

EFFICIENT FARMING

WHERE PREVENTION COUNTS.

Plant diseases are controlled by prevention rather than by cure. Once an apple has become scabby, a cherry begun to rot, or a peach leaf shows signs of the curl, it is then too late to apply any control. The damage done by these and all other plant diseases is avoided by preventing the disease from ever becoming established. Spraying is the most generally used method of prevention. The success of a spray application depends upon the chances at that particular time of killing the disease organisms, and so preventing any infection.

For control of peach leaf curl it is essential to spray with lime sulphur while the trees are in a perfectly dormant stage, before the buds have even begun to unfold in the spring. All studies of the life history of the fungus indicates that the spores of the fungus pass the winter adhering to the bud scales and in the spring these spores germinate and attack the leaves as the bud is opening. As long as the young leaves are folded inside the bud and protected by its scales they are safe from the attack of the fungus, but as soon as the bud begins to open, the tender leaves become exposed to infection. It is therefore essential that the fungus spores be killed by the spray while the buds are still dormant. It follows that spraying can be done at any time during late fall, winter or early spring.

All peach growers have noticed that the disease is much more prevalent after a cold, wet spring. In such a season on account of the slow rate of growth the buds are a long time unfolding; while dampness favors the germination of the fungus spores, and low temperature does not check their growth. Thus the fungus is favored and has a considerable period of time in which it has every chance to infect the leaves. If the weather is warm and dry while the buds are opening we have the reverse conditions; the leaves shoot out quickly and are soon past the danger period, while at the same time, lack of moisture may prevent germination of the fungus spores.

A BRIEF COMPARISON OF SOME SILAGES.

At the Central Experimental Farm, comparisons of the feeding value of the three silages—oats, peas and vetch, sunflower, and corn, showed the cost of production of these stored in the silo to be \$5.60, \$1.80 and \$2.95 per ton, respectively.

In the first part of the experiment, corn silage produced 4 per cent. more milk at 13.5 per cent. less cost and 3.7 per cent. more fat at 12 per cent. less cost than did the O.P.V. silage. In the second part of the experiment, corn silage produced 5 per cent. more milk and 3.8 per cent. more fat than the sunflower, but the latter produced both milk and fat a little cheaper. Taking the corn silage as a standard, and valuing it at the cost of production, the relative values of O.P.V. silage and sunflower silage were \$2.88 and \$2.76 per ton, respectively. The high cost of production of the O.P.V. silage is due to the low yield per acre. In the case of the sunflower silage, the cost is low, due to the high yield, but a large percentage of this extra yield is water. Calculated on the basis of the dry matter, corn and sunflower silage would cost about the same. Sunflower silage, with its excess water, freezes badly in winter, a very undesirable thing, while O.P.V. silage freezes little, if any, making it easy to handle. Neither O.P.V. silage nor sunflower silage are as palatable as corn silage, but the cattle ate both, once they became used to them. Corn silage still holds premier place, having the most advantages and the fewest disadvantages, but sunflower silage and O.P.V. silage are economical feeds where corn silage can not be grown. —Geo. W. Muir, Animal Husbandman, Central Experimental Farm.

CONCERNING FIELD ROOT VARIETIES.

Now that the season is past for the harvesting of our field root crops a consideration of what the harvest has brought us should be profitable. At the Central Experimental Farm at Ottawa we have for the past few years been considering not only the total yield of green weight obtained but the amount of dry matter and the genuineness of the variety as well. The consideration of genuineness is what we wish to consider briefly at the present time.

In our attempts to classify field root varieties we have met with some very peculiar mixtures that were sold under special, sometimes fancy, variety names. A year ago we received

a package of seed supposed to be of a Yellow Intermediate variety but which produced at least one-half small round garden beets. This year we had a variety which gave us one-half Swiss Chard. In both of these cases the mixtures were obviously due to the mechanical mixing of varieties in some warehouse, due very likely to carelessness on the part of those handling the seed. Whatever the cause of the mixing the fact remains that a farmer buying such seed would suffer a considerable loss—and it would seem only fair that there should be some means by which growers who receive such seed could get recompensed for the loss sustained because of sowing it.

