

Why Grow Corn?

The reasons for growing or making an attempt to grow corn for forage, wherever livestock are kept in any numbers are numerous and cogent. A few of them, given by J. H. Grisdale, Director of Experimental Farms for the Dominion, follow:—

1.—As a plant capable of yielding a large amount of valuable forage under a great variety of soil and climatic conditions, corn is without an equal.

2.—When properly preserved, whether silage or dried, it can be used as material to render less palatable roughage more acceptable to farm animals.

3.—It is the best plant or crop for ensiling that can be grown to advantage in Canada. It is practically a perfect crop for this purpose, hence it helps to solve the great problem of how to furnish an abundant and cheap supply of succulent food for winter or summer feeding of dairy or beef cattle.

4.—When properly grown and well preserved as silage, it is the equal of or superior to roots in feeding value and palatability. It can, however, generally speaking, be more cheaply grown and more easily preserved than roots.

5.—The labor of growing an acre of corn is of a character much more agreeable to perform, and much less arduous than that of growing an acre of roots of any description.

6.—Corn being cultivated or hoed crop, serves well to clean the land, that is, free it from weeds, so fitting it for grain growing, and putting it into condition to seed down to grass or hay.

7.—Corn is a gross feeder, and may be depended upon to make good use of an ever so abundant supply of plant food. It is, for this reason, particularly well adapted to occupy that place in the rotation where humifying vegetable matter, and a fairly liberal supply of barnyard manure unite to supply large quantities of plant food suitable for root, leaf and stem growth, rather than for seed production.

8.—The growing of corn on a fair proportion of arable land on the farm will permit of keeping more cattle, and so increase the revenue as well as augment the manure supply, so essential to the maintenance of soil fertility.

9.—Corn, when preserved as silage, can be stored much more cheaply in less space than any other roughage. In addition, stored in this way it will keep indefinitely, and is always ready to feed. Ten tons silage occupies no more space than one ton hay. One ton hay is worth about two and one-half tons silage.

10.—In thirty years' experience in farming in the Ottawa Valley, the writer has seen all kinds of grain crops utter failures; he has seen hay so light as not to pay for the making and roots and potatoes practically nil, but in all that time he has never seen a failure in the corn crop. There has always been a fairly profitable return from the fields in corn.

11.—It makes it possible to greatly lessen the pasturage, consequently more land can be brought under cultivation.

12.—At a moderate estimate, two cows can be kept on the same acreage and at the same cost when corn silage is properly grown and used, as one on the same farm when cattle are fed on hay or other roughage.

Treating Seed Grain for Smut.

Editor "The Farmer's Advocate":

Would you kindly give me information through the columns of your valuable paper as to how to treat seed oats for the prevention of smut.

Lincoln Co., Ont.

A. G.

The importance of clean seed cannot be too strongly impressed upon grain and seed growers. Clean seed should mean pure seed (as to variety and class), seed free from all noxious weeds and also seed free from the seed (spores) of smut. To prevent smut, two precautions are necessary. First—sow seed from a crop which had no evidence of smut, and secondly—treat the seed by some method which will kill the smut spores and leave the germ of the seed uninjured.

For the stinking smut of wheat, the loose smut of oats and the covered smut of barley, three smuts which have very similar life histories, the formaldehyde treatment is recommended. Never treat the seed more than three days before sowing, and be careful to sterilize the bin or bags into which the seed is placed after treatment, and also sterilize the seedbox on the drill. The sooner the seed is sown after treatment the better.

Several different percentages have been recommended in the formaldehyde treatment, but experiments carried on at the Ontario Agricultural College showed the greatest yield of both winter wheat and oats to be produced from seed immersed in a solution made by adding one pint of formalin to 42 gallons of water for a period of twenty minutes. This treatment was also most effective in preventing the trouble from smut.

The grain should be stirred while soaking. This is no doubt about the best method to follow.

Some authorities advise piling the grain on a clean floor, and by sprinkling it and shovelling it over and over thoroughly moisten it with formaldehyde solution of one pound to thirty-five gallons of water. After the grain is thoroughly moistened cover the pile tightly with a canvas or tarpaulin for two or three hours. Of course the grain must be spread out to dry in any case before sowing.

Others sprinkle with a stronger solution of formaldehyde and do not cover afterwards. This treatment consists in thoroughly moistening the grain with a solution of one-half pint of formalin in five gallons of water.

Bluestone or copper sulphate is also often used, but the formaldehyde treatment is generally preferable, and especially with oats as the bluestone seems to injure their germinating power somewhat.

The best of the bluestone treatments is to immerse the seed in a solution of one pound of bluestone in twenty-five gallons of water for a period of twelve hours, after which the grain is spread out to dry.

Sprinkling until all the seed is thoroughly moistened with a solution of one pound of bluestone in ten gallons of water, stirring carefully to ensure thorough moistening, is quite effective, and fair results may be obtained by immersing for five minutes in a solution of one pound of copper sulphate to one gallon of water, but as previously stated bluestone is detrimental to germination.

