

Dissolve soap in water by boiling, take from fire, and while hot, turn in kerosene and churn briskly for 5 minutes. To be diluted before using in 9 parts of water, making the mixture up to 12 gallons.

Pyrethrum or insect powder, if fresh, is very good for use on food plants and is not poisonous to men or beasts. It is very effective for nearly all caterpillars and especially for those of the cabbage butterfly, if mixed with four times its weight of flour and kept in a tightly closed vessel for twenty-four hours. It can also be mixed with water in the proportion of 1 ounce to 2 gallons, and in this way is destructive of plant-lice.

PREVENTIVE MEASURES.

The gathering together and burning in the fall of all rubbish about gardens will have a very good effect by destroying any young caterpillars and also preventing cutworm, moths, etc., from laying their eggs. Burning of stubble in the fall is a very good practice, too, as innumerable insects will be destroyed, and it is also well to burn screenings and refuse after threshing. In this way, pupæ of Hessian fly and larvæ of other wheat flies will be disposed of.

Deep ploughing late in the fall will expose to the weather many insects and will bury others in the egg or more advanced stages.

Carbolic acid as a wash has been recommended by several authorities as being of service to protect radishes, onions, etc., from maggots. This is prepared by adding 2 quarts of soft soap to 2 gallons of water into which when boiling 1 pint of crude carbolic acid is turned. Dilute with 50 parts of water and sprinkle on the plants as soon as they are above ground.

Young plants of cabbage, tomatoes, etc., may be protected from cutworms by placing bands of stiff paper or tin about them.

Rotation of crops is desirable when fields are affected.

There are some grubs known as wire worms, the larvæ of click beetles, that are very destructive to crops on new lands in some districts and can only be controlled by cultural methods. The eggs are laid about the roots of grass and weeds in summer and most of the species spend two years in the larval form, being then yellowish brown grubs, tough and shining. They pupate in the ground and although they are mature beetles about August many of them remain in their cells in the ground through the winter. When sod land is broken the wireworms feed that season mostly on the old grass and roots, and those of full growth do no further harm, but those in the first year of growth attack the farmers' first crop because it is all they have to feed on. Flax, barley and rye are said to be less liable to attack than other grains and might therefore be sown in preference to wheat and the land fall ploughed immediately after harvest when the pupæ and beetles would to a large extent be destroyed. Farmers in some parts have had good results by following this ploughing after harrowing by a later ploughing just before winter.

In case of any occurrence of injurious insects, it will be advisable for farmers to send specimens, with an account of the injuries to the College of Agriculture, Saskatoon, addressed to Prof. T. N. Willing.