A much more general condition than the one previously mentioned is the occurrence of off types in any established variety. Just how serious such a mixture is from the standpoint of yield of the resulting crop is dependent on the character of the off type individuals present. Plants which are off type in color only do not usually mean a reduction in yield, but plants off shape very frequently do. A single example will serve to illustrate this point. In a lot of half sugar mangels grown at the Central Experimental Farm this summer there occurred about thirty per cent. of off shapes and sizes. The half sugar types and the off types were weighed separately and the decrease in yield due to the off types figured on an acre basis, amounted to a little over five tons. There is a special adaptation of type or root to soil and climatic conditions, as for example the Globe or Tankard types of mangels for shallow soils, the Half Long or Long types for very deep open soils, etc. The presence of types, not suited to the soil type in which they are grown, in a variety suited to the soil in question will almost always result in an appreciable loss due to decreased yield.

We may have, however, a lot of roots true to variety name and type, and still giving us a very inferior yield because of weak germination of the seed from which they grew. In common with animals a poor start very often means an ultimate development much below normal. It is very essential therefore to have vigor of germination as well as purity of the resulting crop if we are to obtain maximum yields.

What we wish to emphasize is that some root seed sold to the farmers of Canada at the present time is a disgrace to the seed trade, and a serious loss to the growers unfortunate enough to buy it. We wish at the same time to call attention to the fact that there is reasonably good root seed available and being sold by some of our seedsmen. Some way of regulating our root seed trade so that all of our seedsmen would sell only good seed would seem to be in order.

An Automatic Rat Trap.

After the corn crop was sold rats from the granary began to infest the basement. They were so thick that some wholesale method to exterminate them was the only solution. There was an old vinegar barrel in the basement. The top of this was removed and covered with heavy brown paper. Several small pieces of cheese and a few kernels of corn were scattered on the top and the barrel set about six inches from a table so that the rats would have to jump to get to the bait.

Each morning the bait was gone. When the rats began to suspect that the food supply was both regular and safe, the paper was cut with a sharp knife in the form of a cross with the intersecting cuts in the centre. This time the food was glued to the paper.

The next morning nine rats were found in the barrel. Subsequent mornings netted from one to three or four for about a week.

Cost of Maintenance of Swine.

Investigational work with swine, conducted by the Department of Animal Husbandry at the Ontario Agricultural College, it was found that in wintering brood sows on a narrow, nutritive ration produced largely from concentrated feeds, the cost was 15 cents per day for mature sows, whereas with groups using more roughage the cost was reduced to eight and nine cents per day.

An extensive experiment with commercial hog feeds versus home-grown feeds showed that under average farm conditions none of the commercial hog feeds used was as economical as a well-balanced mixture produced on the farm.

Poultry

When its leg is bent the fowl can not open its foot, for which reason the fowl can not fall off the perch.

The word "chicken" is commonly applied to fowls of all ages. Properly, a chicken is a young fowl six months old; it becomes a fowl after that.

Hens are never so happy as when they are knee-deep in straw or chaff, scratching for kernels of grain. This happiness is what makes them profitable, too.

Olive oil is one of the best medicines known for diarrhoea. It can also be regarded as a substitute for simple ointments, and can be rubbed around the eyes instead of using an ointment.

Crossing breeds leads on to mongrelism, and the oftener the cross is made the lower the quality gets. Get a good breed and stick to it, is the advice of those who have made a success.

When a fowl sneezes, waters slightly at the eyes and nostrils, and the face puffs up, this indicates a common cold. When accompanied by a rattling in the throat, the trouble is bronchitis. Difficult breathing indicates pneumonia. Canker in the mouth means diphtheria.

Beef scrap commonly appears in two forms—granulated and ground. The ground scrap is preferred, since it may be fed either in hoppers or mixed with a mash food. Fowls will eat a ground scrap from the hopper readily enough and are not so likely to hog it as they would the coarser scrap.

Sour crop is occasionally found among fowls. When a fowl with a sour crop is picked up, the crop feels soft and the fowl will vomit a quantity of fluid. For this condition there is no better remedy than two teaspoonfuls of sugar and baking-soda (equal parts), in a teaspoonful of warm water. Give two teaspoonfuls of this once a day, and at the same time supply plenty of grit.

Cultivation of Tobacco.

The extent of the work carried on at the Dominion tobacco station at Harrow, Ont., is little known and less realized. A good idea, however, can be gathered from the report for last year of the Superintendent, Mr. D. D. Digges.

