

another may be placed. Several loads may thus be worked in.

5. We like a cement bottom and recommend a drain especially in an unroofed silo. A line of ordinary 3-inch field tile is sufficient but should be screened with perforated metal plate, and it is probably well to have it trapped to prevent air getting into the silage. Our drain, however, has no trap and the need for it has not been demonstrated very conclusively.

The Influence of Heredity in Mangels.

In studying the relative feeding values of the more common types of farm roots, as determined by analysis, it was found by the Dominion Chemist, Frank T. Shutt, M. A., that greater differences might exist between two varieties or strains in the same class of roots than between the classes themselves. Thus, while averages taken season by season showed that mangels, as a class, contained more "dry matter" than carrots, the differences in this regard between many of the strains of mangels examined were frequently greater than between the aforesaid averages. It was further discovered that, arranging the varieties of any class according to their dry-matter content, much the same order was obtained season by season. These results seemed to point to certain inherited qualities and that, in spite of seasonal influences on the composition of the root, the relative value for feeding purposes of any particular strain, as compared with other strains or varieties in the same class, would be maintained from year to year. To obtain further information on this interesting point, which implies the transmission of characteristics of composition in roots, two varieties of mangels—the Gate Post or Long Red and the Giant Yellow Globe, were selected in 1900, as typical of the richer and the poorer varieties respectively. These have been grown every season since that time, side by side on practically identical soil, and with the same manure and culture, the harvested roots being analysed as to dry matter and sugar content. In the following tabular scheme are presented the data obtained, including those of the past season and the averages of the twelve years' results.

Season of growth	Gate Post			Sugar in juice	Giant Yellow Globe		
	Average weight of one root	Dry matter	Per cent.		Average weight of one root	Dry matter	Per cent.
	Lbs.	Oz.		Per cent.	Lbs.	Oz.	
1900	2	9	11.14	6.15	3	3	8.19
1901	2	9	9.41	4.15	3	3	9.10
1902	3	2	13.90	9.39	3	9	10.24
1903	3	3	12.93	7.38	3	13	10.89
1904	2	14	12.64	7.62	2	13	9.24
1905	2	13	12.07	6.83	3	12	8.64
1906	2	2	12.90	6.59	1	8	12.73
1907	3	10	12.53	7.25	2	7	10.78
1908	1	11	12.02	4.94	2	4	10.66
1909	3	14	11.82	6.64	3	7	10.95
1910	6	8	9.59	4.26	6	13	7.80
1911	2	11	10.04	3.86	3	1	6.66
Average for 12 years			11.75	6.26			9.66
							4.55

It will be observed that while the differences in composition between the two varieties are, from year to year, by no means constant, the Gate Post has every season proved the superior root. Taking the dry-matter content as the basis of calculation, it will be found from the average of twelve years that the Gate Post mangel is approximately 20 per cent more nutritious, weight for weight, than the Giant Yellow Globe, or put otherwise, one ton of the former has the feeding value of 1 ton 427 lbs. of the latter. The average yields of these two varieties for twelve years (1900-1911) at Ottawa, as furnished by the Cereal Division, are Gate Post, 32 tons 758 lbs.; Giant Yellow Globe, 32 tons 713 lbs.; which goes to show that there is not much difference between these mangels as to cropping values. However, on calculation, using these averages as to yield and composition, the superiority of the Gate Post is readily seen, for from it 7,600 lbs. per acre of dry matter would be obtained, whereas from the Giant Yellow Globe, from the same area, there would be but 6,250 lbs.

The dry matter of mangels is completely digestible, or practically so, and is of very considerable value as a source of heat and energy to the animal by reason of its high sugar content. Comparing these varieties from this standpoint of richness in sugar, it is apparent, from the averages of the yearly analytical data, that in the Gate Post approximately 50 per cent. of the dry matter is sugar, while in the Giant Yellow Globe this percentage is 45, another indication that the Gate Post is the more nutritious variety.

A Boy's Essay on Growing Corn.

(Prizewinning essay by boy or girl under sixteen years of age, at the Ontario Corn Exhibition, 1913.)

PREPARATION OF SOIL

To grow a good crop of corn the first and most important thing is a thorough drainage of the soil. This can only be secured by tile drainage. The most important thing in tile drainage is to have a proper outlet. The tile should be placed about two or two and a half feet deep and not more than four rods apart, with a fall of about twelve inches in every forty rods. The field should be fall plowed and well furrowed, so all surface water will be carried off as quickly as possible. In the spring, as early as it can be worked, it should be well disced, harrowed, and furrowed. This will give all weed seeds time to germinate. About the middle of May it should be well disced, harrowed, and furrowed again, and is ready for planting. It should be planted about three feet eight inches apart, and with three kernels in a hill.

SELECTION AND TESTING OF SEED

The proper time to select your seed is in the fall before the corn is cut, but if it is impossible to do it then, it should be done while husking. In the selection of seed, the shape of ear, size of cob, depth of kernel, and germination are the most important features to be considered.

