Cooperative Extension Service • Michigan State University

Extension Bulletin E-1979 (New) June 1986

AG FACTS

Sorghum Diseases

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This bulletin provides useful information for diagnosing crop diseases in the field and the plant clinic laboratory. It will assist crop disease consultants and their scouts, state agricultural advisers, agribusiness representatives, pest control dealers and applicators, county agricultural agents, students in plant sciences and growers throughout Michigan.

The descriptions of symptoms, environmental conditions favoring disease, method of transmission and recommended control are brief, but complete. The calendar indicates the month in which symptoms appear and the plant part showing the symptom. More detailed information, including photos of disease symptoms, is available in the sorghum disease compendium and in Extension bulletins. Contact your county Cooperative Extension Service office or the MSU Bulletin Office to obtain these publications.

For information on resistant hybrids and varieties, chemical control and other measures, consult recent literature, competent area specialists, Extension plant pathologists or informed seed suppliers.

SORGHUM DISEASES

DISEASE	MONTH SYMPTOMS APPEAR						PLANT PART SHOWING SYMPTOMS				
	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	ROOTS	LEAVES	STEM	HEAD	ENTIRE PLANT
Bacterial Leaf Stripe			•	•				•			
Bacterial Leaf Streak		•	•	•	•			•			
Bacterial Leaf Spot			•	•				•			
Downy Mildew				•				•		•	
Anthracnose			•	•	•			•	•		
Sooty Stripe			•					•			
Fusarium Stalk Rot			•	•	•		•	•	•	•	•
Head Smut				•	•					•	
Maize Dwarf Mosaic Virus			•	•				•			•

SORGHUM DISEASES

DISEASE	SYMPTOMS	ENVIRONMENTAL CONDITIONS FAVORING DISEASE	METHOD OF TRANSMISSION	RECOMMENDED CONTROL	SPECIAL NOTES
Bacterial Stripe *(Pseudomonas andropogonis)*	Bacterial stripe appears as tannish brick red to dark purplish-red stripes restricted to the interveinal areas of the lower leaves; stripes range from less than 1 in. to the length of the leaf blades; a slime or bacterial exudate appears on underside of affected portion.	Warm, humid weather.	Bacteria is carried over from season to season on seed, infected plant material and in the soil. Pathogen is spread by splashing rain, insects and cultivation when foliage is wet.	Plant clean seed; rotate crops and clean plow to destroy plant residue.	
Bacterial Leaf Streak *(Xanthomonas campestris)*	Narrow, water-soaked, translucent streaks about ⅛ in. wide by 1 to 6 in. long appear; between seedling stage and maturity, light yellow, bead-like drops of exudate stand out on young streaks; streaks become narrow and red-brown; after a few more days the streaks turn red. After the bacterial exudate dries it forms thin white or cream colored scales.	Warm, humid weather.	Bacteria survives from season to season on seed, infected plant material and in the soil. Bacteria is spread by splashing rain, insects and cultivation.	Plant clean seed; rotate crops and clean plow.	
Bacterial Leaf Spot *(Pseudomonas syringae)*	Spots appear circular to irregularly elliptical, dark green and water-soaked on leaves. Spots turn red in a few hours, with light-colored centers and red borders.	Warm, humid weather.	Bacteria is seed-borne; survives on infected crop residue left in the field; spread by splashing rain, insects, and cultivation.	Plant clean seed, rotate crops and clean plow.	Hosts are corn, sudangrass, pearl-millet and foxtail millet.

SORGHUM DISEASES *Continued*

DISEASE	SYMPTOMS	ENVIRONMENTAL CONDITIONS FAVORING DISEASE	METHOD OF TRANSMISSION	RECOMMENDED CONTROL	SPECIAL NOTES
Downy Mildew *(Sclerophthora macrospora)*	Infected plants develop thick, stiff, twisted, curled, puckery leaves with long, yellow-tan-brown stripes. Upper leaves on young plants exhibit mottling that closely resembles maize dwarf mosaic virus.	Soils saturated for 24 to 48 hours a few weeks after planting. 75° to 85°F is optimum temperature for sporulation.	Fungus survives in the soil; soil saturated with water for 24 to 48 hours is necessary for germination of zoospores, which release infective zoospores. Generally, there is no secondary spread of the disease.	Ensure adequate soil drainage; avoid planting in areas that stay wet for more than 48 hours.	
Anthracnose *(Colletotrichum graminicola)*	Small, circular to elliptical, ⅛ to ¼ in. diameter spots appear. Spots may be tan, orange, red or blackish-purple depending on the variety affected. Small fruiting bodies (acervules) with whisker-like structures (satae) appear in the spots.	High temperatures, long periods of cloudy weather and free water on the leaves.	The fungus overwinters as a saprophyte on plant residue and seed.	Plant resistant hybrids, clean plow and rotate crops.	May also cause stalk rot.
Sooty Stripe *(Ramulispora sorghi)*	On older leaves, small purplish-tan spots appear; they enlarge rapidly, surrounded by a broad yellow margin; leaves often turn yellow and die.	Warm, humid weather.	Fungus survives from season to season on crop residue; spores are spread by wind and splashing rain.	Clean plow to reduce crop residue.	
Fusarium Stalk Rot *(Fusarium* spp.*)*	Plants die prematurely and lodge; heads are dull and grain is light weight; pith disintegrates in area where stalk has broken and is red in color.	Cool, wet weather following hot, dry periods.	Fungus survives in soil and on crop residue.	Maintain a balanced soil fertility program; use recommended plant populations.	Sorghum grown in a fallow cropping system develops less stalk.

SORGHUM DISEASES *Continued*

DISEASE	SYMPTOMS	ENVIRONMENTAL CONDITIONS FAVORING DISEASE	METHOD OF TRANSMISSION	RECOMMENDED CONTROL	SPECIAL NOTES
Head Smut *(Sporisorium reilianum)*	Entire or portion of head is transformed to black powdery spores; portion of head can be sterile or leafy; smut becomes evident at heading time.	Cool, dry soils.	Pathogen is soil-borne; infection occurs from soil-borne spores.	Plant resistant varieties.	
Maize Dwarf Mosaic Virus (MDMV)	A mottled or striped pattern of light and dark green appears on younger leaves; mottling is replaced by a red leaf symptom.	Weather conducive to high aphid populations; cool nights favor symptom expression.	MDMV is aphid and mechanically transmitted.	Plant resistant varieties; control grassy weeds in and next to sorghum fields.	MDMV appears more frequently in counties that border Ohio and eastern Indiana.

See also the new sorghum compendium available through the American Phytopathological Society, 3340 Pilot Knob Road, St. Paul, MN 55121.

7:86-2M-New-SDC/RP-Price: 25¢, single copy free to Michigan Residents.
File Key: 22.14