There is also a hot-water treatment, but this we will outline as the double treatment for both



Maple Sap, Nature's Most Delicious Distillate.

stinking smut of wheat, loose smut of oats and for the loose smuts of wheat and barley. These two latter smuts, because they infect the embryo or germ of the seed, can not be reached by either the formalin or copper-sulphate treatment. Soak the seed in cold water for not less than four hours and not more than five hours. Then immerse for a minute or two in hot water at 120 degrees F., and then for barley immerse for thirteen minutes in water at a temperature of 126 degrees F., and for wheat immerse in water at a temperature of 129 degrees for ten minutes. Be careful not to exceed these temperatures and time limits. If the temperature with barley should go up to 127 degrees reduce the time to ten minutes. A temperature lower than 124 degrees is not effective and one above 129 degrees is injurious. Because the grain has been soaked for four or five hours it will not withstand such a high temperature as if it had not been soaked, thus it is that when treating oats for loose smut, or wheat for stinking smut, the grain may be immersed at first in water at 115 degrees F. for a few moments and then in water at from 130 degrees to 135 degrees F. for fifteen minutes, being occasionally stirred.

Unless well equipped and prepared for all difficulties, we would not advise the farmer to try the hot-water treatment especially where other treatments are effective. Of course with the loose smuts of wheat and barley it is the only means to successfully destroy the disease.

Where the seed is immersed, no matter what remedy is used, it can be accomplished quite expeditiously by using two large tubs or half barrels. Bore a hole in each near the bottom and make a plug to fit. Cover each hole on the inside with a wire screen. Set one tub up on a bench and the other so as to catch the solution when it is run off. Fill the upper tub two-thirds full of the solution and put in all the seed it will hold. Soak the required time and then pull out the plug and let the solution drain into the other tub; reversing the position of the tubs, repeat this until all the seed is treated.

The sprinkling of seed in piles or the immersing of it in sacks has the drawback of leaving smut balls in the seed. Many simply use two or three large barrels for the liquid and dip the seed in coarse sacks. This gives fair satisfaction, especially for oats and barley, but as previously stated is not effective in removing the smut balls of wheat. The tub method would be preferable in any case and especially for wheat.

Care must be taken to get the seed sufficiently dry before sowing. Spread on a clean sterilized floor not more than three inches deep, and in sowing allow for the swelling of the seed due to soaking or a light seeding may result. It might be wise to test the seed, especially after using the hot-water treatment, as to germination before sowing. This would give a chance to make allowance for seed injured by treatment in case such should occur. Be careful not to allow the seed to again become infected after treatment and before sowing. And in purchasing formaldehyde insist upon getting the required strength (a 40 per cent solution of formaldehyde).

Caterpillars in Winter.

The unusual mildness of the midwinter general throughout Ontario and Eastern Canada was naturally attended by unseasonable results. A subscriber in Compton Co., Quebec, reported the observation on the last day of January of the emergence from their winter quarters of "thousands of small worms or grubs so numerous that they could be swept together in piles." His communication was accompanied by examples of larvae which seem to belong to the climbing cutworm or one of the cutworm species. The examples were less than a half-inch in length and exhibited the markings and form suggestive of the first named species. These have at times been so numerous in certain localities as to be given the name of army-worms. We should suppose that all the larvae thus prematurely drawn from their hibernation have perished.

THE DAIRY.

The Holstein in England.

Editor "The Farmer's Advocate":

Since the Holstein breed of cattle has had a society to look after its interests in England, it has quickly come to the front, and the useful milk yields that have been recorded from time to time have had not a little to do with the rapid advancement of this splendid dairy breed. Colton Daisy Bell, belonging to Hugh Brown, Colton Mains, Dunfermline, gave 1788 gallons between November 1st, 1911, and December 13th, 1912. Gorstange Gouda, the property of Mrs. Townshend, Sandiway, Cheshire, after a previous record of 1,778 gallons in 14 months, has produced 1,692 gallons between February 18th, 1912, and January 11th, 1913. John Caddey, Egham, Surrey, possesses two heavy milkers, Egham, Priceless and Egham Pride, the former having yielded 8,107 gallons in her last six lactations, the average being 1,351 gallons of milk per lactation. At 18 cents per gallon this cow has produced milk to the value of \$1,515 in six years and four months, the total number of milking days being 1,866. Her best average is 19.492 quarts daily from February 14th, to November 7th, 1911, 266 days in all. Egham Pride has milked to the extent of 1,752 gallons between January 27th, 1911, and August 27th, 1912, the average for the 578 days being 12.126 quarts. Since February, 1906, this cow has yielded 8,052 gallons in six lactation periods, the average being 1,342 gallons for each lactation. Her best record was made in 1907, when she averaged 16.6 quarts daily over 273 days. At the basis of 18 cents per gallon, this cow's milk in six and a half years has been worth over 1,505 dollars.

Dutch cattle were first introduced to England by the Teutons, who brought their cattle with them when they were summoned from Jutland, Holstein, and Friesland, to assist the Britons— from whom the protection of the Roman legions had been withdrawn—in repelling the attacks of the Picts and Scots. Storer says that these cattle were descended from the Urus, the ancient wild ox of Europe. Mention of Dutch cattle in England was made in "Systema Agriculturae," by J. Worledge, published in 1681, the reference to cows and oxen containing the following para-

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