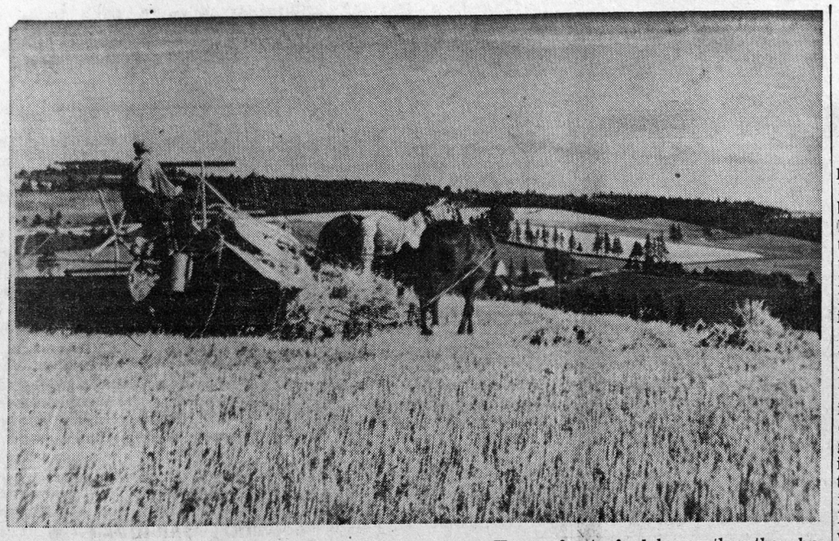

ALTHOUGH farming in Prince Edward Island has become highly mechanized, scenes like the above are not uncommon. Horses are still used by some who prefer to feed hay rather than buy gasoline. (National Film Board).

Tons Of Manure Going To Waste In Ontario

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Each year in Ontario tons of straw, leaves, or plant residues are burned or wasted when they could be turned into excellent artificial manures or composts by a relatively simple process. It is possible for the general farmer, market or city gardener to furnish himself with such material at little cost. The production of artificial manure from straw or leaves is particularly important at the present time in view of the increasing scarcity of stable manure, especially in urban areas, and when there is a definite lack of organic matter in certain soils.

The manufacture of artificial manure is dependent upon the action of various micro-organisms, such as bacteria, molds and actinomycetes. These micro-organisms normally are present in large numbers on straw, leaves and other vegetable matter. Under suitable conditions they rapidly multiply and are able to break down complex plant tissues by a process of fermentation and decay. Chief among the conditions necessary for their action are moisture, oxygen and food. Therefore, the production of artificial manure is simply a matter of arranging the material in such a fashion that the micro-organisms are assured of these conditions, and thus in turn are able to break down the vegetable refuse into manurial form.

A type of artificial manure resembling stable manure, may be made from any form of straw, leaves or other refuse. The material is built into a pile in layers, each layer is well watered and is then sprinkled with a fertilizer or chemical mixture. Different mixtures have been advocated slightly in composition. Such a mixture is composed of 60 pounds of ammonium sulfate, 60 pounds of lime and 30 pounds of superphosphate applied to each ton of air dried material. If not available, a high grade fertilizer with the addition of lime can be applied instead, at the rate of 250 pounds per ton of material. The process is repeated with each layer until the pile is from four to six feet in height. When finished the top should be dished to catch the rainfall.

The pile should be reforked and turned in approximately one month's time and if possible, several times thereafter. Also, frequent watering is essential. Under such conditions, a suitable manure may be produced in three to four months' time. When conditions are such that frequent watering is not possible, or the rainfall has not been sufficient, the process will take considerably longer, and it may be necessary to leave the pile for 10 or more months. Water has a tendency to run off fresh straw, but is readily absorbed as the pile decomposes. Artificial menures produced under ideal conditions have been shown to benefit crop growth equally as well as stable manure.

Whereas many tons of artificial manures can be produced from straw and leaves, almost any form of plant refuse can be composted on a smaller scale into valuable organic matter. Such materials as leaves, weeds, vegetables grass clippings, sod, peelings, rind and other garbage or refuse can be broken down by micro-organisms. Every gardener can utilize such waste products with a minimum of labor and expense, thus supplying himself with a rich source of artificial manure.

There are many different ways of making compost beds or heaps, depending upon the materials available and the method preferred. Beds can be composed of alternate layers of sod and manure, or if manure is not available, layers can be built up of rank refuse and soil, peat or muck. Also, satisfactory beds can be made without soil or manure. Whichever method is adopted the fundamental principles of supplying the micro-organisms with food, moisture and oxygen must be adhered to.

