

RURAL AND SUBURBAN

CORN FOR FORAGE OR ENSILAGE USE

By J. H. Grisdale, of the Ottawa Experimental Farm.

Corn for forage or ensilage corn can be grown to advantage in almost all parts of Canada at present occupied by farmers or stockmen. Results have not been satisfactory in every case where efforts have been made to grow it, but this has very often been due to wrong cultural methods practised or unsuitable varieties grown, rather than to adverse climatic peculiarities.

Reasons for Growing Forage Corn

The reasons for growing or making an attempt to grow this forage crop wherever live stock are kept in any numbers are numerous and cogent. A few of them 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 as ensilage or dried, it can be used as material to render other 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 ensilage, 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 a 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 shape to seed down to grass or hay.

7. Corn is a gross feeder and may be depended upon to make good use of a never 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 barn yard 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 the 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 ensilage, can be stored much more cheaply in much less space than any other roughage. In addition stored in this way it will keep indefinitely and is always ready to feed.

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 to not 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.

The land should be ploughed in nicely rounded ridges exactly 10 ft. 6 in. from centre to centre. All necessary cultivation should be so done as to preserve the rounding surface of the ridges, and the dead furrows should be kept clean and should open into a well-kept ditch, thus insuring good drainage.

In planting, the first row should be run down the middle of the ridge and two others on the same ridge, one on each side, 42 inches away. Thus the rows on the whole field will be uniformly 3 ft. 6 in. apart and always clear of dead furrows.

When to Sow

Corn should be sown as early as weather and soil conditions permit. From the 15th to the end of May, according to district and season, is a very good rule. Very seldom will it do to sow later than June 5th or 6th. Sow when soil is warm and dry.

Methods of Seeding

Corn for forage or ensilage may be planted in rows or hills. If planted in rows as is usually advisable, the rows should be at least 42 inches (3 ft. 6 in.) apart. The plants should stand about 8 inches apart in the rows. In seeding, it would not be advisable to try to sow as sparsely as this. It is better to give a rather heavier seeding and then thin out to the desired thickness with a hoe when plants are 6 or 8 inches high.

If land intended for corn is very dirty, whether from the presence of weed seeds or couch grass, it is usually advisable to plant in hills. The hills should be at least 3 ft. apart each way and from 3 to 5 kernels should be planted in each hill.

Early Crop Treatment

A few days after seeding, say the third or fourth day in warm weather, or the fourth or fifth day in cool weather, it is well to run over the field with a slant tooth harrow or lacking this, with a light smoothing harrow. This will break the crust destroy any weeds and help warm the soil, thus encouraging growth of the corn. A few days after the corn is up, and when it can be seen distinctly in rows, it is often advisable to run the light smoothing harrow over it again. This time it had better be run across the rows. Subsequent cultivation will need to be done with special cultivators.

Later Cultivation

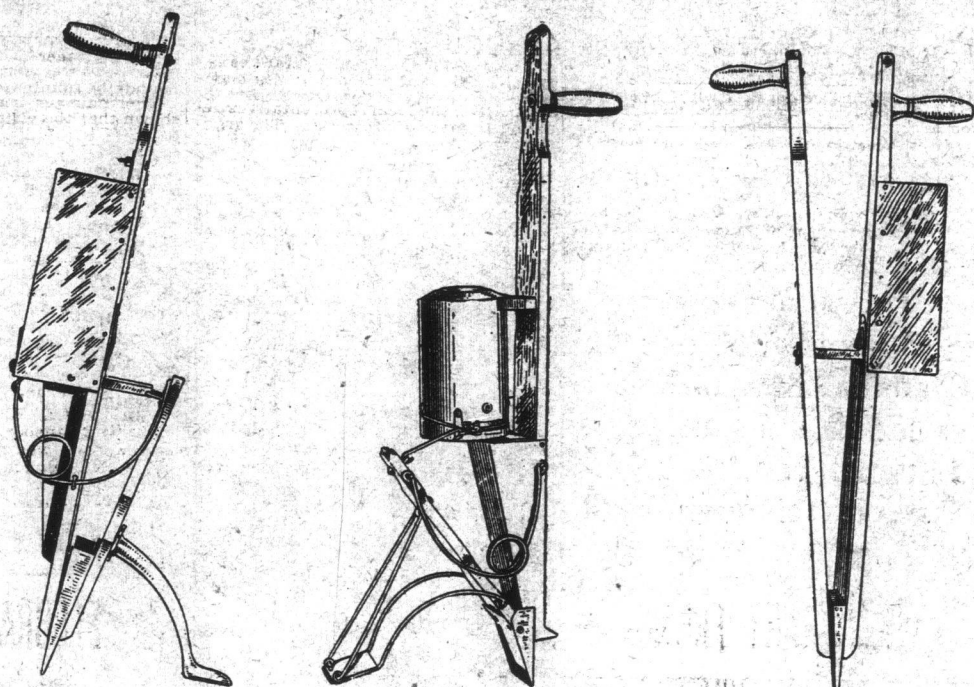
For working the land until the corn stands about three feet high in the rows or hills, the two-horse riding cultivator will give the best results. This implement straddles a row and gives the soil on either side thereof thoroughly good cultivation, being in this respect much superior to the one-horse walking cultivator. The latter implement will, however, be found valuable and necessary after it is no longer possible to work the two-horse cultivator.

