

Commercial Crop Production

Field Crops - Grain Sorghum

DISEASE

Symptoms, source of inoculum and management of grain sorghum.

Anthracnose (*Colletotrichum graminicola*)

Symptoms: Infection first appears on the leaves as small tan to reddish-purple circular spots, which later enlarge and may unite to involve large areas of the leaf. Later, the centers of the leaf spots fade to grayish-tan. Infection on the leaf midrib is strikingly discolored. The leaf anthracnose organism also causes a stalk rot. The stalk rot phase of this disease usually follows the anthracnose stage on the leaves. The fungus enters the stalk directly through the rind or a wound in the rind and spreads to the interior of the plant. The lesions that form on the outside of diseased stalks usually have reddish to purplish margins and whitish centers. When infected stalks are split, the pith is red or purplish-red. Diseased stalks frequently break over at the base or at a node low to the ground. Poor head and seed development results from severe infections.

Management: Plant fungicide-treated seed. Practice at least a three-year rotation with other crops such as wheat, oats, barley, cotton and soybeans. Turn under old crop stubble after harvest. Fungicides are available (see Table I).

Charcoal Rot (*Macrophomina phaseolina*)

Symptoms: Injury from this disease usually does not become evident until the plant approaches maturity. Affected plants show poorly developed heads, light kernels, premature ripening, drying of the stalk and lodging. Diseased stalks are soft and discolored at the base, and the pith becomes shredded.

Management: Irrigate where possible.

Downy Mildew (*Sclerospora* sp.)

Symptoms: Systemically diseased seedlings are yellowed, stunted and frequently have a white downy growth on the underside of the yellowed leaves. Later, the plants have green-and-white-striped or mottled leaves. These plants may fail to head, produce sterile heads or form partially affected heads. Diseased plants usually are found in poorly drained areas.

Management: Follow cultural practices outlined for anthracnose.

Head Blight (*Fusarium moniliforme*, *Curvularia* sp., *Cladosporium* sp.)

Symptoms: Head blight is caused by several fungal organisms that infect plants from flowering to maturity, depending on high moisture conditions. (*Fusarium* head blight, the most destructive of sorghum head blights, occurs most commonly along the Gulf Coast production areas). The fungus is capable of infecting sorghum heads at and soon after blooming. Panicles and rachis branches are infected first, followed by infection of stalk tissue at and immediately below the head. Weak neck and stalk lodging may follow.

Gray Leaf Spot (*Cercospora sorghi*)

Symptoms: Small circular-to-elliptical dark purple or red spots appear on leaf surface. Later, leaf center becomes tan or brown, and spots elongate with gray spore masses covering the spots. Other hosts include corn, johnsongrass and cultivated grasses.

Management: Most varieties have adequate tolerance to this disease.

Zonate Leaf Spot (*Gloeocercospora sorghi*)

Symptoms: On the leaves, circular, reddish-purple bands alternate with tan or straw-colored areas that give a concentric or zonate pattern with irregular borders. Spots may occur along the margins of leaves or on other plant parts.

Management: Recommended varieties have some tolerance to the disease. Crop rotation and clean cultivation help.

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Table 1. Recommended fungicides, rates and application timing for Anthracnose disease of grain sorghum.

Target	Product Choices ¹ and Product Mode of Action Group ²	Rate ³	Time of Application	PHI ⁴	
Anthracnose (<i>Colletotrichum graminicola</i>)	Adastrio	3,7,11	7-9 fl oz	See label	30
	Aframe	11	6-15.5 fl oz	Prior to disease development	14
	Aproach	11	12 fl oz	Prior to flowering	-- ⁶
	Evito 480 SC	11	2-4 fl oz	Prior to disease development	21
	Headline	11	6-12 fl oz	Apply no later than 25% flowering	-- ⁵
	Headline SC	11	6-12 fl oz	Apply no later than 25% flowering	-- ⁵
	Nexicor	3,7,11	7-13 fl oz	Prior to disease development	21
	Priaxor	7,11	4-8 fl oz	Prior to disease development	21
	Quadris	11	6-15.5 fl oz	Prior to disease development	14
	Quilt	11,3	14 fl oz	Prior to disease development	21
	Quilt Xcel	11,3	10.5-14 fl oz	At first appearance of disease	21
	Topguard	3	7-14 fl oz	Prior to disease development	7
	Topguard EQ	3,11	5-7 fl oz	Prior to disease development	30

¹Reference to commercial or trade names is made with the understanding that no discrimination or endorsement of a particular product is implied by LSU or the LSU AgCenter.

²Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

³Rates are the amount of formulation (product) per acre unless otherwise indicated.

⁴Preharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

⁵Must be applied prior to 25% flowering.

⁶Must be applied prior to flowering.

The grain sorghum section was revised October 2022 by Boyd Padgett.