

Improving and Handling Seed Corn.

From an address by L. D. Hankinson, at the Guelph Winter Fair.

There is no crop in the farm economy that is receiving so marked attention, at the present time in South Western Ontario, as is the production of seed corn. Nearly one-half the cultivated area in that district is devoted to the production of corn.

Until some four or five years ago, very little attention was given to the production of seed corn in this district; corn was grown principally for one purpose: "to fatten hogs." Ontario growers depended largely, if not wholly, upon American corn for their seed purposes. A great deal of this seed was of varieties very unsuitable for Ontario conditions, our season being some ten days shorter than that of the American corn belt.

A few enterprising men came to the conclusion that by the proper choice of varieties, and by properly acclimatizing these varieties, Western Ontario could produce seed corn more suitable for the ensilage growers of this province than that grown across the border.

It was principally through the instrumentality of these men that the Ontario Corn Growers' Association originated, and now we have hundreds of farmers in Essex, Kent and Elgin counties producing seed corn of the highest standard of perfection, and thousands of bushels of South-Western-Ontario seed corn are shipped annually to ensilage growers and farmers of greater Ontario. Many individuals ship from 100 to 500 bushels each, and a few others, who have made a specialty of the corn trade ship by the thousands of bushels. That the corn supplied for this source is giving every satisfaction is indicated by the repeat orders sent to growers each year.

While the enormous growth of the Canadian seed corn trade is possibly due to the efforts of the Ontario Corn Growers' Association, and the enterprise of the individual growers, we have the Canadian Seed Growers' Association to thank for the improvement of varieties. Very few years ago varieties were practically unknown. Growers did make a distinction between dents and flints, but yellow dents and white dents were often grown from the same package of seed, and it all went as simply "ensilage corn." We now have been able to establish several standard varieties and place them on the market as such. Variety characteristics are becoming so marked and established that a corn grower can as well distinguish an ear of Bailey corn from one of the Leaming variety as a stock-man can distinguish one breed of cattle from another.

At the present time we have far too many varieties. The fact that corn crosses so easily has resulted in the development of numberless so-called varieties or strains, and it is impossible to effect any permanent improvement in any of these without first understanding the individual peculiarities, and the good and bad points possessed by each. By complying with the rules of the C. S. G. Association, a systematic study of varieties has been brought about, and the weaker-producing specimens of the variety are eliminated, those possessing the stronger character being maintained and systematically improved.

There is also too wide a variation in the type or strains of the leading varieties, due, possibly to a great extent to cross-fertilization. The Seed Growers' Association guards against this to a certain extent by requiring seed plots to be planted at least 40 rods from corn of other varieties. This difficulty could be greatly overcome by localizing the growing of the different varieties, and by so doing certain districts would become famous for the production of certain corns with a standard of perfection. The low average yield of corn per acre graphically illustrates the necessity for improvement. There is no danger of our corn crop exceeding our needs, for the various uses to which it can be put, multiply out of proportion to the increase in yield, and acreage per annum.

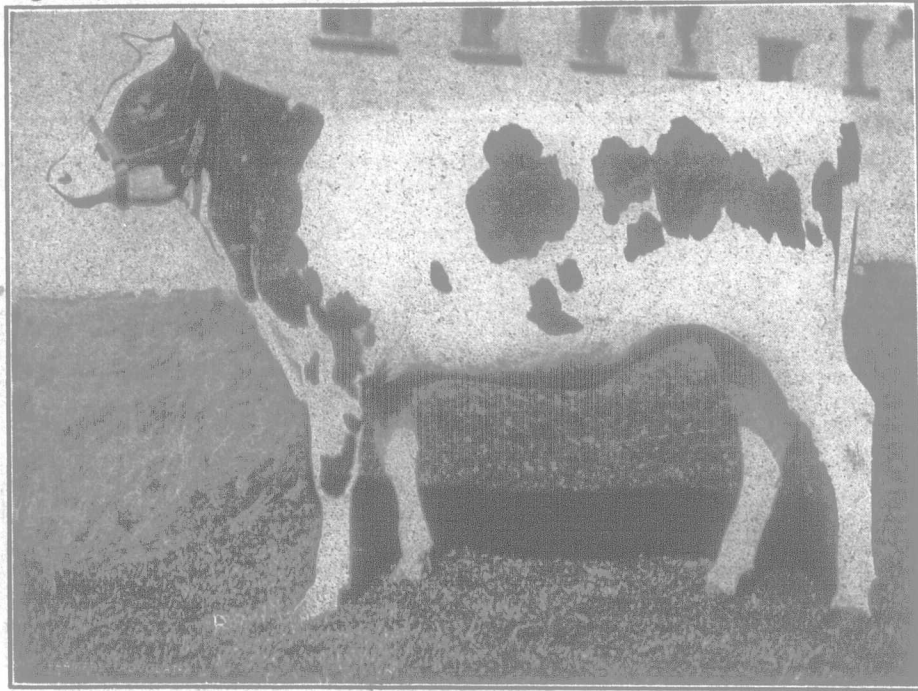
There are several methods by which improvement may be achieved. The betterment of the physical condition of the soil, and the increase of the available plant food will in themselves work wonders. It is generally conceded that each individual variety or strain of corn has a limit of development, beyond which it cannot be forced. Some means must be found therefore, by which the producing qualities can be increased, and this characteristic perpetuated and transmitted from one generation to another with unflinching regularity.