Before planting your corn it should be tested. Procure a largeshallow box, mark it off into sections about one and a half inches square and number each section, then number each ear, take six kernels from different places of the ear and after putting some fine soil in the box place them in the section numbered the same as the ear. After the box is filled, about one half inch of fine soil should be placed over the corn. If kept in a warm place and moistened daily it should be well sprouted in four or five days. If the kernels germinate in that time and produce a strong, healthy plant that ear should be selected for seed. If they are slow to germinate, and produce small, weakly plants they should be discarded.

CULTIVATION.

As soon as the corn is three or four inches high the cultivator should be put to work. The

be about five feet wide at the bottom, and seven feet on the top, and not more than eight feet deep.

Essex Co., Ont.

STANLEY PLANT.

THE DAIRY.

The Difference in Milkers.

Every observant dairyman knows there is a great difference in the amount of milk that may be secured from a cow by a quiet skillful, as compared with a loud, rough, unskillful milker. It is not merely a question of milking out dry. A cow that has not given over two-thirds her normal mess may have been milked dry to the point where no milker could extract anything more worth mentioning from her at that sitting. Quietness is important and so is skill,—the suppleness of the touch. Milk is largely secreted during the process of milking. If the touch of the milker's hand is uncomfortable to the cows teats and udder, or if his presence is disturbing, she will not give down all her milk. Feel her udder afterwards and you will find it more or less turgid. The materials for milk-making are probably there, but the fluid has not been secreted. Such a milker will soon shrink the flow, especially of a highly strung cow, and may permanently dry her up.

It is not enough, that a milker be quiet, nor yet that he be skillful. He must be both, and even then there will be slight variations in the results secured by various milkers from various cows.

As illustrating this latter point one of the most striking instances we ever heard of was reported recently in Hoard's Dairyman by O. E. Reed, of the Kansas State Agricultural College. A heavy-producing Holstein cow in the dairy herd of the Kansas Agricultural College, freshened in December and was milked for a time by man No. 1, who, after milking her for several weeks, left for a vacation. Man No. 2 took charge of the milking. The cow responded to his milking and gave as much as 81.4 pounds of milk per day. Her highest day previous to this was 70 pounds. Man No. 1 returned after a short time and again took charge of the milking. The cow began to decline in milk production at once, and fell as low as 64.2 pounds of milk per day. After six days man No. 2 was given charge of the milking and the cow began to make an increase in the flow of milk. The following shows the results obtained:

Average of six days by man No. 2, 76.11 lbs. of milk.

Average of six days by man No. 1, 64.88 lbs. of milk.

Average of six days by man No. 2, 69.5 lbs. of milk.

Evidently man No. 1 could not get the cow to respond to his milking as well as man No. 2. For an average of six days the cow gave 11.23 lbs. less milk per day when she was milked by man No. 1. When man No. 2 took charge of her she showed an increase for the next six days of 4.62 lbs. milk per day. Man No. 2 has been milking the cow for two months and the production has never been as low as it was during the six days in which man No. 1 milked her. The influence of the changing of these milkers is really greater than the above figures show. By eliminating the two days immediately after each change, and taking an average of the last four days' milking in each period, we have the following:

Average for four days by man No. 2, 76.8 lbs. of milk.

Average for four days by man No. 1, 63.4 lbs. of milk.

Average for four days by man No. 2, 70.6 lbs. of milk.

The four days milking by man No. 2 would be the last four days he milked her before man No. 1 took charge. Two days were eliminated after man No. 1 took charge and the next four days give the average of 63.4. The average of 70.6 lbs. was made by eliminating the two days after man No. 2 again took charge and making an average of the next four days. The weather conditions and the feeding were approximately the same throughout the experiment. The above results show the importance of changing milkers until each milker is handling the cows which will respond to his milking. This is especially important in large herds where there are several milkers. The evidence is at hand to show that man No. 1 is an efficient milker, and he is able to get more milk out of some other cows in the herd than is man No. 2.

This experiment also shows the importance of keeping daily milk records. Some milkers will dry off cows in a herd and it will be done so gradually that it will not be noticed until the cow is nearly dry. If milk records were kept, such declines could be readily noticed.

HARVESTING

As soon as the corn is well glazed it should be cut, and if cut with the binder should lie on the ground at least one day before shocking, to allow the fodder to wilt. If shocked immediately after the binder it will sometimes mold, and is much heavier to handle. It should be shocked with about fifteen bundles in a shock and securely tied about two feet from the top of the shock. As soon as the fodder is properly cured and the husks thoroughly dried, husking should be done, and while it is still in the field, if it is to be husked by hand, which is the better way, as the shredder shells a great deal of the corn which is more or less a loss.

STORING

As soon as husked the corn should be sorted while being loaded, all soft ears and nubbins should be separated from the good ears. After being properly sorted, it should be placed in a perfectly dry, and well ventilated place. The proper place to store corn is a crib, which should