

# Soils and Crops

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## The White Grub in Eastern Canada—Methods of Control.

The Dominion Entomologist reports that from information gathered, particularly by Mr. H. F. Hudson of the Entomological Laboratory, Strathroy, Ont., it is expected that injury by the white grub will be effected this year in Eastern Canada. This important insect has been receiving much attention during recent years. The complete life cycle of the insect requires from three to four years. In association with studies on the life-history of the common kinds of white grubs, close observations have been made on the crop rotations followed on farms where the grubs have been decidedly injurious, and also on farms where little or no injury has occurred. As the insect spends the greater part of its life in the soil, where it is not possible to treat the pest, it has been found that almost complete control can be obtained by following a short crop rotation in which grass or clover or a mixture of the same shall not occupy the land for more than two years, and preferably not more than one. In infested fields where grubs are present measuring from one-half to one inch in length the following crop rotation has been found to give almost complete control:—

First year: plant the infested field to oats and seed to clover.

Second year: clover hay crop. Plow under the clover sod in the spring of the third year, and plant the land to corn or potatoes.

Fourth year: plant the land to oats and re-seed to clover.

From the above rotation it is seen that the hay crop only occupies the land one year, and that with every four years two crops of clover are grown. This plan, besides giving practical control, will maintain the land in a high state of fertility. Similar procedure should be followed in breaking up an old pasture, except that the sod should be fall plowed and worked as frequently as possible.

If pigs are allowed a free run of badly infested pasture land, they will root out many of the grubs and materially help to control the pest. Domestic poultry feed readily on white grubs, and should be encouraged to follow the plow as much as possible. Black birds, crows and other birds, as well as skunks, also feed on the grubs.

## Best Feeding Rations for Young Chicks.

As a preliminary step in the study of the nutrition of poultry the Central Experimental Farm at Ottawa made a test with twelve pens of forty-two young chicks last year. These birds were fed for a five-week period, during which time the weekly gain in weight was carefully noted. The annual report of the Farms for that year states that the basal ration in this experiment consisted of finely ground corn, wheat and oats and finely ground bran, shorts and cornmeal. Pen No. 1 received the basal ration only, the rations in the other pens being supplemented by one or more feeds, e.g., greens, eggs, meat, and milk. Pen No. 1, the poorest, lost 31 birds and the survivors made an average gain of only 1.67 ounces. Pen No. 9, fed meat, eggs and greens in addition to the basal ration, suffered the lowest mortality, namely, 4 birds, or 10 per cent., and gained 5.26 ounces per bird; while in Pen No. 11, which had a ration similar to No. 9 but had milk to drink, the mortality was 7 birds, but the gain of 5.87 per cent. was the highest pen average. The relative value of these four feeds can be well shown by a comparison of the results when they were fed singly in addition to the basal ration. Pens 2, 3, 4, and

5 received meat, eggs, milk, a greens respectively, and the mortalities were 26, 18, 28 and 24, while the average gain per bird was 3.32, 3.279, and 2.81 ounces. These figures clearly demonstrate the value of egg as one of the first ingredients of food for young chicks.

## Topics in Season.

To exterminate thistles, simply mow them when in bloom.

A barrel which has had kraut in can be cleaned with salt. Rub a salt on the inside of the barrel, leave it a while and then wash it off. You can fill the barrel with salt brine and leave it in a day or two.

To treat binder twine so that grasshoppers and crickets will not cut, dip the twine in a mixture of three parts of kerosene and one part of machine oil. Kerosene alone will do, but twine thus treated will be likely to catch and break when running through the binder.

There is no best silo, for any silo rightly made is good. But the most expensive silo, poorly constructed, is worse than none.

I made a toy windmill, placed it on a pole, set it in the garden with the pole about a foot deep. The vibrations and noise keep the moles out.

Never set young plants immediately after a heavy rain. The sun will scorch and wilt them. Wait a few hours.

For every dollar's worth of honey which bees bring to their owners, it is safe to say that they bring \$15 increased apple crops to the owners' orchards.

When tips of shoots on pear trees turn black and leaves wither, blight is the cause. The disease is carried down the branches to the tree by the sap. Hence, the way to check blight is to cut out the tips as soon as possible. To prevent spreading the disease, disinfect the tools after each use with corrosive sublimate. This should be kept in a bottle out of the reach of children, and should be labeled "poison" in large letters. In cutting out, cut a little distance below the diseased part, and burn all portions removed.

Ashes or road-dust will kill pea slugs. The minute dry dust gets on them, they will start to dry up.

The largest grapes in the world are grown under glass in England. Grapes of the Giant Gros variety often measure between four and five inches around, and clusters weigh twenty to thirty pounds each.

I had a neighbor who put a little salt in every hole where she set a cabbage plant, to keep away the cabbageworms. I reasoned, "Why not salt the whole garden?" The next spring before breaking up the garden soil I sowed salt about as thick as I would broadcast turnip seed. I have practiced this for fifteen years, and have not been troubled with cutworms since.

Scattering boric acid on the greenhouse walks the last thing at night kills many cockroaches that are about to destroy plants growing in the house.

