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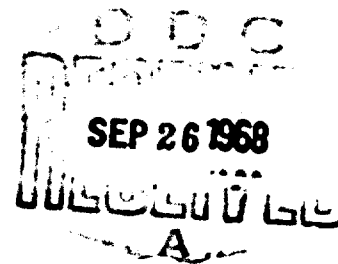
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DISEASES OF GRAPES

~~PLANT PROTECTION~~
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Mildew (*Plasmopara viticola* Berl. et de Toni.) developed intensively in the southeastern regions of the Ukraine, in the steppe and the foothill areas of the Crimea and at the North Caucasus. A moderate development of the disease with the foci of strong manifestation was observed in Moldavia and the neighboring areas of the Ukraine. Grapes were slightly affected in the Republics of Transcaucasia and on the Black Sea coast of the caucasus.

The epiphytotic disease of mildew in the Dnepropetrovskaya and Zaporozhskaya Oblasts was caused by the exceptionally favorable weather conditions during the spring-summer period (abundant rainfall and optimal temperature). The development of the disease progressed very intensively. At the beginning of August 8% of the leaves and 55-92% of the berries were already affected. By the time of harvesting, the affected leaves fell off. Only at the vineyards which were treated in time the harvest was fully preserved.

Vineyards were affected the most in the Luganskaya and Donetskaya Oblasts. Because the climate here is highly continental, intensive development of mildew occurs here extremely rarely. Therefore, no preventive treatment is usually done.

In 1964, the first appearance of mildew was registered at the beginning of July. After abundant rainfall in July-August, the disease was developing intensively and caused much harm to the vineyards. Wherever treatment was not given mass falling of leaves was observed and the affection of the berries reached 50-70% (in one of the kollektives of Donetskaya Oblast).

spraying with Bordeaux mixture prevented losses of the harvest in many vineyards.

In the Moldavian SSR, outbreaks of the sterile part of the Grapes, which led to the loss of the harvest to mildew were caused by the absence of preventive measures and a lack of spraying apparatus and chemical preparations. As a result of this, because of insufficient treatment, the harvest in many vineyards was 15-17 centners per one hectare and in some vineyards the crop was completely ruined (Kolkhoznoye Shchast'ye Perokopa -- area of 28 hectares, Kolkhoznoye Shchast'ye -- 100 hectares, and Novaya Zhizn' -- 150 hectares), while with preventive measures (Kolkhoznoye Gvardeystvo, Kolkhoznoye Upravleniye and others) average harvest was from 70 to 100 centners per one hectare.

In the regions of northern Caucasus weather conditions were also favorable for the development of the pathogenic agent. As many as 10 generations of fungus were registered in the Krasnodarskiy Krai and Checheno-Ingush ASSR. The disease developed very extensively during the first half of summer. However, repeated spraying with Bordeaux mixture (4-6 sprayings at the vineyards of Krasnodarskiy and Stavropol'skiy Krai and Rostovskaya Oblast; 6-8 sprayings in the Checheno-Ingush ASSR, Kabardino-Balkarsk ASSR and in North Ossetian ASSR) prevented a mass contamination of the leaves and grape clusters with the fungus. Individual farms neglected to give chemical treatment to their vineyards and, as a result of this, their grape clusters were contaminated (up to 25-40%) and their yield dropped (Kolkhoz imeni Pervoye Maya in the Checheno-Ingush ASSR, Kolkhoz imeni Lenin in the Krasnodarskiy Krai and others).

The experience of the grape growers of the Groznenskiy Rayon, Checheno-Ingush ASSR, deserves attention. Here they started controlling mildew in early spring. They sprayed their vineyards twice with exterminating solutions of the DNOK preparation, 8%-ferrous sulfate heptahydrate or 6%-Carbolineum and then treated the vines with Bordeaux, which limited the growth of the disease during the spring-summer period.

In the Moldavian SSR, under the conditions of the dry and long autumn period of 1963, the stock of the infectious elements of the fungus decreased sharply. The cold and dry weather in April and May of 1964 prevented an early spread of oospores and contamination of the grape leaves. Only at the end of May and the beginning of June, when warm weather with long periods of rain set in, conditions became favorable for the first contamination.

The first report of mildew was observed on May 25th at the district level of the Novomoskiy Rayon at the grape fields enclosed on all sides by forest belts.

The appearance of the disease in other Rayons (Tiraspol'skiy, Dubosarskiy, Orgeyevskiy, Kobovskiy and others) occurred between the 21st and 23rd of June. A month later than in 1963. After that, because of the high temperature (30-30°), the development of the fungus was depressed. The disease started to develop noticeably only since the second half of July when it was no longer dangerous for the yield.

Favorable conditions for the development of mildew developed in individual ecological "niches." An improper chemical treatment resulted in a considerable damage to the vineyards caused by the disease. For example, in the Orgeyevskiy rayon (Kolkhoz imeni 22nd Congress, CPSU), the White Shusla variety occupying an area of 36 hectares was strongly affected by mildew (leaves -- 10%, clusters -- 80%). The farm suffered a loss of 59,620 rubles. In the Pobeda Kolkhoz of the Floreshtskiy Rayon, the vines in a vineyard of 10 hectares were not tied up, and untimely spraying with Bordeaux mixture did not produce the proper effect. In this connection, the contamination of the grape clusters and leaves reached 100% and the yield did not exceed 20 centners per hectare.

At the same time, the Put' Lenina Kolkhoz of the Floreshtskiy Rayon gave their vineyards three timely treatments with Bordeaux mixture to control the mildew. Within the entire area (16 hectares) the grape clusters of a European mixture of varieties (predominantly Cabernet and Traminer*) were affected by mildew not more than 2%; net income was 1420 rubles per each hectare. Another brigade of the same kolkhoz (48 hectares) sprayed their vineyard with Bordeaux mixture only once, as a result of which the contamination of the leaves increased to 95% and that of the clusters to 71%. Net income (after deducting the expenses) was two times less than that of the first brigade.

