GRAPE DISEASE AND INSECT PROBLEMS IN 1956

Disease and insect control are of prime importance in economical grape production. Adequate control is necessary, not only to protect the current year's crop, but also to keep the vines in a healthy productive condition. Any disease or insect damage which adversely affects the vine during the growing season will cause a delay in maturity of the wood and may result in consequent winter injury. Most so called winter injury is due to improper ripening of the wood, as healthy grape wood will withstand temperatures below those normally prevalent during the winter in the Niagara Peninsula.

DISEASES

Dead-Arm disease is the most serious and least recognized disease in Niagara Peninsula vineyards. A survey by Mr. G. C. Chamberlain, of the Laboratory of Plant Pathology, of 9 Concord vineyards, 15-18 years of age, indicated that the productiveness of over 40% of the vines was more or less impaired due to damage by Dead-Arm disease. A survey of over 100 vineyards by our fieldman John GHETTI in 1955 indicated that the disease is present to some extent in nearly every Concord vineyard over 10 years of age, and that the percentage of infected vines ranged as high as 15% in some vineyards. Thus, these two surveys indicate that the growers are losing a large amount of fruiting wood each year with consequent loss of crop.

The recommendations for control of this disease have been to remove and burn the infected vines or sections of the vines.

It has also been suggested that the growers adopt the practice of bringing up renewals from the below ground portion of the trunk and replace the main framework of the vine before the disease has spread throughout the vine. The time of removal of infected wood does not seem to be of major importance. The shoot and leaf symptoms are most prominent in June, but may be masked over by later growth of the vine. However, this does not mean that the vine has recovered, and any vines marked in June for partial or total removal should be removed either then or during the regular pruning season.

Since the Dead-Arm fungus gains entrance to the vine through prominent pruning stubs, all cuts should be made as close as possible to the main trunk and arms. The lesions on the current year's growth as shown in figure 1 are easily recognized at pruning time. Thus, the canes selected for the next year should be free of these lesions as they provide a source of infection for the following seasons growth. Particular attention to this detail at pruning time will aid considerably in reducing the primary source of later cane and shoot infection.

The Laboratory of Plant Pathology at St. Catharines has also been conducting experiments on control of the infection of the current seasons growth. Mr. Chamberlain, who has carried out these tests, has recommended spraying with bordeaux 5-5-100 when the third leaf of the shoot unfolds. This treatment reduced the percentage of infected shoots by 35% in 1955. Applying this spray, plus a delayed dormant application of DN 289 at 2 quarts per 100 gallons of water, reduced the incidence of shoot infection by over 75%. We consider that this spray program represents a significant step forward in the control of this disease, and would advise any grower who has a severe outbreak of Dead-Arm to consider following this program.

DOWNY MILDEW

Downy Mildew attacks both the leaves and the clusters of the vine. Some varieties such as Fredonia, Van Buren, President and Seibel 7053 are more susceptible to cluster damage, which is less noticeable to the grower, but which causes the most loss in crop. Other varieties which generally show leaf symptoms first are Agawam, Catawba and Delaware. Experiments over a period of several years have shown that varieties susceptible to Downy Mildew should receive a three spray program. One pre-bloom and two post-bloom sprays generally are necessary for adequate protection. We have found that a twice weekly check of susceptible varieties during the Mildew season enables us to prevent the spread of this disease, should an outbreak occur due to hot, humid weather conditions. The choice of materials for control is up to the individual grower. We are using fixed copper and hydrated lime as we have found that bordeaux causes leaf burning on the French hybrid types, and research done in New York State showed loss of crop due to bordeaux injury on standard varieties.

POWDERY MILDEW

Powdery Mildew, while not as serious a problem as Downy

Mildew, may cause severe leaf damage, and delay maturity of the crop and the wood. The most susceptible varieties are Seneca, Niagara, Agawam and other Rogers hybrids, as well as several of the French hybrids. Powdery Mildew usually attacks later in the season than does Downy Mildew. The most severe infections in the last five years occurred in mid August. Powdery Mildew is easily controlled by application of sulphur at the first sign of the disease. The regular post bloom spray, as recommended in the spray calendar, is a good preventative spray for control of Powdery Mildew.

INSECTS

Grape Berry Moth is the most serious insect pest in many Niagara Peninsula vineyards. A check of fruit from over 150 vineyards throughout the Peninsula at harvest in 1955 indicates that this insect is becoming more widespread throughout the grape growing area than many growers realize. Ideal weather conditions for the development of an extra brood of this insect during the 1955 growing season resulted in many clusters being damaged at harvest time. This may result in a large overwintering population which could attack the 1956 crop at the blossom stage. We would strongly recommend that any grower who noticed Berry Moth damage at harvest time apply a pre-bloom spray of D.D.T. for control of Berry Moth. Tests conducted by the Entomology Laboratory at Vineland indicate that the pre-bloom spray for Berry Moth control is the most important spray in the three spray program. However, a complete program is necessary if the grower wishes to eradicate this insect.

Grape Leafhopper has not been a serious threat since the introduction of D.D.T. However, it can build up fast if a grower omits spraying entirely. The control for flea beetle and rose chafer is dealt with adequately in the spray calendar.

We would like to stress the importance of following the spray calendar and spray service bulletins of the Department of Agriculture. Many years of research work by specialists in their respective fields have gone into the development of these spray programs. We, as growers, can best show our appreciation by making use of these recommendations.

RESEARCH DIVISION
BRIGHT'S WINES LIMITED.

april 23rd 1956
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