

## THE FIELD

### Maintaining Fertility of the Soil.

To the farmer who has very rich land, as is the case in many parts of our state, the maintaining of the soil fertility may not seem of much importance, but in the course of time he will come to know how very important it is just as the New England farmer has long since learned. Many farmers in the western states are already noticing the decrease in the yield of crops from older lands, and if better methods of farming are not resorted to, it will not be many years before the application of commercial fertilizers will be necessary.

The fertility of the soil is one of the great corner stones of prosperity to the people and the wealth of the nation is dependant upon it. We should be careful to use better methods of cultivation and return as much plant-food to the soil as we take from it. The term fertile, as it is generally used, means the ability of a soil to produce crops. Although a soil may be rich in plant food it is not really fertile unless the elements that constitute this food are in available form.

The fertility of the soil may be maintained in many ways. First, let us investigate different methods of tillage as to the effect of each upon soil fertility. Many farmers harvest their crops early enough to let the land be fall-plowed, while others do not work the land in the fall at all. The man who cultivates his land in the fall is the man who raises the largest crop from a given area. Fall tillage loosens up the land so that the water from the melting snow soaks into the ground, and the land freezes and thaws to a greater depth, which is very beneficial to soil that has a scarcity of available plant-food. Fall-plowing, also, turns up the subsoil to the action of the elements, and not only brings this soil with the dormant plant food to the top, but pulverizes it and breaks up the soil granules, so as to expose much new surface of the soil grains to the action of the elements. Thus tillage helps greatly in maintaining the fertility of the soil.

The rotation of crops has been given much attention in the last few years by the leading farmers. There are several practical systems of crop rotation and of course the one to use is the one that best fits your condition and locality. Soil will not stand continual cropping without deterioration to some extent. Every rotation should have some pasturage of meadow-grass in it. Change the meadow or pasture from field to field as often as it can be profitably done. More than two grain-crops should not be raised in succession from the same field if it be possible to raise some cultivated crop or some legume crop. A catch-crop or cover crop can easily be worked in between grain crops and with great advantage in most cases. If necessary, plow catch-crops under for green manure. If possible, use a legume crop, either to harvest or for green manure, such as soy-beans or cow-peas since these crops add considerable nitrogen to the soil. Legume crops of one kind or another should enter into all rotations, for nitrogen is one of the chief constituents which most soils are deficient in.

Barnyard manure is a source of fertility which is sadly neglected by many farmers. If the crops of the farm are fed to stock and the manure returned to the land in good condition, the problem of maintaining the soil fertility becomes much simpler. Quite often the manure is piled up where the rain will percolate through it and take out the nitrates and other valuable constituents, carrying them down the ditches and into the creek or river. If manure can not be hauled directly upon the land as it is made, it should be stored

under cover or in a cement basin so that the liquid manure may be saved. The cheapest and best way to handle it, however, is to haul it out just as often as possible and if there is no cultivated land ready to receive it, spread it on the pasture and make two blades of grass grow where one grew before. Manure adds humus to the soil and humus is what much of the worn-out land needs.

Commercial fertilizers are very expensive and farmers in general can not afford to use them where they have to compete with the farmer who has kept up the fertility of his soil by cheaper means and methods. Chemical fertilizers, however, are used a great deal in truck farming and market-gardening to good advantage. Since so much depends upon the products of the soil, let all of us who are interested in agriculture, strive to keep up the fertility of the soil and thus help to increase the wealth of the nation, and in addition reap our own large harvests.

### Two Important Cabbage Insects.

J. M. Aldrich, entomologist of the Idaho experiment station, has issued a press bulletin treating of two cabbage insects. This bulletin is given in full below:

Much damage has been done in Idaho in recent years by the imported cabbage butterfly, which has spread throughout the entire state. The butterfly, which is almost pure white in color, is the adult form of a green caterpillar, which differs from several others affecting cabbage, in that it eats into the head instead of confining itself to the outer leaves. While the damage is always much worse in the latter part of the season, caterpillars will be found by June, and at this time of the year may be readily destroyed by spraying the plants with paris green, a heaping teaspoonful to a large pail of water. This treatment should be repeated two or three times, the last application being made when the cabbages have already begun to form small heads. Spraying with poisons is not recommended after the heads are an inch or two in diameter.

As soon as worms are found to be getting into the heads, treatment with pyrethrum should be begun. A pinch of dry powder dropped into the head and as much as possible on the caterpillars is the method. Still better would be the use of a tin pepper-box with which to sprinkle the powder upon the cabbages. The holes in the top of the box may need slight enlargement. The powder kills the caterpillars by contact. It soon loses its strength after exposure to the air, and is not in the least dangerous to man. Persistent treatment in accordance with the above directions will give good results.

The cabbage aphid or cabbage louse also causes much loss to horticulturists, as it is always present in large numbers towards the end of the season. It cannot be destroyed by paris green, as it consumes only the sap. The early part of the season is spent on other plants; but before midsummer colonies of lice may be observed forming on the cabbage. This is the best time to spray, as the plants are much smaller than at a later date, and the increase of the lice can be largely prevented.

Strong soapsuds is one of the best and simplest remedies. The exact proportion of soap varies with the brand, and perhaps with the hardness of the water, but can readily be ascertained by trial, as the results are immediate if the solution is strong enough. If applied warm it seems a little more penetrating.

The main difficulty which has discouraged many gardeners is that it is almost impossible to hit all the lice, and enough will survive to make further spraying necessary. This is unfortunately true as a general rule, but much depends on the thoroughness of

application. When the leaves have become large, they must be lifted up so as to strike the under side, where the lice are. This is one of the reasons why earlier spraying should be practiced. Without some kind of spraying machine it is almost useless to try to make any application for this insect, as sprinkling or similar methods does not reach affected parts.

A copy of bulletin No. 84, issued by the Nebraska experiment station, is at hand. This bulletin treats of pasture, meadow and forage crops, detailing tests made by the station of a large number of grasses, clovers and other forage plants. The bulletin is worth sending for and may be had free by writing the director of the experiment station at Lincoln, Nebraska.

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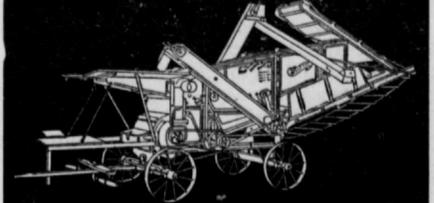
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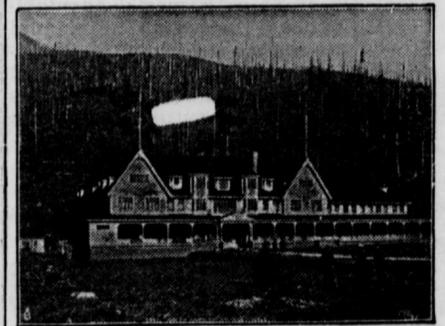
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