For the garden where manure is not available, the following method has been found to be satisfactory. A pit, varying in size from 6-8 feet wide, and 10 to 12 feet in length is dug down to the sub-soil. A layer of leaves, sod, weeds or other vegetable matter is built up in the pit to a height of approximately six inches and is packed lightly. The layer is thoroughly watered after which a light application of good fertilizer mixture with lime is added. The addition of wood ashes is also advantageous. This is followed by a layer of good topsoil an inch or two in depth. Succeeding layers are built up in the same way until a pile four to five feet in height is formed. The pile should taper toward the top and the top should be dished to prevent run off of water.

In case the pile has been packed too tightly, several holes should be made with a crow bar to allow the entrance of air into the centre of the heap. If the pile is situated in an exposed area, it should be covered with a mulch of straw or other material to prevent drying out.

The pile must be kept moist but not soggy. After three weeks or a month, the pile should be forked or turned in such a way that the outside portions are incorporated in the centre. The pile can be turned several times to advantage. Best results are obtained if two piles in rotation are constructed, one completed and undergoing fermentation and the other in the process of being constructed as refuse is collected.

It is not wise to include weeds that have gone to seed, or diseased plant refuse in the pile. Temperatures in the centre are presumed to be high enough to kill seeds and plant pathogens, but unless the pile is systematically forked or turned, it is doubtful whether temperatures toward the outside of the head are sufficiently high enough for that purpose.

Compost beds that have ben properly constructed and frequently watered may be read in three to four months, especially if the weather has been warm. Where cool temperatures prevail and watering infrequent, it may be several months longer before the compost is ready to apply to the land.

Claim Energy Of Water Greater Than Steam Roller

How often have you heard a farmer say after a rain that his field of oats looked as though a steam roller had gone over his field.

By a little figuring you could show him that the energy of that rainfall was much greater than a steam roller. I$t works out like this: Imagine an inch of rainfall spread over one acre and that the rainfall was composed of medium sized drops (8 drops would be one inch wide) falling with a velocity of 17 mph. That volume of water has about the same energy as a nine-ton truck travelling 60 mph.

LOSS CAN BE GREAT

Unless the soil has some protective covering, the loss of soil by erosion is going to be tremendous. Furthermore, the water will not enter the soil to be available for succeeding crops. Since it is not always possible to have the soil protected by a crop, then the importance of good tilth, or good structure becomes evident.

A soil with a good structure is open, spongy, will not smear with a little rain or, in other words, the water soaks in rather than runs off and carries away topsoil. A good soil structure will stand up; the granules will not collapse under impacts equal to the nine-ton truck at 60 mph. Such a soil is easier to work, is well ventilated and if the plant food and weather are right, will produce a worthy crop.

PLANNED CONSTRUCTION

Soils have to be prepared in a structural way to withstand the raindrops. A good structure just does not happen, it is planned for. The better farmers use a soil building crop rotation to be assured of good soil structure and a productive soil; it is able to withstand heavy rainfalls.

It is advisable to grow corn after a sod crop and take advantage of a good soil structure to control erosion. The corn crop does not protect the soil from a pounding rain. When the corn, as cob or ensilage, has been removed a thorough discing leaves the soil open and in a condition to permit the water to soak in. Since a crop of corn damages soil structure more than a grain crop, it is recommended that the land be returned to grain, then hay or pasture for another rebuilding period. Thus the cycle of crops is repeated assuring good soil structure, a sound way to control soil erosion.

Shipping Care Means Profits

Careful handling of livestock being shipped to market can pay big dividends to both the farmer and consumer. The Canadian Veterinary Medical Association says careless handling results in big losses because animals crippled, bruised or killed on the way to market return less to their owner and reduce the meat supply available to the consumer. The C.V.M.A. says much of the loss can be prevented by the use of humane gadgets in loading and unloading animals. The Association also suggests that losses can be prevented or reduced by protecting animals from bad weather, and eliminating broken boards, protruding nails and sharp objects on buildings, fences or on the ground in feed lots.

Predicts Sporadic Attack By Insects This Year

Unfortunately some insect pests of field crops are in outbreak form each year. There will be some sporadic attacks in 1958 but it is hoped none to equal the armyworm attack of 1954 or the aphid outbreak on turnips in 1949. What can be predicted and how can crop loss be reduced if an insect outbreak occurs?

