



# PLANT DISEASE AND INSECT ADVISORY

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## Be On the Watch for Fall Armyworms in Pastures

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I have received reports of fall armyworm infestations in southern and north eastern Oklahoma. In addition, I have seen some very severe fall armyworm infestations in numerous sorghum fields in Oklahoma over the past 3-4 weeks. While the sorghum infestations have just about completed their lifecycle, it appears that we have another generation that could cause some serious problems for grass pastures, seedling wheat and lawns.

A female fall armyworm moth can lay up to 1000 eggs over several nights on grasses or other plants. These eggs hatch a few days after being laid. Caterpillars grow through six molts before becoming mature, increasing in size after each molt. Mature fall armyworms measure 1½ inches long with a body color that ranges from green, to brown to black and have a prominent inverted white "y" on their head. However, you need to detect them long before they reach mature size. Small larvae do not eat through the leaf tissue, but instead, scrape off all of the green tissue and leave a clear membrane that gives the leaf a "window pane" appearance. Larger larvae feed voraciously and can completely consume leaf tissue. I have talked with producers that said they saw a grass pasture "disappear" in less than 4 days after they noticed armyworms feeding.



An Auburn University entomologist developed an easy-to-use scouting aid for pasture that consists of bending a wire coat hanger into a hoop, placing it on the ground and counting fall armyworms in the hoop. Examine plants at several locations along the field margin as well as in the interior. Look for "window paned" leaves and count all sizes of larvae. The hoop covers about 2/3 of a square foot, so a threshold in pasture would be an average of two or three ½ inch-long larvae per hoop sample.

It is crucial that you target smaller caterpillars (1/2 inches or less) for control for two reasons. First, the caterpillars don't cause really severe damage until they reach an inch long, and secondly, smaller caterpillars are much more susceptible to insecticide control than larger caterpillars. Lets hope that fall armyworm problems don't rear their ugly, inverted "y" heads, but keep vigilant just in case. In any case, we will not be out of the woods for a fall armyworm outbreak until we get a good killing frost. For control options, consult OSU Fact Sheet CR-7193; Management of Insect Pests in Rangeland and Pasture.

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## **Pre-harvest and late-season disease management for grapes**

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Oklahoma grape growers are probably well into the harvest season for many of the various varieties that are grown in the State, especially white varieties. Hopefully, pre-harvest and late-season diseases were minimal for those grapes harvested in the last two to three weeks. For varieties that have not been harvested yet, such as many of the red varieties that need to hang on the vine to mature for an extended period of time, there may still be some concern for bunch rots and other cluster diseases. Moderate temperatures and wet weather, like much of Oklahoma experienced last week, are conditions that are conducive for many of the disease issues that may still be of concern for those late maturing varieties. Fungicides may be warranted for some situations. However, growers should stop spraying as soon as possible, while limiting the damage to fruit and foliage by disease causing agents. Some fungicides can cause "off-flavors" in wine or disrupt the fermentation process if applied too close to harvest. Compounds like sulfur, copper, and captan should not be applied within 30-45 days of harvest. Also, note the pre-harvest interval (PHI) for fungicides. This interval can be found on the product label and should be followed. Vigilant scouting for the following diseases may be warranted for late maturing grape varieties as temperatures remain moderate, humid conditions persist, and potentially wet weather arise.