The disease developed less intensively in the western regions of the Ukraine bordering with Moldavia. In the Transcarpathian Chernovitskaya and Vinnitskaya Oblasts, the rainfall during the summer was much lower than an average for many years. Therefore, the affection by mildew for this zone

*Transliterated from Russian.

was less than usual. It was sufficient to spray 2-4 times to prevent losses from mildew.

The Georgian SSR and the Azerbaijan SSR had unfavorable conditions for the development of mildew. The affection of the leaves did not exceed 3-8%, and that of the grape clusters -- 1-2%, while in 1963 the leaves were affected 41-90% and the clusters 3-48% (Tskhaltubskiy, Goriyskiy and other rayons).

In the Ukraine, North and Caucasus and Moldavia, the infectious stock dormant during winter was quite sufficient to cause an epiphytotic disease in 1963, when the weather conditions were favorable. It should be planned here to have the usual number of chemical treatments of the vineyards. A less intensive development of mildew is expected in the Republics of Transcaucasia.

Oidium (*Oidium tuckeri* Berk.) developed strongly in the Republics of Central Asia. For example, in the Suzakskiy, Leninskii, Frunzenskiy and other rayons of the Oshskaya Oblast of the Kirgiz SSR, 60-100% of the grapevines and 32-70% of the grape clusters were affected by the end of the vegetative stage. Wherever the vines were treated with ground sulphur 2-3 times, the losses of the yield were insignificant.

In Southern Ukraine and in Georgia, after a depression of oidium which was observed in 1963 and was, evidently, caused by a cold winter, a noticeable growth of the disease in the foci was observed in 1964. On the South Shore of the Crimea and in the Odesskaya Oblast, the first appearance of oidium was registered at the end of May and the beginning of June. At the beginning of summer, usually after a light rainfall, several outbursts of the disease were observed. In the oidium foci and in the neighboring vineyards two sulphur treatments were given. As a result of this, the losses in the yield did not exceed 1%, while the losses reached 30% in the section where the treatment was not given. In the Georgian SSR (Gardabanskiy, Akhaltsikhskiy and other rayons), the affection of the grape clusters reached 15-30%. It was manifested somewhat weaker in the Gurdzhaanskiy, Goriyskiy and Tskhaltubskiy Rayons -- from 3-8%.

The development of oidium was weak in the Northern Caucasus, Azerbaijan and Moldavia. The severe winters of 1963 and 1964 contributed to a decrease in the development of the disease in these rayons in comparison with the preceding years. Low temperatures had a negative effect on the

the duration of the incubation period of the fungus. For example, in the old foci -- in the Kaushanskiy, Novoselskiy and other regions of the Moldavian SSR -- the affection of the grape clusters was slight (1-7%).

In 1965 some epidemic spread of oidium should be expected in the Republics of Central Asia. A further intensification of the disease in Georgia, Moldavia and the Crimea is also possible.

Anthraxnose [*Gloeosporium ampelophagum* (Pass.) Sacc.] spread in a light form in the vineyards of the Chernovitskaya, Odesskaya and Krymskaya Oblasts. The first signs of the disease appeared at the end of May. The leaves were chiefly affected (9-40%), but no disease was observed on the buds and berries.

Infectious red rot [*Pseudopeziza tracholiphila* (Muller) Thurnagel], during the past three years, has been causing considerable damage to the dragonheads, stock vines and hybrids in Moldavia and some oblasts of the Ukraine.

In 1964, the disease spread along a considerable area of the Chernovitskaya, Vinitskaya and Odesskaya Oblasts and some regions of Moldavia. The first signs of the disease appeared in the middle of July after heavy rains. It was observed that when the plants were strongly affected, their leaves dried and dropped off the vines in great quantities. Such vines produced a yield which was characterized by a low sugar content and were only partially ripe, weakly colored or brownish berries.

In 1965, it is necessary to take all possible measures to prevent this disease from spreading and to liquidate it in its old foci.

Spotted necrosis (*Macodiella vitis* Stenb.) was registered in the Ukraine (Odesskaya and Nikolayevskaya Oblasts). Severe affection by necrosis during the early spring period has been observed on the old woody tissue and seedlings which were stored during the winter in shelters under high humidity conditions (for example, Kuchurganskiy Wine Sovkhoz of the Kaspil'nyanskiy Rayon of the Odesskaya Oblast and Zel'nyy Wine Sovkhoz in the Voznesenskiy Rayon of the Nikolayevskaya Oblast). One-year-old woody tissues, seedling, stock and grafts taken late off the vines or which spent the winter without overlaying were free from necrosis.

Spotty necrosis affects all European varieties of grapes, particularly Aligote, Chardonnay, Siberian, Pukhlyakovskiy, Hungarian Muscat and some others. It is believed that necrosis spreads widely in the sheltered areas during the winter.

In 1955, it is necessary to determine more precisely the areas and the damage caused by the spotted necrosis in the Ukraine, Moldavia, Georgia and Kazakhstan.

The ergatic decay of grapes (*Ectrysis cinerea* Pers.) was observed widely in the Czechoslovakian ASSR and in some Oblasts of the Ukraine (Vinnytskaya, Chernovitskaya and others) on the susceptible varieties (Pinogri, Riesling), whose harvesting was delayed till the end of October, the affection of the berries reached 50-55%. The development of the disease in the Crimea was moderate (3%); in individual cases, the berries on the susceptible species were affected as high as 25-30%.

*Transliterated from Russian.

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