The cultivator should be run through the crop, shortly after any considerable rain fall or about once a week in dry weather. As the season advances, a lighter and lighter cultivation should be given. Work may be stopped usually when the corn is so high as to hide the horse and driver from view, but

cut, it is often well to let it lie for a day or two between cutting and ensiling. If very dry when cut, it is sometimes well when ensiling to pour a few gallons of water around the wall of the silo for each foot in height as the ensilage rises, say one gallon water to one in height of rising ensilage.

In any case, the corn should be cut into short lengths, the shorter the better, say half-inch lengths and well mixed, the leaves with the stems and ears all the way up. It is well also to tramp and fill most carefully around the walls.

It is impossible to properly fill the silo at the one time. It should be filled to the top, allowed to settle for a few days then filled again. It is advisable to repeat this settling and filling more than once if possible.



Hand Corn Planters

sometimes, however, later cultivation will pay. This will be the case when a superabundance of weeds shows up, as may occur in a very wet season, or when the corn suffers from drought in a very dry season.

Hand Work

A certain amount of hand hoeing is usually necessary. This should be done first when the corn is six or eight inches high. The thinning to eight inches apart in the rows should receive attention at this time. Plants should be cut clean out to prevent suckers coming on again. Later it will be found advisable to again go over the field and remove any further weeds that may have come up in the rows. As already stated, when a field is particularly dirty, it is advisable to sow in hills and the cultivators can then be worked both ways. The amount of hand hoeing will in this way be very much lessened.

When to Harvest

Corn will be ready to cut for forage or ensiling when the grain or kernel is in the dough stage and has begun to glue. If weather conditions are adverse, that is, cold and wet, it is often advisable to cut before this stage of maturity is reached, when for any reason the crop is late in maturing. Frost does not spoil the crop for either forage or ensilage, but the feeding value is quite materially lessened if the leaves and stalks are badly frozen.

Making and Preserving Dry Corn Fodder

Where no silo is at hand to use in storing and preserving the corn, very satisfactory results may be expected by drying the crop for fall or winter use. To preserve in this way, the corn should be bound into sheaves 8 to 12 inches in diameter and five or six of these made into an open but firmly built shock, the tops being bound together to lend further strength. These shocks, if well built, may be expected to stand as long as it is desired to leave them in the field. In fact not a few farmers haul them in as needed all winter.

If barn room is available, they might be hauled in and stored on top of mows or elsewhere, care being taken to place them erect and not to pack too tightly as there is danger of heating or mould. If the corn is fairly dry and straw is plentiful, the corn might be hauled and stored among the straw, placing it in layers, being careful to have a good thick layer of straw, at least 2 feet, between the layers of corn sheaves.

Where it is not desired to leave in shocks in the field and no barn room is available, a satisfactory plan is to haul to the near neighborhood of barn and stand in rows on either side of trestles so arranged as to allow prevailing winds to blow down alleys between rows of corn.

Feeding Corn Fodder

The best method of feeding dry corn is to run enough of it through the cut box to last a week or ten days. Mix straw or cut hay with this cut fodder corn. This mass will quite probably heat to a certain extent but this will increase the palatability, unless allowed to lie for too long a time. It is possible of course to feed without cutting, but considerable loss of food and comparatively unsatisfactory results may be anticipated when the forage is fed uncut.

