samples, taken when soils are cold, are not accurate and do not give the grower sufficient time to apply a preplant nematicide. Information on collecting soil samples and submitting them for analysis is available from your Extension service.

Use of Disease-Resistant Cultivars

In an organic disease-management program where emphasis is placed on reducing overall fungicide use, it is essential to identify any available disease resistance and use it. Unfortunately, a high level of resistance to most of the major diseases is not available in most commercially grown raspberry and blackberry cultivars in the Midwest. Thus, the disease-management program must rely mainly on the use of cultural practices and efficient fungicide use. Whereas resistant cultivars are not generally available for most diseases, cultivars do vary greatly in their level of susceptibility to certain diseases. If resistance is not available, those cultivars that are highly susceptible to important diseases at least should be avoided.

Notes on Disease Resistance

Phytophthora Root Rot

Phytophthora root rot is most serious on red raspberries and some of the hybrids. The black raspberry cultivars Cumberland and Munger are reported to be susceptible. The cultivars Bristol, Dundee, and Jewel appear to be moderately to highly resistant. Among red raspberry cultivars, none are immune to the disease, but cultivars do differ greatly in their level of susceptibility. Among cultivars grown in the Midwest and Northeast, Titan and Hilton are extremely susceptible, with Festival, Heritage, Reveille, and Taylor moderately to highly susceptible. Newburgh is somewhat resistant, and Latham, Boyne, Killarney, and Nordic are considered to be fairly resistant.

Verticillium Wilt

Red raspberries are more tolerant than black raspberries. Cuthbert and Syracuse appear to be resistant under field conditions. Black raspberries are highly susceptible. Blackberries are susceptible, but the disease is seldom a serious problem.

Orange Rust

Red raspberries are immune. Other brambles are susceptible. Of blackberries, Eldorado, Raven, Snyder, and Ebony King are reported to be resistant. The Arkansas erect types (Arkansas Indian series) are reported to be resistant to orange rust.

Virus Diseases

Mosaic Virus

Blackberries are resistant. Black and purple raspberries are more severely affected than red raspberries. Of the purple or black raspberries, New Logan, Bristol, and Black Hawk are tolerant, and Cumberland is susceptible. The red raspberries Milton, September, Canby, and Indian Summer are resistant because the aphid vectors of the virus avoid them.

Leaf Curl Virus

Blackberries are symptomless. All raspberries are susceptible.

Tomato Ringspot Virus

Red raspberries and blackberries are susceptible.

Raspberry Streak

Black and purple raspberries are susceptible.

Cultural Practices for Disease Control in Brambles

The use of any practice that reduces or eliminates pathogen populations or creates an environment within the planting that is less conducive to disease development must be used. It is important to remember that many diseases, such as viruses, cannot be controlled with fungicides. Thus, cultural practices are the major means for their control. When fungicides are used, certain cultural practices, such as maintaining narrow row width or cane thinning to open the plant canopy, will greatly increase the efficacy of the fungicide program by allowing better spray penetration and promoting faster drying of susceptible plant parts. The practices described in the next section should be carefully considered and implemented whenever possible in the disease-management program.