### **Botrytis Bunch Rot (Fig. 1)**

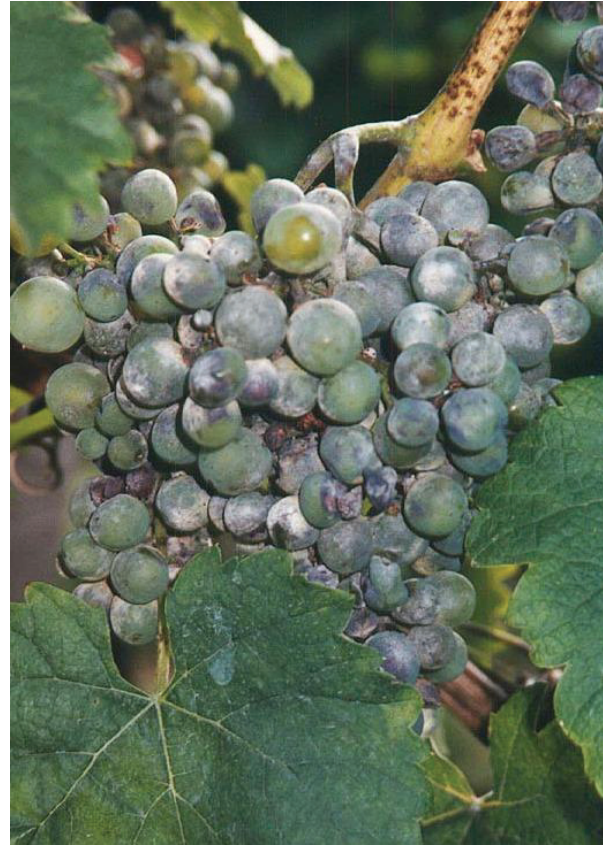
- Can occur throughout the season, but can be severe near harvest.
- Tight clusters, other fungal infections, bird damage, hail damage, etc. can increase the occurrence of botrytis bunch rot.
- Infection by the pathogen is favored by moderate to cool temperature, free water, and high humidity.
- Can spread rapidly during moist periods, especially near harvest.

#### *Pre-harvest Management*

- Anticipate prolonged wet and humid conditions for fungicide applications.
- Elevate is a protectant fungicide (does not enter the fruit or other plant material) that is effective in controlling botrytis bunch rot and is rain fast.
- Pristine at the higher labeled rate is also effective in controlling botrytis bunch rot. Observe the PHI of 14 days and DO NOT use this product if you have already made 4 applications of a strobilurin fungicide (MOA class 11) this season.
- If application of a fungicide is not an option, then pick fruit as soon as possible and before wet conditions arrive.



**Fig 1.** Botrytis bunch rot (Photo Credit: Tuner Sutton, NCSU)



**Fig 2.** Powdery mildew on fruit (Photo Credit: Tuner Sutton, NCSU)

### **Powdery Mildew (Fig. 2)**

- Fruit should be protected until 8° Brix. Fruit are considered resistant to infection by the fungus after this point. However, the canopy should be protected until harvest to facilitate ripening of fruit.
- Warm and humid conditions, without free-moisture can be very conducive for powdery mildew.

#### *Pre-harvest Management*

- Quintec, Endura, Pristine, stilet oil, and potassium salts (Armicarb, Nutrol, etc.) can be used for late-season powdery mildew control and will not affect the wine-making process.
- Sterol-inhibiting (SI) compounds such as Nova/Rally, Elite, and Procure are also effective in areas where populations of the fungus are not resistant to those products.

### **Late-season bunch rots**

Black rot and powdery mildew will not be of concern late in the season as Brix rise above 8°. However, as fruit continue to ripen bitter rot (Fig. 3), ripe rot (Fig. 4), and Macrophoma rot (Fig. 5) can be a problem on intact berries.



*Pre-harvest Management*

- Strobilurin fungicides, such as Pristine or Abound can be used to protect healthy fruit from these bunch rots. DO NOT use these products if you have already made 4 applications of a strobilurin fungicide (MOA class 11) this season.



**Fig 3.** Bitter rot of Vignoles



**Fig 4.** Ripe rot (Photo Credit: Tuner Sutton, NCSU)



**Fig 5.** Macrophoma rot (Photo Credit: Tuner Sutton, NCSU)

**Sour rot** (Fig. 6) can be a problem on fruit that has been “wounded”. This problem is a complex of fungi, bacteria, and insects that gain entry via wounds of fruit. Fungicides are not effective for this disease. The best method of managing this problem is to be diligent about preventing damage to fruit and controlling insect pests as part of a sound integrated pest management program.



**Fig 6.** Sour rot (Photo Credit: Eric Stafne, Oklahoma State University)

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