

Fungous Diseases of Ontario Orchards: Peach Yellows*

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THE cause of the peach yellows is unknown but it behaves precisely like a parasitic disease. It is contagious, spreads through the orchard from colonies or from individual trees which become centers of infection and is distributed from tree to tree and orchard to orchard by natural methods unknown to investigators. In all respects, therefore, it acts like a parasitic contagious disease.

Up to the present time, all microscopic and bacteriological methods of investiga-

tion have failed to reveal any parasites. Investigations along these lines have been wholly negative although they have been pursued with great persistence and thoroughness. It seems almost certain that had it been an ordinary germ or bacillus, the methods employed would have revealed the same. It is hard for me to believe that the disease is not a parasitic disease, however, and that some day the parasitic organism will be found. The failure to find the cause of the disease or any definite parasite associated with it puts this discussion of peach yellows on a different plane from that of the ordinary fungous or bacterial diseases of plants. However, by comparison with definitely known germ diseases, such as pear blight, and with a general knowledge of physiology and pathology, we may be able to steer clear of false theories and make the most of the facts available.



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SYMPTOMS OF YELLOWS

The most reliable symptoms of peach yellows is the prematuring and red spotting of the fruit. Another symptom almost equally certain is the bushy or wiry twig growth often resulting from premature pushing of lateral buds. Diseased trees, more or less promptly assume a sickly or yellow color in their foliage. The leaves often have a peculiar roll and droop. After the second year the twigs and branches begin to die back and the

tree gradually dies from the top down, ordinarily becoming totally dead at four or five years from the appearance of the first visible symptom. The leaves on trees affected by this disease usually turn yellow rather promptly. This results in the common name of the malady. However, frequently when the trees are first attacked and the fruit decidedly red spotted and premature, on the whole tree or on certain branches, the leaves, instead of yellowing, become even darker colored and larger than normal. That is to say, when the yellows first attacks strong vigorous trees, it sometimes stimulates the tree, both fruit and foliage, before it begins to weaken it. This may even hold true the second year in some cases. The twig growth is shorter on such trees. They behave like trees on which summer pinching of terminal buds is practised. Ordinarily, however, especially on trees under average cultivation, the yellowing of the inside leaves begins as soon as the premature fruit appears. Sometimes these leaves are distinctly rolled upward toward the mid-rib and droop and curve inward by the bending of the leaf stem and mid-vein. This symptom is more or less variable just as the presence of the yellows sprouts may or may not be prominent.

OTHER CAUSES OF YELLOWS

Many other causes produce yellowing or discoloration of foliage. These other yellow effects need have no relation whatever to the yellows and, of course, occur on most all trees and plants, whether they are affected by the yellows or not. Some of the principal causes of yellowing of the foliage of peach trees, in addition to borers and frost girdling, are starvation or poverty of the soil, particularly nitrogen starvation, the fungous root rot, sour soil, root aphids, the root knot or eel worm disease, root winter killing and various other root troubles. These diseases, except the fungous root rot, are all more or less curable and non-conta-

gious and, of course, should never be confused with the true yellows. A yellow peach tree, therefore, does not necessarily mean a tree affected by peach yellows.

RELATED DISEASES OF YELLOWS GROUP

Two other diseases should be mentioned in this connection as they belong to the same general group as the yellows. They are the "little peach" of the northern states and peach rosette of the south.

(To be continued in next issue.)

Use a Manure Spreader

Editor, THE CANADIAN HORTICULTURIST: Regarding the use of manure spreaders in orchards and vineyards, I would say that before purchasing a spreader we found it a very laborious task shaking manure from a wagon. On considering the time used and the present high price of labor, we decided to purchase a spreader. We considered the matter over and decided that a forty-bushel capacity was plenty large enough for two horses to handle, as three horses could not be worked among trees in a vineyard very well. This size of a machine being shorter in the gear, was more convenient to turn at the ends of the rows than a larger machine. We are well satisfied with our choice.

We find that our manure goes a great deal further, besides being pulverized finely and spread evenly, also being easily worked into the soil without plowing it in. I consider this a great advantage and saving of fertility, as you may quickly dispose of your manure before it has time to dry out or evaporate in the sun. I also consider that the manure being applied in this manner, that is, spread finely all over the ground so that the numerous feeders of trees and vines may readily avail themselves of it, is the correct way to apply manure.

If a man has, say, sixty loads of manure or over every year, a manure spreader is a good investment, and as much necessary an implement as any on the farm. It would also be a good investment for two growers or farmers living close together and not having such a large quantity of manure to handle. A manure spreader properly housed when not in use and used intelligently should last almost as long as a wagon.—WILLIAM H. Secord, Homer, Ont.

In spraying, the more distant the tree or plant to be treated, the coarser must be the spray.

As all good spray machinery is expensive, only careless operators will neglect its proper care.

*The fourth instalment of Mr. Waite's address on "Fungous Diseases of Ontario Orchards," given at the last convention of the Ontario Fruit Growers' Association.