The white grub, the larva of the June bettle, can be predicted reasonably accurately. In areas where there was severe damage in 1957 little or no damage will occur. The large, full - grown grubs will be present in the soil in May and June this year but they feed very little, if at all, in the third year of their cycle. In these areas no control is advised for 1958. In heavy land, poorly drained soil, or in muck, white grubs are only rarely important at any time.

PICTURE FOR 1958

Is the picture for 1958 as bright concerning the armyworms? Unfortunately we cannot predict this pest. If any outbreak is reported, warnings will be issued to all growers. The usual time of attack is July. While the armyworm is always a potential threat, do we have any other insect that is so well controlled most of the time by natural factors such as parasites and predators? If the armyworm attacks, there is a choice of materials such as aldrin, dieldrin, chlordane, heptachlor, and toxaphene that may be used as sprays or dusts or in poison bran bait as well as paris green in poison bran bait.

Wireworm-infested soil is usually known from the injury that has occurred the preceding year. Damage often follows long established hay or pasture, particularly if the grasses predominate. Wireworms may be controlled very effectively and economically by an insecticide such as aldrin, dieldrin, heptachlor, or lindane. With cereal crops, corn, and sugar beets, any of these insecticides may be applied as a seed dressing. Treat all of the soil with aldrin, dieldrin or heptachlor to prevent wireworm injury to potaotes. An overall soil treatment will be effective for several years.

SPORADIC ATTACKS

Aphids attack very sporadically. They can develop with extreme rapidity, thus fields should be watched during the growing season. The turnip aphid is one of the most destructive species on field crops. The last major attack was in 1949, thus, since this aphid may occur in a rather long cycle, we may be due for another attack soon. Materials such as malathion, tepp, and parathion are effective against aphids if applied when the weather is warm.

Note that special safety precautions during application of the insecticide must be taken if you use tepp or parathion. Several other new materials are also available for aphid control.

SERIOUS PEST

The garden slug has been a serious pest in home gardens for a number of years. The first complaints concerning this pest on field crops were received in 1957, when a number of corn fields in Wellington and Huron counties were attacked. One timothy field was severely injured in Huron county. Ready-prepared methaldehyde slug baits may be used in home gardens. It is doubtful if any control is practical on field crops.

The usual pests are likely to occur on potatoes and turnips unless controlled. Growers of these crops are familiar with the fight to avoid crop loss from insects.

Detailed control of insects and diseases of bean, cereal crops, corn forage and hay, potatoes, soybeans, sugar beets, and tobacco are found in an up-to-date series of circulars of the Ontario Department of Agriculture. It is hoped that there will be very little crop loss from insects in 1958.

Tranquilizers Can Help Calves

The Canadian Veterinary Medical Association says that recent experiments in the United States have shown the value of having a veterinarian sometimes use tranquilizing drugs on calves immediately after they are weaned. The Association points out that beef calves from western ranges usually are removed from their native pastures, weaned shipped and placed in strange feedlots within a few days.

These--events coming in rapid order--can cause anxiety and physiological reactions which lower the resistance of the animals and make them more susceptible to shipping fever. Calves left on the ranch of farm often refuse feed and water for several days after weaning and lose weight.

The experiments showed that where the veterinarian gave the calves tranquilizers they made much better gains than untreated calves during the week after weaning.

Old Trees Often Problem In Woodlot

Continual removal of the best trees from woodlots over many decades has often left a great number of "problem" trees. These trees are either of inferior, unmarketable species, or malform, large-limbed "wolf" trees of the more valuable species. They are a detriment of the woodlot, for they occupy valuable space where better trees should stand. They hold back the young reproduction, frequently deforming it.

Such trees should be removed even if there is no direct profit to the owner, forest experts say. The removal will be repaid in future production. Usually such trees do not produce logs, but may be cut up for fuelwood. This year a fairly brisk demand for fuelwood exists near the large centres of population. If the fuelwood cannot be used, or if the trees are too difficult to work up, girdling offers a cheap and effective way of removing these undesirable trees.

Girdling consists of notching the tree with an axe, completely around the circumference of the trunk. It must completely sever the vertical strands of cambium (active growth layer just inside the inner bark of the tree). Special care must be taken where there are frost seams, fire or other cavities, for the tissue is often curved downward. The time required to a tree varies from about seconds for a 6-inch tree to seconds for a 26 - inch. Girdled trees die gradually fall down piecemeal so that damage to advanced reproduction is negligible.

More rapid, complete killing with less sprouting may be obtained by using poison. The poison may be applied to a girdle or to a series of notched around the base of the tree, spaced no more than 4 inches apart. Sodium arsenite is undoubtedly one of the most effective poisons but is dangerous to the handlers and animals in the woods.