

SORGHUM DOWNY MILDEW – PART 2: CONTROL

The most stable, effective control of sorghum downy mildew (SDM) integrates three methods: fungicide seed treatment, resistant hybrids, and crop rotation, which reduces the survival spore (oospore) populations in soil over several years.

Crop Rotation:

Severe outbreaks of SDM since 2000 in several counties between Houston and Victoria have often been associated with sorghum monoculture. Initially, the disease is not noticeable in a field, as infected plants tend to be obscured by healthy plants. However, this allows a stealthy build-up of survival spores so that in a subsequent year, the disease dramatically appears (Fig. 1).



Fig. 1. Wide-spread occurrence of sorghum downy mildew noticeable as yellowing in plants.

If SDM occurred in a field, that field should be out of sorghum for at least two years. Corn is the only other crop susceptible to SDM, if it is not planted late. However, infected corn produces little or no oospores. Johnsongrass is also susceptible to SDM, so this weed should be controlled in a rotation program. After the rotation out of sorghum, these fields should be planted with a hybrid resistant to the pathotype in that field.

Resistant hybrids:

If you do not have SDM, you do not need to consider SDM resistance when you are selecting a hybrid to plant.

If you have an outbreak of SDM, contact your county agent to arrange a test of the strain (pathotype) of the fungus causing it and for hybrid recommendations for future crops. There are two pathotypes present in Upper Coast Counties. Pathotype 6 is less common than pathotype 3, and there are fewer hybrids resistant to it than to pathotype 3.

Seed treatment fungicide:

SDM outbreaks have been associated with metalaxyl resistance in both pathotypes. Currently, there is no effective replacement seed treatment fungicide for controlling SDM.

In fields where there has been no SDM, metalaxyl should be used on a preventative basis for seed treatment as follows:

Varieties susceptible to pathotype 3 or 6:
Use a metalaxyl rate equivalent to 1 oz. (dry weight) active ingredient/100 lb seed. For example, the rate for Allegiance™-FL is 3.0 fl oz./100 lb. seed. The corresponding rate for mefenoxam (also known as metalaxyl-m), the active isomer of metalaxyl, is 0.5 oz. (dry weight) active ingredient/100 lb seed. For example, the SDM control rate of Apron XL® LS, a commercial formulation of mefenoxam, is 1.28 fl. oz. formulation/100 lb. seed.

Varieties resistant to pathotype 3 or 6:
Use a rate of metalaxyl labeled for SDM control with resistant varieties, which ranges from 0.25 to 0.5 oz. (dry weight) active ingredient/100 lb. seed.

Refer to the fungicide product label for additional information, particularly for allowable rates, as well as precautions.

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