. Strobilurin fungicides like Quadris or Headline by themselves are not considered quite as effective as the triazoles by most fungicide experts. Varieties reported as susceptible in past Wheat Updates or showing 30% or more powdery mildew severity at the SWREC (Hope) Wheat Variety Trials on March 27, 2006 include Agripro/Coker Coker 9553, Armor 2010, Armor 3015, Armor 3035, Armor 3330,

Genetics 8302, Delta Grow 4100, Delta Grow 4200, Delta Grow 4500, Delta Grow 5200, Delta King 7710, Delta King 7777, Delta King 7830, Delta King 7900, Delta King 9410, Dixie 900, Dixie 922, Dixie 9512, Dixie 9812, Dixie Bell Db1170, Dixie Bell Db2125, Dixie Bell Db2150, Dixie X959, Genesis M86, Genesis R023, Genesis R033, Genesis R043, Genesis Ro63, HBK 3266, Pat, Progeny 110, Progeny 133, Progeny 145, Progeny 166, Progeny 196, Terral TVX8332, Terral TVX83H504, Terral TV8450, Terral TV8502, Terral TVX8660, USG 3244, USG 3350, USG 3430 (2006 data collected by Michael Emerson, Sam Markell and J.D. Barham). Check with the local county extension agent for additional fungicide information or check the MP154 http://www.uaex.edu/Other_Areas/publications/PDF/MP154/WheatFolFung.pdf and always read the fungicide label before use.



Barley Yellow Dwarf
Photo by Van Dawson



Glyphosate injury
Photo by Matt Cordell



Powdery Mildew of Wheat
Photo by Sam Markell

Juniper Problems

Last year (2005) was not a good year for ornamentals in the home landscape due to

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drought. Juniper samples continue to arrive at the Plant Health Clinic with stress related disease issues. Seiridium canker, (synonym *Coryneum marginatum*), causes few problems to healthy trees but can be devastating to landscape plantings already stressed by drought or unfavorable planting sites. Seiridium canker is often associated with trees suffering from drought, winter damage, or other stress. Symptoms include yellowing and browning of foliage, followed by death of foliage on twigs, branches, or tops of trees. Elongated, flattened cankers form on branches and main stems. Often resin oozes from the site. Black fruiting bodies may be seen with a hand lens. Death of the branch is caused by girdling. Leyland Cypress and arborvitae are also susceptible to Seiridium canker. Management of the disease consists of removing cankered branches in winter or late spring and destroying them. No chemical controls are currently recommended.

Juniper Seiridium Canker-*Seiridium* spp.



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Seiridium Canker-*Seiridium* spp.



Photo by Anne Allen

Muscadine Grape

The Muscadine grape is native to the southeastern United States, found from Delaware to the Gulf of Mexico and westward to Missouri, Oklahoma, Kansas, and Texas. Muscadines require full sun and good drainage. They have less disease problems than other types of grapes, but we have had several samples come into the clinic with crown gall, a disease caused by a bacterium (*Agrobacterium tumefaciens*). The disease usually occurs in association with injury, and galls may form at ground level and all along the length of the trunk and cordons. Heavy infestations reduce yields and can kill vines. There is no treatment. Do not replant in that site for 3 seasons. Products containing *Agrobacterium radiobacter* are used to control crown gall. However, these products are not currently labeled for use in Arkansas. Avoid injuring the plants with weed eaters and other equipment.

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Muscadine Crown Gall- *Agrobacterium tumefaciens*



Photo by Dustin Blakey, formerly, University of Arkansas Cooperative Extension

Blueberry nutritional issue-abiotic



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Blueberries

Some of the state's blueberry growers are seeing a decline in the health and productivity of their blueberry fields. The blueberry is a shallow-rooted plant, requiring an open, porous soil for healthy growth. On a recent fruit tour, we took samples of blighted twigs for analysis. We will continue to monitor and take samples during the growing season in an effort to determine whether pathogens are present. Growers should be making every effort at good sanitation in their fields. Clean up pruned branches and dispose of. Submit soil samples to see if you need to amend your fertilizer regimens.

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