Ensiling

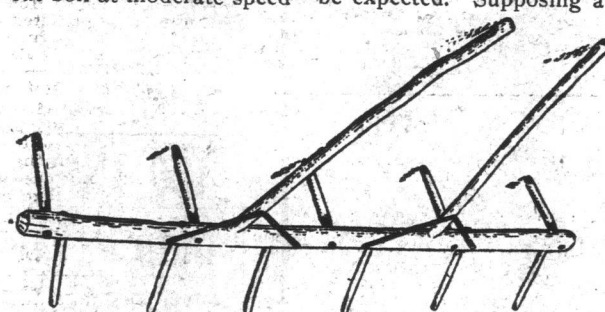
The really best way to preserve corn and the way to get the greatest returns from the field in the shape of food, is to store it in good silo. If very juicy or lacking maturity when

When filled for the last time the surface should be nearly levelled, slightly higher in the middle if anything and well tramped. If possible to put a few barrels of water on the surface, less waste may be anticipated. Particularly in this true if the water is used freely around the wall.

The Cut Box

Two distinct types of machine exist for cutting corn into the silo, the chain elevator cut box and the blower.

The chain elevator cut box will do satisfactory work with much less power than will the blower, hence is the advisable kind to buy for the man whose motive power is small. A good two-horse tread power will drive a fair sized chain elevator cut box at moderate speed



Marker where corn is to be sown in hills by hand

and raise the silage 30 feet. A very much greater power is required to drive a cut box of the blower type. Another reason in favor of the chain elevator type for the farmer who must own his cut box is the smaller number of men required to handle economically. However, where all the men and horses necessary can be counted upon and powerful engine is available for driving, then the blower type of cut box may be expected to do the work of filling the silo more cheaply and much more expeditiously than one of the chain elevator sort.

In any case, great care should be taken to keep all machinery in good running order, and particular attention should be paid in keeping the cut box knives sharp and properly set.

Using Ensilage

The ensilage will of course always be taken from the top when it is being fed out. The surface should be kept as level as possible and in winter it will be found good practice to keep the surface a little lower around the wall than in the centre. This will largely prevent freezing to the walls or into the body of the ensilage. Frozen ensilage once it is thawed out, is, however, quite as good as any other.

Ensilage may be fed direct to cattle, just as it comes from the silo, but a better plan is to add to the ensilage a considerable amount, say 10 or 15 lbs. of cut hay or chaffed straw to 100 lbs. ensilage. If floor space is available for the purpose, mixing sufficient cut hay or chaff and ensilage to last several days (3 or 4) will prove to be a very satisfactory method of preparing feed for cattle and a method that they would seem to approve. Any meal to be fed should be thrown on the mixture of straw and ensilage after it is in the manger. Stir the whole mass after sprinkling meal. An average cow will consume about 40 lbs. of such a mixture of ensilage and straw or hay a day.

Rations Including Corn Ensilage

Corn silage and straw chaff, while together making up a most excellent foundation or base, do not alone constitute a well-balanced

or suitable ration for any class of live stock. For feeding heifers or young stock some bran and clover hay should be added. A suitable ration would be:

For yearling heifers—
Corn silage 25 to 35 lbs.
Straw and chaff 4 " 6 "
Clover hay 4 lbs.
Bran 2 lbs.

For dry cow—
Corn silage 50 to 60 lbs.
Straw 4 " 6 "
Clover hay 4 lbs.
Bran 1 to 2 lbs.

For cow in milk—
Corn silage 45 lbs.
Straw 6 "
Clover hay 4 to 6 lbs.

Meal mixture: bran, oats, gluten or oil cake meal or cottonseed meal, equal parts. One pound meal to three or four pounds milk produced per diem.

For steers running over winter (1,000 lbs. weight)—

Corn silage 60 to 75 lbs.
Straw 8 to 12 lbs.
Clover hay 2 to 4 lbs.
For fattening steers (1,000 pounds)—
Corn silage 50 to 60 lbs.
Straw 6 to 10 lbs.
Hay 3 to 6 lbs.

Meal—starting at one pound go up to 10 lbs. per diem.

A good meal mixture would be corn, bran, barley and oil cake meal, gluten meal or cottonseed meal. Take bran and corn, bran and barley, equal parts, or bran, corn and barley, equal parts, to which add an amount of any one of the last three equal to one-quarter of the total weight of the meal mixture when ready to fed.

