



CHAPTER 5 Grapes

General

Diseases represent a major threat to the commercial production of grapes in the Midwest. Climatic conditions are conducive to the development of several major grape diseases, including black rot, downy mildew, and powdery mildew. Each of these diseases has the potential to destroy the entire crop under the proper environmental conditions. In addition, there are several other diseases (Phomopsis cane and leaf spot, Botrytis gray mold, Eutypa dieback and crown gall) that can also result in economic loss. It is important to note that most of these diseases can occur simultaneously within the same vineyard during the growing season.

The development and implementation of Integrated Pest Management (IPM) programs for grapes has great potential for improving our current pest control strategies and reducing our use of pesticides in general. Much of the potential for reducing pesticide use will be in the area of insect control. Many of the IPM methods for monitoring and controlling insects give the grower more flexibility in the decision-making process as to whether insecticides are needed, which insecticides to apply, and when to apply them.

Our currently available disease-management programs and recommendations have much less flexibility, and the level to which we will be able to reduce fungicide use is largely limited by the degree of susceptibility of the cultivars being grown and environmental conditions during the growing season (the most important of which is wet rainy weather). The introduction of new fungicide chemistry, such as the sterol inhibitors or SIs (Bayleton, Rubigon, and Nova), and the strobilurin fungicides (Abound, Savron, and Pristine), as well as new information related to the disease cycles of the various pathogens are providing opportunities for new disease control strategies that can be implemented in IPM programs.

Integrated Management of Grape Diseases

Developing a disease-management program that successfully controls all of the important grape diseases simultaneously presents a unique challenge. In order to accomplish this, all available control methods must be **integrated** into one overall disease-management program. The disease management program should emphasize the integrated use of disease resistance, various cultural practices, knowledge of disease biology, and the use of approved fungicides or biological control agents or products when necessary.

Identifying and Understanding the Major Grape Diseases

It is important for growers to be able to recognize the major grape diseases. Proper disease identification is critical to making the correct disease-management decisions. In addition, growers should develop a basic understanding of pathogen biology and disease cycles for the major grape diseases. The more one knows about the disease, the better equipped one is to make sound and effective management decisions. Color photographs of disease symptoms on grapes, as well as in-depth information on pathogen biology and disease development, can be found in these publications:

Compendium of Grape Diseases — Published by the American Phytopathological Society, 3340 Pilot Knob Rd., St. Paul, MN 55121. Phone: 612-454-7250, 1-800-328-7560. This is the most comprehensive book on grape diseases available. All commercial growers should have a copy.

Midwest Grape Production Guide — Bulletin 815, Ohio State University Extension. Can be obtained from Ohio State University Extension, Media Distribution, 385 Kottman Hall, 2021 Coffey Road, Columbus, OH 43210-1044. Phone 614-292-1607.

