Anthracnose of Sweet Corn

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ANTHRACNOSE OF SWEET CORN

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A disease known as corn anthracnose has become a potential limiting factor in the cultivation of sweet corn in certain Indiana areas. Given favorable conditions for disease development, anthracnose can reach epidemic proportions.

Anthracnose is caused by the fungus Colletotrichum graminicola. The fungus overwinters in diseased plant debris. In the spring the fungus produces spores which may be splashed by rain droplets to young corn seedlings where primary sites of infection may occur. Under favorable conditions of high humidity and moderately warm temperatures, spores are produced in primary lesions and subsequently spread to healthy plants by wind, rain and insect movement.

Symptoms of Anthracnose

Symptoms are characterized by tan to light brown lesions which may occur on leaves, stalks, and ears. Typical lesions are round to oval shaped and may reach a size of 1/4 to 3/4 inch in diameter. Lesions begin as tiny pin-point chlorotic or yellow flecks. As they enlarge, lesions may appear water-soaked, especially those occurring on stalks. Lesions often coalesce causing extensive areas of host tissue, particularly the leaves, to turn brown and die. Older lesions may be surrounded by an orange to red margin depending upon the particular corn hybrid grown. Field corn, which is more resistant to anthracnose than sweet corn, may exhibit symptoms very early in the growing season and again at late maturity.

The most significant symptom for diagnosis is the presence of tiny black specks which occur within the tan or brown central area of each lesion. These black specks are the spore producing structures (acervuli) of the fungus.

Cultural Control

Studies have shown that the anthracnose fungus is capable of overwintering (surviving) for at least one winter in sweet corn debris. Thus fields known to have had sweet corn infected with anthracnose, should not be planted to sweet corn for at least 2 and preferably 3 years.

Plow under all corn debris to hasten
degradation of plant and fungal material. Minimum tillage practices that leave corn debris on the soil surface should be used with caution in fields where the disease is present. These control practices are especially important since genetic resistance to anthracnose may not be available in commercial sweet corn hybrids at this time.

Once sweet corn is infected with the anthracnose fungus, growers may minimize yield losses by harvesting at the earliest maturity possible.

Chemical Control

No fungicide formulations are currently registered for control of sweet corn anthracnose. Research is being conducted on the feasibility of fungicide applications as an aid to anthracnose control. Results thus far are inconclusive. Conditions which favor disease development are those which make application of fungicides most difficult and reduce their effectiveness i.e., high humidity, heavy dew, warm temperature, and abundant rainfall. Until fungicides have been proven effective in the control of sweet corn anthracnose, growers must depend upon cultural control.

Figure 1. Leaf symptoms of sweet corn anthracnose.

Figure 2. Stalk symptoms of sweet corn anthracnose.