Cost of growing One Acre Corn and putting same in Silo

Ploughing	\$2.00
Disc harrowing, half day	1.25
Harrowing, one-quarter day	0.62½
Seed, 20 lbs. at 2 cents per lb.	0.40
Planting, one-tenth day	
with team	0.25
Harrowing and cultivating	
(10 times)	2.50
Hoeing, one and a half days	2.25
Cutting, quarter day, with team	0.62½
Hauling, one day, team	2.50
Men loading, unloading and	
ensiling, 3 days	4.50
Use of power for cutting, etc.	1.00
Use of machinery and twine.	50
	\$18.40

To this might be added \$3 for rent for part of manure used up. This would make a total cost of \$24.50. From an acre of corn worked as indicated, from 14 to 20 tons ensilage might be expected. Supposing an average crop, say

be expected. Supposing an average crop, say 16 tons, then one ton corn in the silo, ready to feed, would have cost \$1.53.

Silos

Stave silos are entirely satisfactory. They should, however, be very carefully and staunchly built on a good cement foundation. The cost will run from \$1 up to \$3 per ton capacity.

Cement silos are very durable and quite satisfactory, if well built. They will cost from \$2 to \$5 per ton capacity. Care must be taken to build of good material and to strongly reinforce with wires or bands.

The round shape is essential to best results. Where wood is used only one thickness of two inch staves, or one thickness inch dressed lumber in square or straight line walls should be used.

Equipment

Cost of extra equipment necessary to start into corn cultivation and ensiling on a large scale on a Canadian farm.

Double cultivator	\$ 60.00
Single cultivator	6.00
Corn harvester	140.00
Corn blower or cut box	140.00
Silo—say about	300.00
Total	\$646.00

Such equipment may be expected to last 10 or 15 years, say 13 years, or \$60 a year. The whole cost is likely to be repaid in about three years. The silo might possibly last 20 years.

Summary

1. Corn will grow on any well drained and well manured soil.
2. Thorough soil preparation is absolutely necessary.
3. Corn should not be sown closer than 3 ft. apart in hills, or if in rows, 3½ ft. apart, 8 inches between plants in the rows.
4. Sow varieties suitable for district. Varieties that will mature fairly well are necessary.
5. Keep field well cultivated and free from weeds.
6. Cut in dough stage.
7. Preserve in silo if possible.
8. Mix chaff or cut straw with ensilage when feeding.

STRAWBERRIES IN YOUNG ORCHARD

It is questionable, said Prof. J. W. Crow at the O. A. C. short course in fruit-growing, last February, whether such long-lived, vigorous-growing trees as Baldwin and Spy should be planted closer than 40 feet apart each way. For quite a number of years much of this land is unoccupied. Interplanting with quick-maturing, early-bearing varieties of apples would in many sections be found to give splendid returns. Or plums, peaches and cherries may be used. These trees should be removed at the end of about 12 years, but the period will vary with the vigor of growth of the standard trees. A man should not interplant in this way, however, unless he has the courage to put the axe to the trees at the proper time.

James E. Johnson, of Simcoe, grows strawberries as fillers. From the ten acres grown in this way last year, 84,000 baskets were harvested. This is rather a small crop for Mr. Johnson. The berries are grown in a matted row about eighteen inches wide. The rows are forty-two inches apart from centre to centre. In the first season, cultivation goes on steadily once or twice per week. In the fall these berries are mulched with straw. After the first crop is removed, the mower is run over the ground, then the hay tedder is put on, and, as soon as the whole is dry, fire is run over the patch. Then the land between the rows is plowed, and the rows narrowed to about one foot. The harrows are now put on, and the whole thoroughly cultivated. The mixing of the fresh earth with the plants is an advantage, but care should be taken to see that they are not buried. Cultivation is kept up for a time. In the winter another mulch is put on, and then the patch is ready for another crop. After the second crop is harvested, the patch is plowed up. When the berries are in an orchard where the trees are getting big, it will not do to burn the straw on the ground.

In selecting plants for a new patch, the whole row is dug, and only the best plants chosen. This is important, as the ordinary method of choosing plants from the outside of the row does not give good results. In growing matted rows, it is necessary to place each runner in its proper place, and then cut off new runners so that the new plant shall spend all its energies in getting ready to bear next year.

Spraying the Strawberries

Spraying is done once or twice before bloom. A very heavy application is given of Bordeaux made up of copper sulphate 6 lbs., lime 10 lbs., water 50 gals. A traction sprayer is used. This is considered one of the most important operations in the growing of the crop.

