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DWARF DISEASE OF LOGANBERRY

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The dwarf disease of the Phenomenal and Loganberry has been known in Pacific Coast states for 25 years. For 15 years it has been recognized in Oregon and the writer diagnosed it in 1927, describing its symptoms and nature. Up to that time it had been observed in nearly every county west of the Cascade Range.

Economic Importance of Dwarf

The economic importance of the dwarf disease is measured essentially by the percentage of plants affected. A plant which has had dwarf for one full season is valueless. In some plantings affected by the disease the damage is slight or relatively unimportant, while in others the losses of plants vary from serious to total. Many cases might be cited where 80 to 90 per cent of the plants were infected. Our experience has proven that few plantings of the Phenomenal berry were without dwarf, but Loganberries planted alone, that is, without Phenomenal berries near, may exist for years without the disease. Taken as a whole, the loss through dwarf to the Loganberry industry in Pacific Coast states is very slight, but many individual growers and certain localities have suffered very heavy losses.

The Present Situation

At present there are two infection areas in Oregon, one in western Marion and eastern Polk counties and another in northeastern Benton county. In these areas affected plantings have from 2 to 95 per cent dwarf. Some plantings in the infection areas are at present healthy, but neighboring infected plants are always a source of infection and a menace to healthy plantings.

### Symptoms of Dwarf

The symptoms consist principally of an abnormal yellowish green color of the leaves accompanied by certain malformations and a general dwarfing. In advanced stages of the disease the canes are stiff and short. They usually grow quite erect. Even infected laterals have an erect growth unnatural to Logans. The buds come at closer intervals on the stem so that there may be as many leaves on a cane 4 feet long as usually occur on a normal cane 12-16 feet long. In older plants only parts like laterals on the canes may show the disease the first year but it gradually spreads throughout the plant. After two or three years of infection the canes of a plant may not grow more than one or two feet high. Once infected a plant seldom if ever recovers.

The young leaves at the tips of the canes show some yellowish mottling but as they age the mottling disappears but the leaves are never as deep green as on normal plants. Affected leaves usually curl under somewhat at the margins while normal leaves are spreading and flat with a rich green color.

Fruit from dwarfed plants is usually crumbly and ripens unevenly.

### Nature of the Disease

Dwarf belongs to that group of plant maladies known as virous diseases. The infective principle follows the sap and food stream inside the plants and may be transferred from diseased plants to healthy plants by leaf lice or aphids which tap the food stream in the veins of the plant.

### Control of Dwarf

Plants which have had the disease for several years will not root tips and so the only spread through nursery stock would be possible from the transplanting of rooted tips from affected plants still having some long trailing canes. Plants which show no symptoms, however, may have had late current season infection.

One of the most practical means of dwarf prevention, therefore, is to plant stock from fields which are apparently free of the disease. Where the disease shows less than 5 per cent, it is practical and advisable to rogue out the affected plants. The job must be thoroughly done, however, and the affected plants burned immediately. Rogued plants should never be allowed to lie around for any length of time.

The Phenomenal berry should never be grown near Loganberries.