

or Quack grass, Perennial Sow Thistle, Butter Cup, Toad Flax, Fleabane Daisy, Field Bindweed and Oxeye Daisy and the like. Most of these are pernicious perennials and able to propagate themselves both by root and seed. The dairy farmer must always be on the alert to detect any new weeds coming on his farm and at their first appearance destroy them.

These plants rob the soil of much plant food and moisture which should go to develop the grain or grass with which they are associated. The toll that dairy farmers are paying in this way every year is very hard to estimate. Often it is as high as 25 per cent. and more. No man can afford to pay such a heavy toll on the hundred acre farm. And what is more he needn't, if he will but study the nature of the weeds he has and go to the work with the determination that he will conquer them even if he has to barefoot a piece of his farm every year. There is need for rousing up over this weed problem. If we don't soon, the Perennial Sow Thistle will make us at the rate it is gaining ground every year. Let 1909 be a year of war on weeds.

Eradication of Quack Grass

Hy. Glendinning, Ontario Co. Ont.

Quack grass has become a bad weed on many farms in Canada. It crowds grain crops and grasses. The plant has weak points. If we can attack it at these points it will be more easily dealt with than by trying haphazard methods.

How many have ever seen quack grass bad on our public road sides where they are closely cropped by a lot of village cows; or on a field where sheep have pastured it closely for a number of years? Few of us have seen it grow under these conditions. Why is this the case? The quack spreads by creeping underground rootstalks. These creeping rootstalks are built up largely from plant food taken from the atmosphere in the form of carbon dioxide. When closely cropped, the plant suffers from a shortage of leaf to take in plant food from the air and this is unable to build up strong rootstalks. Two or three years of this treatment and the plant is so weakened that it dies. The lesson is obvious. We should keep more sheep.

ERADICATION BY PASTURING

The pasturing system of eradication will be more applicable on farms where quack grass is very bad and where time is not available to treat many acres in the one season. The present season has not been favorable for destroying this weed by working the land owing to its wet condition.

By cultivating wet land where quack grass is present we only transplant it to other parts of the field, and make the second condition worse than the first.

Owing to the late season, many fields that were intended for such grain as oats and barley have not been seeded with these grains. If such fields are infested with quack grass an excellent chance is afforded to destroy it by planting the land shallow and cultivating and harrowing the rootstalks to the surface, where they will be killed by the sun. If very plentiful it will be better to rake them up with the horse rake and burn them. Follow this treatment by seeding thickly with buckwheat.

SMOTHERING BY BUCKWHEAT

All the quack grass will not be killed by this treatment. A number of plants will be found in the autumn after the crop is harvested. If those plants are carefully examined it will be found that they have very short and weak rootstalks, owing to the smothering effect of the buckwheat. We have here again applied the same law of nature as in close pasturing. The buckwheat by its smothering effect prevented the leaves of the quack plant taking in a full supply of plant food from the atmosphere.

By planting the buckwheat stubble in the fall and cultivating so as to bring the rootstalks to the surface, the frost will destroy them, and leave the field practically clean.

Combating Insects and Fungus Diseases of the Potato

L. H. Newman, B.S.A., Sec. C.S.G.A., Ottawa.

In Ontario, the potato grower has two exceedingly aggressive pests with which to contend. These are the potato beetle or "bug," (*Doryphora decemlineata*), and the Late Blight (*Phytophthora infestans*). The remedy for both is spraying and since they both occur during the growing season, a solution combining a poison for the beetles and certain chemicals to prevent or check the propagation of the spores of the blight should be used. Even where there is no evidence of the presence of disease it is found advisable to include in the solution, when spraying to kill the beetles, those ingredients which are designed to preclude the spread of the disease.

The importance of "keeping ahead" of the bugs is a matter which no grower can afford to ignore. Since a healthy growth of foliage is directly correlated with large yields it is essential that spraying should be prompt and thorough. The best known insecticide is Paris Green. This should

be used at the rate of eight ounces to 40 gallons of water. In order to prevent "scalding" of the leaves about four ounces of lime should be added to neutralize the free arsenic which does the damage.

BORDEAUX MIXTURE FOR BLIGHT.

For the potato blight there is no better known preventive than the Bordeaux mixture. This is composed of Copper Sulphate, (bluestone), six pounds; unsalted lime, four pounds; and water, 40 gallons. In order to kill the beetle at the same time as treating the disease add eight ounces of Paris Green to the above mixture. Spraying should be begun early enough to ward off the attacks both of the insects and of the disease. As a rule, the first spraying should be done when the plants are about six inches high and the second and third sprayings at intervals of from 10 to 15 days. Where there are signs of disease the spraying should be continued about every two weeks until five or six applications have been made.

COST OF SPRAYING

For the cost of spraying an acre I quote from Bulletin 49, of the Central Experimental Farm. Bluestone, 72 lbs. at six cents..... \$4.32
Spraying four times, horse and two men, eight hours at 30 cents..... 2.40

PROFITS FROM SPRAYING. \$6.72

The average increase in yield per acre realized by several different experiment stations as a result of spraying is about 90 bushels, or an added money value of \$45.00 an acre. Deduct the total cost of spraying an acre as given above and we still have left the very handsome net profit per acre as a result of our industry of \$38.28.

METHODS OF APPLYING SPRAY MIXTURES

In order to grow potatoes successfully it is considered absolutely necessary to have a spraying pump. Two or three farmers can easily club together in buying this machine if they do not care to undertake the expense of purchasing it independently. A good machine may now be had for from \$25.00 upwards, which expenditure is more than offset in an average year by the increased profits due to spraying a single acre.

We should always have a definite object in view when breeding. If for milk we should breed those animals that have the power of converting food into milk. If for beef breed those that have the predisposition of turning the food into beef. Few animals have the power of performing both of those functions profitably.—Hy. Glendinning, Ontario Co.



Some Leading Men who are Behind the Movement Seeking to Reforest the Waste Areas of Durham and Northumberland Counties

At Cobourg last week, these men met in convention, at the suggestion of Farm and Dairy, to discuss the matter of reforesting the 14,000 acres of waste land that exists in the United Counties of Durham and Northumberland, preliminary to the holding of a monster convention next December to consider a policy whereby these now worthless lands may be made productive. Dr. Fernow, Dean of the Faculty of Forestry at Toronto University, who addressed the convention, may be seen in the front row, fourth from the right. At his right sit respectively Prof. E. J. Zavitz, Forester at the O. A. C. Guelph; Mr. Thos. Southworth, Pres. Canadian Forestry Association; Mr. A. A. Powers, Warden, and Mr. A. A. Colwell, Chairman of the Agricultural Committee of the United Counties' Council. Others in the illustration are members of the Counties' Council and others directly interested in the reforestation movement. A report of the convention appears on page 44.

Photo by C. Kries-Hoff, Cobourg