Besides producing enough plants of all varieties to meet the requirements of the station and the various outside experimental plots, 165,600 plants were sold, sufficient approximately to plant 36.8 acres. Three thousand square feet of glass covered beds, and 1,200 square feet of canvas covered different types that were seeded. Two cold beds, two semi-hot beds, all glass covered, and one each semi-hot bed and cold bed, canvas covered, were used. Both of the last mentioned were spring steamed but one each of the others was spring steamed and one each fall steamed. All beds had a top dressing of about three inches of well rotted compost. The treatment practiced under these conditions are fully set out in the report and the conclusions arrived at briefly put are: that the semi-hot bed is the most economical and efficient type of bed; that the glass-covered semi-hot bed is the best for the production of early seedlings; that by using straw the semi-hot bed can be made and steamed in the fall without losing its effectiveness; that glass-covered beds are superior to canvas covered for the production of early seedlings; that a top dressing of black compost is beneficial; that sterilizing with steam not only eradicates weeds and plant diseases but also forces growth of the plants; that steaming for thirty minutes at 100 pounds pressure is sufficient; that fall steaming is a safeguard against late springs; that on a fairly fertile soil which is well supplied with humus a weak solution of nitrate of soda applied when the leaves are about the size of the small Canadian nickel is sufficient for forcing retarded plants but the latter should be sprinkled with pure water immediately after using the solution; that the rate of seeding, and the manner thereof, should be governed by the germinative power of the seed.

Cost of Maintenance of Sheep.

Investigational work with sheep, conducted by the Department of Animal Husbandry at the Ontario Agricultural College, gave for cost of maintenance of the farm flock the following figures: To winter ewe lambs, \$4.49 each; to winter breeding ewes, \$5.50 each.

Investigational work in fattening lambs was continued and the results showed last year that it would have paid better to market the lambs in the autumn than to finish them in the pens, the lambs all showing a loss when strict account of feed was kept.

Nearly 30 per cent. of all flowers are white.

difficult to make the calf into a worthwhile dairy cow.

Short Courses at Ontario Agricultural College

FARM POWER COURSE.

Farm tractors for outdoor work, and gasoline engines and electric motors for inside are very rapidly finding favor on the farms of Ontario. For the large number of tractors introduced during the past few years it has been very difficult to find skilled operators and especially operators with a thorough grasp of the fundamental principles underlying the construction and operation of gasoline engines. Many inquiries are received at the Ontario Agricultural College day by day from those wishing information about motors of various types used for inside work.

To afford an opportunity for instruction along these various lines there is offered a short course in Farm Power at the Ontario Agricultural College, beginning January 22nd and extending over a period of two weeks. Amateurs, being either operators, farmers or farmers' sons are particularly invited. Any man or boy may enter the course providing he arrives at the Mechanic's Building, O.A.C., at 9 a.m. on the 22nd of January.

FARM DAIRY COURSE.

The importance and value of a knowledge of modern dairy farm practice will be demonstrated during the Farm Dairy Course—January 21st to February 2nd—at the Dairy Depart-

ment of the Ontario Agricultural College. The work covered will include lectures on the care and handling of dairy cattle, the production and care of milk, veterinary science, crops for the dairy farm, systems of ventilation in dairy barns and the care and use of milking machines, along with practical work in hand separators, butter-making, soft and fancy cheese making and milk testing. No young dairy farmer can afford to be without a course of this kind. If students are unable to remain the full period of two weeks, they may stay one week or less.

FRUIT AND VEGETABLE GROWING.

The culture of tree and small fruits for both amateur and commercial growers in all parts of the Province will be covered in the short course on Fruit and Vegetable Growing given by the Department of Horticulture, Ontario Agricultural College, January 21st to February 2nd. The course will be as practical as possible. The best methods used in vegetable growing will also be given in detail. The practical work of fruit growing will consist of budding, grafting, pruning, planting, packing and marketing the fruit and market packages; in vegetables, seedage, cutting, picking out, potting, transplanting, marketing and market packages.

Butter and Cheese Scoring Contests.

In the Dominion educational butter scoring contest of 1923, conducted by the Dairy and Cold Storage Branch from May to October inclusive, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, and Nova Scotia each entered six samples. British Columbia and New Brunswick each five, and Alberta three. All the samples from Manitoba and Nova Scotia were special grade. The other special grade samples were five from Saskatchewan and Quebec, four from British Columbia and Ontario, three from New Brunswick, two from British Columbia, and one from Prince Edward Island. All the other samples were first grade except one from Quebec and Prince Edward Island, which were second. The special grades were 23.40 per cent. more than in 1922, showing, says the report, that the creamery butter-makers in Canada are improving in their methods.