L. A. Hamilton, Lorne Park, also interplants his orchard with strawberries. Mr. Hamilton is an example of a business man who came out into the country, and, without previous experience, has learned how to produce crops of high quality, and profit. His methods approach those of Mr. Johnson; he also takes two crops of berries, and then plows up. The following are some of the points brought out in his address:

Size, color, hardness and quality are the four main essentials in a good strawberry. Size and color are most important for the home market, because consumers pay more attention to these things than to quality. Some of our smaller berries are of the finest quality, but grocers and consumers do not seem to want them. Then, too, it is much harder to secure pickers for small berries than for large ones. For shipping, hardness—that is, carrying quality—is perhaps the most important, but it must also be combined with size and color.

Rolling the soil tends to the exhaustion of moisture. Last year the patch was rolled just previous to marking the ground for planting. Then, circumstances intervened which delayed planting. When the plants were set, the ground was very dry, which resulted in a partial failure of the plantation. Heavy applications of commercial fertilizers are used.

It does not pay to have the rows too wide; 1 to 18 inches is the limit. The best berries grow on the outside of the rows, and, if the rows are very wide, the pickers crush the berries. Have the pickers pick each half of the rows on either side of the place where they are walking. This saves crushing of the berries.

In regard to varieties, Glen May, a perfect-flowering variety, seems to be best suited to the district. For shipping or canning, Williams is good, but as it has a green end, it seems to be losing a little in favor. Sample seems to be the coming berry for shipping. Mr. Hamilton is experimenting with a number of new varieties, of which Three W's, Chesapeake, and \$100 seem to be best. These are very promising, and last year stood the drouth exceedingly well.

Great stress was laid on the value of spraying. This is done with great thoroughness before and after bloom. The formula used is copper sulphate 4 lbs., lime 12 lbs., water 40 gals. The first time the patch was sprayed, the foreman announced that the vines would all die, but they managed to live all right, and the strawberries were magnificent.

A rotation of crops is absolutely necessary. The rotation followed is: Sod, grain, clover, roots, strawberries. After first crop is removed, the straw is tilled up and burned. One very dry year the fire injured a lot of the crowns of the plants. At the end of the second crop, the land is plowed, and sowed to hairy vetch, or sometimes to turnips.—Farmers' Advocate.

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TAKE NOTICE

I, W. M. Harlow, by occupation, Superintendent, of Victoria, British Columbia, do hereby certify that the following is a true and correct copy of the description of land as contained in the report of the Surveyor General of the Province of British Columbia, dated the 15th day of July, 1910, and filed in the office of the Surveyor General, at Victoria, B. C., under the name of "W. M. Harlow," and that the same is a true and correct copy of the description of land as contained in the report of the Surveyor General of the Province of British Columbia, dated the 15th day of July, 1910, and filed in the office of the Surveyor General, at Victoria, B. C., under the name of "W. M. Harlow."

NOTICE
John Day, hereby give notice that on the 15th day of July, 1910, the Superintendent of provincial lands at Victoria, B. C., for a renewal of my license to sell intoxicating liquors at the premises known as the Hotel Hotel, situated in the district of Esquimalt, B. C., under the name of "W. M. Harlow," and that the same is a true and correct copy of the description of land as contained in the report of the Surveyor General of the Province of British Columbia, dated the 15th day of July, 1910, and filed in the office of the Surveyor General, at Victoria, B. C., under the name of "W. M. Harlow."

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REHOUSE FOR G.T.P.

Costing \$12,500 to be Built in Conjunction With Wharf Street Docks.

Grand Trunk Pacific Development Company is about to construct a frame warehouse on Wharf Street to be used in conjunction with the docks now being built. The building will be one storey in height with an iron roof. Its cost is \$12,500. The purpose for it is to be built to store the goods brought to port by the G. T. P. A building permit has been issued by W. M. Ross for the erection of a one storey dwelling on street at a cost of \$1,500. It is a nice refreshing cup of broad and butter and cake, light lunch at Direct Importing Coffee Store, 1307 Broad St.

Theft of Jewelry
NTO, May 13.—Innocent work days and two nights on the whole of Toronto's detective was rewarded today by the arrest of three men in connection with the alleged theft of jewelry. The property of H. McCoy, of St. Catharines, jewels with the exception of a few settings have been recovered under arrest are Anthony, a chauffeur, who has been charged with the theft of the jewelry; Gibson, an ex-policeman, who has been charged with the theft of the jewelry; and Henry, a man who has been charged with the theft of the jewelry. The three were in a silver mesh were lost by Mrs. McCoy evening, April 29.