

The Danger of White Grub Injury

A Pest That Promises to be Plentiful in Eastern Canada in 1918—By Arthur Gibson, Chief Assistant Entomologist

WHITE grubs, which are the larvae of the well known May Beetles, or June bugs, will it is expected, cause serious injury in the Province of Ontario, and possibly in other sections of Eastern Canada in 1918. This statement is based on our knowledge of the life-histories of these insects. The grubs feed naturally on the roots of grasses, so when sod land is ploughed up they are deprived of their usual food and readily attack such crops as corn, potatoes, strawberries, etc., if grown on the land. The injurious species require three years to complete their life-cycle; in other words, a period of three years elapses from the time the eggs are laid until the grubs which hatch from the same are mature, transform to the pupal state and appear as beetles. In 1917, the beetles were very abundant in certain districts in Eastern Canada, and eggs were deposited freely. The grubs hatching from these eggs did not develop much during the past year, but in 1918 they will grow more quickly and, being more voracious, will undoubtedly cause serious injury to the roots, etc., of various kinds of field crops. They will continue to feed throughout the growing season, and in the autumn of 1918 go deeper into the soil to pass the winter. In the spring of 1919 they will again come near to the surface, feed for a short period and then rest for a time preparatory to changing to the pupal state. It will be seen, therefore, that the second year in the life of the grub is the destructive one.

Crops for Infested Land.

The female beetles lay their eggs in sod land, and also in land bearing such crops as timothy and small grains. Suitable land nearest to groves or woods is favored by the beetles, which feed upon the foliage of the trees, and then visit such nearby fields to lay their eggs. In districts where the beetles were abundant in 1917, it is to be expected that such land is now more or less infested with the grubs, and it would therefore be unsafe in 1918 to plant on newly broken sod land, or on land grown to the above crops in 1917, any crop which would be attractive to the grubs. Crops particularly favored by white grubs are potatoes, corn and strawberries. In addition to these, other crops which are grown in wide rows, and timothy, are liable to injury.

The safest crops to grow on land which is suspected of harboring grubs, are alfalfa, clover, or buckwheat. If it is not desirable to use infested land for alfalfa, clover, or buckwheat, the same may be again planted to timothy or small grain. Such crops as corn or potatoes should not be planted in 1918 on newly broken sod land in districts where the beetles were abundant in 1917. Corn or potatoes grown on land which grew the same crops in 1917, and which were kept cultivated and comparatively free of weeds during the flight of the beetles in May and June, 1917, will be reasonably safe from injury by white grubs in 1918.

Cultural and Other Methods.

Under garden conditions, grubs are often turned up when the land is being dug or plowed. As many of these as is possible should be removed by hand and destroyed. Under acre conditions there are unfortunately no practical measures known to destroy the grubs when they are known to be present in the land, and destroying crops. Late summer plowing which brings many grubs to the surface, crushing numbers of them and exposing others to adverse weather conditions, is useful particularly in years when the grubs are changing to beetles.

Land known to be seriously infested and required for cropping in 1918 may be plowed in late spring, thoroughly

harrowed and planted to a 'late crop. Such late cultivation will attract to the fields, crows, blackbirds, and other birds, which are known to feed readily upon these grubs, particularly during their nesting period. Domestic fowls, such as chickens and turkeys, are also fond of white grubs and should be allowed the run of infested fields when these are being plowed.

Limited areas may be practically freed of white grubs by turning in hogs, either in spring after the first of May, by which time the grubs will have come near to the surface, or in late summer when the crop has been removed. These animals are very fond of white grubs, and will root them out and devour them. An intestinal worm of hogs, called the giant thorn-headed worm, is known to pass one stage of its life-history within white grubs. The worm is introduced into the hog when the latter devours the white grub. There is little danger of this happening, of course, if the hogs are allowed the run of fields in which no such animals had been pastured within three years, as any worm infested grub in the land during such period will have matured and disappeared.

Potato Growing Made Easy

SO great was the demand for the recently issued bulletin on Potato Cultivation, written and edited by the Dominion Horticulturist, that a popular edition of 16 pages has been prepared and can be had free by addressing the Publications Branch, Department of Agriculture, Ottawa. As an aid to the potato grower, especially to the less experienced and the beginner, this bulletin, which is numbered 50, should prove invaluable. In plain, terse language, practically all that it is necessary to know is told about the preparation of the soil, the subsequent planting and cultivation of the potato, the protection from insect and diseases, and the digging and storing. A list is given of varieties recommended for different districts in every province.

The Tractor's Power

THE tractor is as responsive to good treatment as an animal or any other machine. In the case of a great many machines the response to good treatment is not so noticeable. This is true because the tractor is a power-furnishing machine while the average farm machine consumes power. If the tractor is not just right in every way, it falls short in the production of power. This is sure to be very noticeable, as it is usually pulling a full load and only a

small loss in power cuts down the amount of work done.

In the case of the power-driven machine, any disorder calls for greater power to operate it. The horses or the machine furnishing the power work harder and approximately the same results are accomplished. Hence it is much easier to overlook a slight indisposition on the part of a power consuming machine than on the part of the power producer.

If any part through which power is transmitted is loose, it may cause a reduction of power. The tractor operator should examine his machine thoroughly every week or ten days to prevent such loss. A bolt in the crank case is loose, oil is lost. The adjustment on a valve stem loosens, the valve is out of proper time and the cylinder does not give full power. The clutch is not adjusted to take hold evenly. Slippage here causes loss of power. Similar leaks may develop in the fuel system and the ignition system. Any of these cause heavy drains on the power. Usually they can be quickly repaired if attended to early. Left too long, they may result in a breakdown involving a large repair bill and loss of much valuable time.

The throbbing and rhythm of the tractor should be a part of the operator so that he detects the trouble in its earliest stage.—E. R. Gross.

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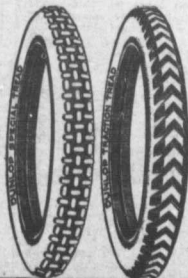
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