



Figure 29. Anthracnose lesion on strawberry fruit.

Midwest when abnormally high temperatures and rainfall occur during fruit set and harvest. Spores are dispersed primarily by water splash. Once the disease is established in the field, the fungus can overwinter on infected plant debris, primarily old-infected, mummified fruit.

Plant Parasitic Nematodes

Plant parasitic nematodes are microscopic round worms and are common in soils throughout the Midwest. Lesion and root-knot nematodes are probably the most destructive kinds in Midwestern plantings. These organisms restrict root growth by feeding directly on roots. This makes plants less efficient at taking up water and minerals from the soil. Nematodes can also cause strawberry roots to be more susceptible to root-rotting fungi. Strawberry plantings in nematode infested soils are not long-lived. Production will decline rapidly after one or two seasons. Nematode damage is most common and most severe in replant situations, because preceding crops increase nematode numbers, and high populations of these parasites may be present when the young plants are set. Under these conditions, strawberries never develop strong root systems.

Symptoms

Strawberry plants infested with nematodes are stunted and show symptoms of mineral deficiencies and water stress, particularly as the berries form. Because nematodes are unevenly distributed in the field, damaged plants tend to occur in patches. Heavily infested plantings decline rapidly.

Root-knot nematodes cause the formation of knots or galls on fine roots. Heavy galling may cause abundant adventitious root formation and lead to a “whiskery root” condition. Other types do not form such distinct root symptoms. Infested roots are not well developed. Lateral roots may be few. Roots attacked by lesion nematodes are dark in color.

Causal Organisms

The lesion nematode (*Pratylenchus penetrans*) and the northern root-knot nematode (*Meloidogyne hapla*) are common in the Midwest. The dagger nematode (*Xiphinema americanum*) is frequently found. The dagger nematode is the vector of tomato ring-spot virus, which it can acquire from common weed hosts, such as dandelion. Ring nematodes (*Criconebella* spp.) and lance nematodes (*Hoplolaimus* spp.) are also found in soils in the Midwest. Their effect on strawberries is not known.

Use of Disease-Resistant Cultivars

In the integrated disease management program, the use of cultivars with disease resistance must be emphasized. Many commercial cultivars have resistance and/or tolerance to leaf spot, leaf scorch, red stele, verticillium wilt, and powdery mildew. The more disease resistance within the program, the better. Table 2-1 (on page 27) lists ratings for disease resistance in several of the more commonly grown cultivars. This type of information is available from a number of sources. Most nurseries should be able to provide information on disease resistance for the cultivars they sell.

Cultural Practices for Disease Control in Strawberry

The use of any practice that provides an environment within the planting that is less conducive to disease development and spread should be used. The practices described here should be carefully considered and implemented in the disease-management program.

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