Fighting the cutworm: The grower around here always use paper bands to protect newly set plants from cutworms. It would be quite a lot of work and useless expense to hold these bands together with cotton string. Here is a way to hold the bands together. Take tough paper long enough to make the band, about six or eight inches wide. Fold this together lengthwise in the middle, shove one end of this into the fold of the other end about an inch, and there you are. In using, make a little trench around the plant with the finger, so to get the band about an inch in the ground. Draw a little loose ground around the outside and hold the band in place.

## The Dairy

Dairymen buy milking machines for one of three reasons, or for all three reasons. First, because they realize a milker will save them labor if they do the milking themselves, or labor hire if they have many hands. Second, the milking machine saves time. Third, a first-class milking machine milks the same way every day, and the treatment which the cows receive is not dependent upon the whim or humor of a hired man. The three motives, in short, are time saved, labor saved, and the good effect on cows, or increased milk production.

In my particular case, all three of these items were duly considered, and I made up my mind that it would be economy for me to buy a milking machine that would accomplish for me those three things. At that time I was milking only ten cows, but with the intention of increasing my herd, which I have since done.

I bought one of the best milkers and do not hesitate in saying it is everything the manufacturers said it would be. I have been using it twice a day now for the past nine months, and it has always given me complete satisfaction. The cows really seem to like it, and while I have not kept records, and have added new cows to my herd from time to time, I am firmly convinced that the cows I had be-

fore installing the milker are now giving more milk than they did when I milked them by hand.

It used to take an hour and a half to milk ten cows, whereas I now milk fourteen in about one hour. I have not had a case of teat or udder trouble since putting in the milker. The milker is easy to clean and keep sanitary. Its upkeep has been nothing with the exception of a few rubber teat-cup liners, which expense is not worth mentioning. I follow the operating instructions to the letter and find that it pays.

Nine months' experience with mechanical milking has made me such a saying that I believe I am safe in saying that a good milking machine will actually pay for itself in a year. And if I had to go back to the old method of hand milking, I feel pretty sure that dairying would soon lose its attractiveness to me.

To forget wrong is the best revenge.

Look out for squalls when the clothesline breaks.

The calendar should contain a month of Will as well as a month of May.

There was once a man who had driven down a stake to tell where he left off weeding the onion row. He never, after he got a farm of his own, that sort of thing came to an end

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family. St. Luke 10: 38-42; 15. Golden Text—20, 21.

His infancy, and His own early life, and thoughtful words.

The boy is described as growing up at home in a fourfold development of healthy and strong and clean young manhood—in intellectual, physical, spiritual, and social character. The verse (2: 52) has been rightly taken as setting forth normal and healthy growth. It suggests the need in every community and in every home of a fourfold training, a four-sided education, which will take account of all the needs of a boy or girl. It suggests that social and physical training should be set side by side with intellectual and spiritual, and so shows us where, in much of our church and home life we are failing to do the best for our young folk. The example of the education of the boy Jesus is a good one to follow.

2 Timothy 3: 14-15. But continue thou. Timothy had had a good start in life. His father was a Greek, and of him we know nothing, but his mother was a Jewess, and she instructed him well in the scriptures of the Old Testament, which were her Bible. Paul knew his mother, whose name was Eunice, and speaks—(1: 5) of her faith and of that of his grandmother Lois. Living in Asia Minor, in the heathen city of Lystra (Acts 16: 1-2), they had kept their home pure, and their hearts fixed in the religion of their fathers. And so, when Paul preached the gospel there they were among the first to believe.

When Paul wrote this letter from his prison in Rome he had known Timothy for a good many years. He still regards him as his own son in the gospel, and admonishes him with fatherly solicitude. In particular he counsels him to continue in the reading and study of those holy books which he had learned from his childhood. For they are indeed able to make wise unto salvation through faith which is in Christ Jesus.

Our lessons set forth three things which should characterize the Christian home (1) thoughtful choice of and attention to the best things, (2) an all-round education for the children, and (3) a reverent regard for and a continued study of the Bible as the text-book of our faith.

## Application.

Sometimes a Christian household in the midst of a community is as potent as a Christian Church. Not long ago we heard a builder say that one undesirable family in a neighborhood could lessen the value of property all around. On the other hand there are households which give dignity and respectability to the whole neighborhood. In an Ontario village where we were visiting not long ago, one house was pointed out to us by a resident, who said, "The family living in that house has done more for this village than we shall ever be able to estimate. Father, mother, and all of the five children are Christians, and in every good cause they can be counted on."

into the milk as the calf begins to suck the fingers. The calf in this way gets a taste of the milk and often starts to drink without further trouble. If not, the process must be repeated.

But sometimes the calf refuses, and force must be resorted to. The feeder, facing the same direction as the calf, straddles its neck and backs the calf into a corner. The pail of milk should be held in one hand and the nose of the calf should be grasped with the other. Place two fingers in the calf's mouth. The calf's nose is then forced into the milk.

The cock of the walk is finally cooked in the pot.

A good joke must have a good point, but it should never be aimed at any one in particular.

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