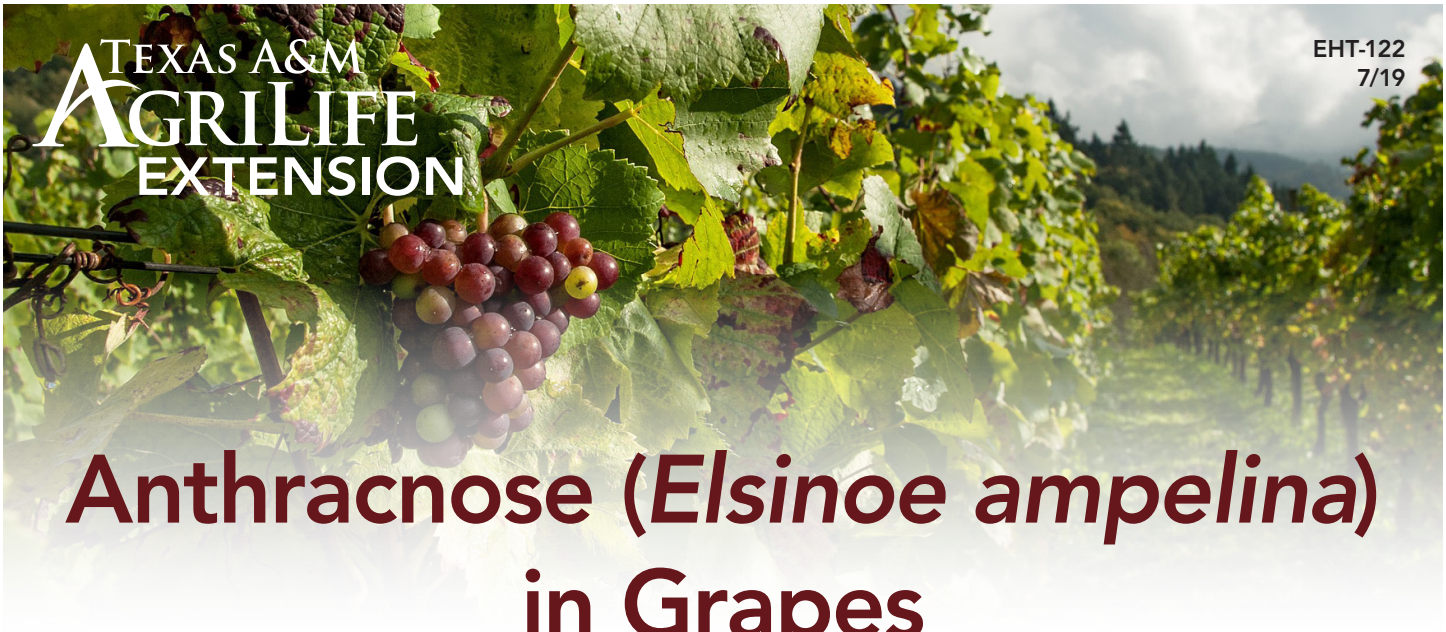

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# Anthracnose (*Elsinoe ampelina*) in Grapes

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In hot, humid areas of Texas, anthracnose can be a major problem in hybrid variety grape vines. Blanc Du Bois is highly susceptible. Lenoir, Lomanto, and other hybrids are susceptible as well but to a lesser degree.

Anthracnose is a damaging fungal disease that attacks new tender, green growing tissue including leaves, stems, and developing clusters. Anthracnose was one of the most serious problems in Europe before downy mildew, powdery mildew, and phylloxera were introduced. According to the Compendium of Grape Disorders and Pests, the disease was likely brought in on imported European *Vitis vinifera* cuttings before the US shipped our American cuttings with powdery and downy mildew and phylloxera back to Europe. Anthracnose is problematic to humid vineyards in Asia as well, where the grape breeders of Japan and Korea are breeding for anthracnose resistant varieties.

The anthracnose pathogen (*Elsinoe ampelina*) is very persistent and overwinters on infected canes and berries in a dormant state. The primary infections occur in spring as temperatures rise and vegetative structures (sclerotia) on infected canes become active. The sclerotia produce infectious fungal spores (conidia) that are spread by water droplets to new tissue. Spores infect leaves, shoots, berries, and tendrils where they become a secondary source of inoculum for spreading anthracnose during the growing season. The intensity of disease outbreaks increases with the amount of rainfall during the early months of the growing season before vine tissue becomes toughened by wind and heat.

## Identification

Tissues throughout the entire cluster—rachis, pedicel, and young berries—are vulnerable to infection. Evidence of anthracnose is most distinct on shoots and berries. Leaf symptoms can appear similar to other disease symptoms—such as Phomopsis—and can be less dependable in identifying anthracnose infection.

Lesions are likely first visible as small reddish-brown spots on berries (Fig 1.). As the lesions continue to grow larger, they become large black,

Figure 1: Small reddish-brown lesions are symptoms of early anthracnose.

irregular circles with gray necrotic tissue in the center (Fig. 2). Infected berries fail to ripen and must be removed. Infection of the pedicel (berry stem) and rachis (cluster stem) will appear as small, round lesions with sunken centers (Figs. 3 and 4).

Figure 2: Growing lesions with black irregular borders and gray necrotic centers.

Leaf lesions are small, circular brown spots. The spots in older lesions develop brown-black margins with gray necrotic centers (Fig. 5). The gray tissue often falls away leaving holes—known as shot holes—surrounded by dark tissue. As leaf symptoms progress, affected tissue continues to fall away, and leaves often take on a deformed, puckered appearance.

Figures 3 and 4: Round anthracnose lesions on pedicels and rachis with sunken centers.

Figure 5: Leaf lesions appear as circular brown spots and turn into necrotic centers with brown-black margins.

## *Management*

Controlling an outbreak of anthracnose begins by keeping the vineyard clean and spraying with fungicides. The following steps should be taken to manage an outbreak of anthracnose:

- **Dormancy:**
  - Burn or remove infected canes at dormant pruning. Infected canes are the primary source of the disease inoculum.
  - Spray lime sulfur on dormant vines *before bud break* and after pruning (to avoid noxious smells during pruning).
- **Growing Season:**
  - Spray fungicide applications vigilantly from bud break until berries are pea-size.

– Mow frequently and control weeds to increase airflow and decrease the relative humidity around vines.

– Remove infected berries before they fall onto the vineyard floor. Diseased canes and berries left on the vineyard floor harbor spores that can be splashed or windswept onto growing grapevine tissue during the growing season.

## *Fungicide Options to Control Anthracnose*

Sclerotia—the overwintering structures of anthracnose—are hard, dense masses of mycelium capable of remaining dormant for long periods. Once a vineyard becomes infected with anthracnose, the disease will return year after year unless the sclerotia are destroyed.

Lime sulfur is critical to effectively controlling anthracnose as it is capable of destroying these tough fungal structures. It is dangerously caustic to young buds, skin, eyes, and the sense of smell. The substance must be applied carefully according to the label directions *before bud break*.

Other fungicides labeled for control of anthracnose—such as Pristine, Abound, and Quadris Top—are useful if an infection has not yet gained a foothold and the spring weather is dry. However, **repeated application or improper use of these fungicides can potentially lead to the anthracnose pathogens developing resistance to their effects.**

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