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R. MORNINGSTAR

THE CONTROL OF WEEDS

Measures and Methods for Getting Rid of Them.

Education Must Accompany Legislation—Farmers Like to Be Shown—Results of Experiments on Over Seventy Farms.

(Contributed by Ontario Department of Agriculture, Toronto.)

In Ontario two methods have been tried for the control of noxious weeds, namely legislation and education. Under legislation there is "The Act to prevent the spread of Noxious Weeds." The main clauses of this act are as follows:

"Every occupant of land, or if the land is unoccupied, the owner, shall cut down or destroy all Canada Thistle, Ox-eye Daisy, Wild Oats, Ragweed, and Burdock growing thereon and all other noxious weeds growing thereon to which this act may be extended by bylaw as hereinafter provided, so often in every year as is sufficient to prevent the ripening of their seed, if such cutting or destruction does not involve the destruction of growing grain.

"The council of any local municipality may, and upon a petition of fifty or more ratepayers shall, appoint at least one inspector to enforce the provisions of this act in the municipality, and fix the amount of remuneration, fees, or charges he is to receive for the performance of his duties; and if a vacancy occurs in the office the council shall fill the same forthwith.

"Any person who knowingly sells or offers to sell any grass, clover or other seed, or any seed grain among which there is the seed of Canada Thistles, Ox-eye Daisy, Wild Oats, Ragweed, Burdock, or Wild Mustard shall for every such offence incur a penalty of not less than \$5 and not more than \$20.

"Any person who sows any wheat or other grain knowing it to be infested by the disease known as smut without first using some proper and available remedy to destroy the germs of such disease, shall incur a penalty of not less than \$5 and not more than \$20."

A few years ago an investigation was made into the effectiveness of this act and it was found that out of the six hundred townships of Ontario, only ninety-two were making any effort to enforce it. In forty-nine only had inspectors been appointed. In regard to the work of inspectors, seventeen townships reported the work of the inspectors as satisfactory; fourteen reported that the work was partially satisfactory. Out of the six hundred townships of the province, fifteen only reported that this act was successfully enforced; seventy-two that it was partially enforced; and the remainder reported that it was practically a dead letter. It would seem from this investigation that legislation is having but little effect in the control of weeds in Ontario.

Legislation without education is, in the opinion of the writer, useless. It is only when the sentiment of those concerned is behind an act that it can be successfully enforced and such sentiment can be created only by proper education.

In regard to education, considerable has been done by the Ontario Agricultural and Experimental Union. This organization in co-operation with the Department of Botany at the Ontario Agricultural College has carried on, during the past eight years, co-operative experiments in weed eradication. Over seventy farmers have conducted successful experiments. The weeds experimented with were—Perennial Sow Thistle, Twitch Grass, Bladder Campion or Cow Bell, Wild Mustard, Ox-eye Daisy, Field Bindweed, Wild Oats and Chess.

The objects of these experiments is to get data from which definite statements may be made regarding the best methods of controlling the various bad weeds. It is hoped to include more weeds each year until exact information has been obtained concerning the eradication of most of the bad weeds in the province.

The results of this work are presented each year at the annual meeting of the Experimental Union at Guelph and the more important results are published in the annual report.

Six of these experiments have now been carried on for eight successive years, and some very valuable information obtained regarding the control of such weeds as Perennial Sow Thistle, Twitch Grass, Bladder Campion, and Wild Mustard. This information may be briefly summarized as follows:

1. That good cultivation followed by rape sown in drills provides a means of eradicating both Perennial Sow Thistle and Twitch Grass.
2. That rape is a more satisfactory crop to use in the destruction of Twitch Grass than buckwheat.
3. That rape gives much better results in the eradication of Twitch Grass and Perennial Sow Thistle when sown in drills and cultivated

than it does when sown broadcast.

4. That thorough deep cultivation in fall and spring followed by a well cared for hoed crop will destroy Bladder Campion.
5. That mustard may be prevented from seeding in oats, wheat or barley by spraying with a twenty per cent. solution of iron sulphate without any serious injury to the standing crop or to fresh seedlings of clover.

In addition to this experimental and educational work of the Agricultural and Experimental Union, the Department of Botany has carried on various experiments in the eradication of many of the worst weeds of the province.—Prof. J. E. Howitt, O. A. College, Guelph.

RIGHT HOG IS NEEDED

PROBLEM OF SECURING GOOD BACON.

Lard Type of Swine Not Suited to Canadian Requirements—Western Report Experience—American Settlers Have Failed With Corn-fed Hogs in the Wheat Belt.

Hog-raisers would do well to study the case of the Western farmer. Last winter, when the extreme shortage of feed and the fear of a controlled market cast a cloud over the industry, thousands in the three Prairie Provinces sold out, even to their breeding sows. To-day hundreds of them are regretting this rash act. The new crop of coarse grains is turning out well, especially in the northern parts of Manitoba and Saskatchewan, and the prospects of a drop in prices for these are apparent. But to many this will only be regret, for there is no stock to which to feed it. All over the country, writes a special correspondent of the Industrial and Development Council of Canadian Meat Packers, who is touring the West on a special enquiry, one hears of quite high prices being offered for brood sows, but they are not available.