In the educational cheese scoring contest, Ontario contributed 22 samples of which four were special grade, 17 first grade and one second grade. Of 21 samples from Quebec nine were special grade, nine first grade and three second grade. Of four samples from Prince Edward Island all were first grade. Of six from New Brunswick four were first grade and two second, and of three from Alberta one was first grade and two second grade. Only the provinces named competed in cheese.

Why the Coil Failed.

The coil of an electric farm-lighting plant had burned out while the engine was running and a new coil was installed. Within a short time thereafter the engine had been stopped, apparently in good condition, but a few days later would not start until another new coil was installed. This happened again, after which an investigation revealed that the coil, though apparently correct in size and shape, was of the wrong capacity. This particular 32-volt plant utilizes a 32-volt coil to supply ignition for the engine, and as the firm also makes a 6-volt automobile lighting system, a 6-volt coil was supplied by mistake. Then when the 32-volt current was impressed on the windings of the 6-volt coil, the pressure was greater than it was designed for or could withstand; consequently it heated and burned out within a short period. Therefore, in installing new coils or other parts on any farm-lighting plant it is well, in addition to making sure they are genuine, also to make sure they are of the correct rating or capacity. This is doubly important when the replacement part is furnished by any other than the plant's manufacturer.

Trying Hard to Keep Attar of Roses Pure.

Much of the attar of rose comes from Bulgaria and the sophistication of the perfume since the war has given deep concern to the government, which has offered 1,000,000 levas (we do not know how much this represents in real money) for prizes for a process to discover adulterants, says the Scientific American. Essence of geranium has been used to debase the perfume. This has proved very detrimental to the trade. It has not only weakened confidence but has a disastrous effect on prices as well.

What the Live Stock Market Suggests.

A recent Dominion Market Intelligence report issued from Ottawa contains some suggestive information as to conditions at the leading live stock marketing centres, from which the following are quotations:

Toronto: Trading on the cattle market was dull. There was excessive supply of thin unfinished cattle and buyers showed marked dislike for it. Docked and castrated lambs invariably topped the market.

Montreal: Packers, under the run of mostly inferior cattle, were not inclined to buy. Like begets like, use quality sires.

Winnipeg: There was a fairly broad enquiry for good feeding steers. Inferior kinds were dull and weak. Common, horned, off-color stockers and feeders were a drag on the market. Percentage of select bacon hogs very small; a heavy run of unfinished hogs were mostly returned to the country for feeding purposes.

Edmonton: All good cattle, especially good feeders and good butcher steers, sold readily at fair prices.

From Markets Intelligence office: Dehorn your cattle. Live stock buyers are money losers. The markets are short on good quality steers. Winter feed for spring markets. The winter feeding of lambs is profitable. Docked and castrated lambs top the market. Winter feeding is the strength of the live stock industry. Spring markets are generally bullish. Finish is an essential to profitable sale.

Care of Paint and Paint Brushes.

When it is necessary to store an opened pail of paint indefinitely, and the cover has been cut away, the paint naturally becomes hardened and useless from exposure to the air. This may be prevented easily and at a trifling expense by pouring melted paraffin over the surface of the paint. The can will be hermetically sealed as soon as the wax has cooled and the paint will be preserved. Paraffin is usually kept on hand in the kitchen for sealing jars and waxing sad-irons, and a single bar of the wax, costing about three cents, will be sufficient to seal the paint in two one-gallon cans.

If nothing is at hand with which to cleanse a brush when a job of painting has been completed, the bristles may be kept in good shape by wiping them as dry as possible and dipping the brush into melted paraffin to the depth of the ferrule. To insure ease in the removal of the wax when the brush is to be used again, the bristles should be pressed firmly together so as to prevent the wax from flowing between. The paraffin, when cool, can be picked from the bristles very easily, or it may be dipped for a few moments into boiling water, and the brush will be as serviceable as ever.

Brushes that have been neglected until the paint is hard and dry can be softened again by soaking them in strong vinegar.

For the Languid Vise.

After a period of service the average vise wears to the extent of requiring the movable jaw to be pulled out by hand when the vise is opened by the insertion of any piece of work. A simple remedy to correct this, as adopted by a local shop, consists in the insertion of a valve spring between the fixed and movable jaws.