To some extent the late heavy slaughter may be an advantage, if one is to look for the silver lining to a cloud. American settlers who came into the West in numbers during the war years brought with them a large number of the fat, lard type hogs, especially the Duroc-Jersey and the Poland-China. To a certain extent these have met the domestic demand, but they are wholly unsuitable for the export bacon trade. One of the reasons why hog-raising got into disfavor in the West in the last eighteen months is due to these types. The American breeder, transplanted to a northern climate, has been endeavoring—with an American type grown to the south, where climatic conditions make corn-growing far easier and corn-fed lard hogs are required by the markets—to grow hogs for Canadian requirements. The result has been failure. It could not be expected to be otherwise. But the outcome has been a black eye to the whole of the Canadian hog industry, regardless of the fact that the type and method have both been impossible under our conditions.

With an abundant crop of coarse grain there now seems to be every likelihood of a return to hog-raising; not, perhaps, on a great scale for a season, but it is inevitable in the long run. If only this imported notion about an unsuitable breed for our essentially export bacon trade can be uprooted, the food shortage out here may yet prove a blessing in disguise. The Provincial Governments, as well, of course, as the Dominion officials, are courageously preaching an extension of the Yorkshire and Berkshire breeds. Perhaps they could do nothing better in the West than a concentrated attack upon the lard type of hog, which is in every sense foreign to our Canadian trade needs.

Clubs of Young People.

Boys' and girls' club work, club leaders say, has capitalized one of the biggest assets of youth—ambition. In every neighborhood and county where club work is carried on there are boys and girls who are making records that are significant, for they show a growing capacity for achievement as well as because of the amounts actu-



Boys' and Girls' Club Work Emphasizes One of the Greatest Assets of Youth—Ambition—Club Girls Learning to Plant Gardens.

ally produced. Typical of many young folks in all parts of the United States is Irene Johnson of Blooming Prairie, Minn., whose garden club work may be summarized as follows:

- 1916—Won first prize in home town garden club, \$3.
 - 1917—Garden profits help buy Liberty bond; club garden champion for southern Minnesota; free trip to Minneapolis.
 - 1918—Larger garden; half of proceeds spent for war savings stamps and half for clothing.
 - 1919—Gardened to beat the H. C. of L. Crops included one bushel of fine seed corn grown in garden, valued at \$7; canned large quantities of vegetables; first prize on all vegetable exhibited at local "achievement" event; prizes at county fair for vegetables and canning; total expense \$4.65, net returns \$53.88.
- These figures should interest young Canadians who ought to be able to do as well.

Shallow Cultivation Best.

The Illinois station has conducted experiments that show the advantage of shallow cultivation of corn and also show that ordinary cultivation (about four times) gives practically the same results as frequent cultivation. Following are the results arrived at, showing the average yield in bushels for five years: Frequent cultivation, 68.6; ordinary cultivation, 68.5; shallow cultivation, 71.5; deep cultivation, 65.6.

HORSE BREEDING IN QUEBEC.

May Produce Foundation of French-Canadian Horse.

Draughters have always been, and always will be, profitable to the farmer who produces them. But to pretend that draughters are the only class of profitable horse to raise, is to go too far, just as it is not right to say that tractors are always the most economical for the farm or the city, says Gus Langaller who, in Bulletin No. 95, issued by the Dominion Department of Agriculture, sounds the praises of the French-Canadian horse, which is claimed to be one of the most durable and otherwise useful horses to be found anywhere in Canada.

The French-Canadian horse, which is comparatively little known outside the Province of Quebec, is descended from the old-time French-Canadian pony, sent from France to Canada by Louis XIV. These ponies were of the best that could be produced in their own land. They remained for three years the property of the king, and were then distributed among the farmers of Canada, in order to encourage the development of agriculture.

Some few years ago the pedigree records for the French-Canadian horse, maintained by the Quebec Government, were transferred to the National Live Stock Records. Other steps have been taken to maintain the breed as pure as possible. One of the latest methods has been the establishment of a horse breeding farm at St. Joachim, situated some 25 miles east of Quebec City. This farm, which is operated under the Experimental Farms system, has some thirty well selected brood mares. These, together with fifteen of similar quality, kept on the Experimental Station at Cap Rouge, Que., form a collection from which it is hoped to produce a superior new foundation stock for the breed.

Danger From New Diseases of Wheat.

Aside from rust and smut, Canadian wheat crops have been found remarkably free from destructive plant diseases. Recently, however, there have been discovered in the United States two new diseases, "flag smut" and "take all," about the presence of which there has been felt considerable alarm. Now up to the time of writing Canada has not been invaded by either of these new troubles. But growers should be ever on the lookout for these and any other obscure trouble with which their practice has not made them thoroughly familiar.

"Flag smut," so called because the smut occurs on the flags or leaves of wheat, is easily recognized by the long streak of smutty stripes running along the leaves. The affected plants also show a peculiar tangled and twisted appearance as if the leaves were wound around the stem. Any suspicious plant should be sent to the Division of Botany, Experimental Farm, Ottawa.

"Take all," as the name implies, takes all, and is probably the most serious wheat disease known, with the exception of rust. In certain countries, indeed, it is the more serious, as is emphatically claimed by the practical grower as well as the scientific observer. The recognition in the field is not difficult. "Take all" is a root disease, spreading from below up the stem for about one to two inches, discoloring the stem dark brown. The affected plants may be pulled up very easily, their anchorage in the ground is very loose as compared to a sound plant. The affected plants turn yellow and finally die, taking straw and all. Both diseases are most likely conveyed by infected seed grain, hence it is most important to "nip these diseases in the bud" and report all suspicious cases at once. The use of foreign wheats for seed is cautioned against; particularly wheat from Australia is under suspicion.