To accomplish this end, work with individual plants must be taken. By study and observation it is possible to discover plants with superior merit. When these are found and the seed is selected and planted on special seed plots, and the corn breeder picks out the progeny of the choicest and most productive ears, year after year, much will be accomplished in the way of perpetuating and standardizing our leading varieties.

Seed corn should be well matured on the stalk. By selecting the earliest-maturing ears and picking them as soon as the husks turn yellow, earliness is secured at the expense of vitality. A slight frost will not injure corn for seed if well matured, and it is the last few days of the growing season that seem to put strength and vitality into the seed. Better to mark the early maturing plant and select the seed when the plants have become fully ripened, when the full strength of the plant has been given to the production of seed.

A great deal of choice seed corn is ruined year after year by improper handling and storing. When the corn is taken from the stalk it contains from 20 to 30 per cent. moisture, and unless this moisture is reduced before freezing weather sets in, the vitality of the seed is greatly injured. The most practical means open to the farmer is kiln or fire drying, and there is no better place than the kitchen, garret or some well ventilated room directly over a heated room or with heat within it. Corn may be suspended from the rafters or placed upon shelves about the room. Corn cured in this manner and kept so that it will not take on moisture from the outside atmosphere before hard freezing weather sets in, shows up exceptionally well when tested for vitality.

Far too much seed corn is stored in large cribs, and often in close bins, which is still worse. If seed must be placed in cribs, the moisture must either have left it naturally or must be expelled before being stored. At all events, cribs for storing seed corn should be narrow and well ventilated, and precautions should be taken to prevent snow or rain from driving into them. The roof should have wide eave projections, and the sides be made with plenty of slope. The sides could be equipped with a curtain which could be down during stormy weather to protect the seed from the drifting storm.



Pauline Colantha Mercena.

First-prize senior Holstein heifer calf at London, and second at Toronto, 1912.

It is very important that seed corn should be tested for vitality before being placed on the market, and before planting, and it would be a move in the right direction on the part of our Seed Branch if the same rigid systematic inspection of seed corn was taken up as is followed in regards to our clover and grass seed.

THE DAIRY.

"Buttermaking begins in the stable, but it does not end until the finished product reaches the table of the consumer." Nothing is truer than this quotation. Good clean, wholesome milk, clean utensils, and absence of foul odors are necessary.

One of the greatest advantages in weighing milk regularly is the opportunity this gives the dairyman to remedy any conditions which are causing a drop in the flow of milk of any individual cow. If the amount given at a milking falls off three or four pounds, such might not be noticed in a heavy milking cow if weighing the milk were not practiced, but the scales always tell the truth, and when the flow deteriorates, the dairyman quickly seeks to ascertain the cause and remedy. Weighing milk is in this way very important in every dairy herd.

"There is no standard temperature for churning, as conditions vary and many things should be taken into consideration. For example, low churning temperatures may be used when we have

such conditions as rich cream, not too much in the churn, succulent food, and cows fresh in the milk." This is the verdict of the staff of the Dairy School, who advise choosing the temperature that will bring the butter in nice, firm granules in from 20 to 30 minutes. A range of temperatures that will cover most farm conditions would be 54 to 58 degrees F. in summer, and 56 to 64 degrees in winter.

Dairy By-products as Feed.

The value of skim-milk for young calves and pigs is much increased by feeding it sweet. The whole-milk creamery should heat all skim-milk to 185 degrees before it leaves the creamery. Sweet skim-milk is probably worth 15 to 20 cents per 100 pounds. It has also about the same value for growing pigs, when sour, if fed along with meal.

Buttermilk has about the same value as sour skim-milk, if it does not contain too much water. When selling buttermilk in bulk at the creamery, a convenient way is to value it at so much per ton of butter. From \$5 to \$8 per ton of butter is a fair price.

Experiments made at the Ontario Agricultural College showed that 100 pounds of whey were equal to 14 pounds of meal in the production of bacon. Both skim-milk and whey had a marked influence in the production of firm bacon. When selling whey in bulk at the factory, it is usually valued at from five to ten dollars per ton of cheese.

The by-products of cheesemaking and buttermaking are valuable factors in adding to the wealth of dairymen by means of feeding bacon hogs and young cattle for beef and the dairy.

All these by-products ought to be pasteurized at the factory before returning them to the farm. When heated to 160 degrees F. for one hour in the whey tank will likely destroy the germs which produce tuberculosis in hogs and other animals. All cheese factories ought to pasteurize the whey. It improves the feeding quality, lessens danger of spreading disease, and reduces danger from bad flavors in milk and cheese, as most of the organisms causing these flavors are killed by heating. The cost of pasteurizing the whey has been estimated at 50 cents to a dollar per ton of cheese. This is the estimate which Dairy School Bulletin 206 of the O. A. C. places on dairy by-products.

Responsibility for Yeasty Cheese.

- 1.—What do you consider is the cause of yeasty (or yeasty) cheese?
- 2.—Is it possible for the maker to detect it in the milk?
- 3.—Or whose fault is it—the patron's or cheese-maker's?
- 4.—Do you think the maker should have to put up the loss when that is the only fault found?

Ans. 1.—It is due to minute organisms which get into the milk in many different ways. Yeasts have been found on the leaves of trees, stable dust, in improperly washed utensils and in the whey tanks. The milk belonging to one or more patrons may become seeded from some source. Rapid growth occurs in milk which is not properly cooled. Numbers of the yeast organisms pass with the whey into the whey tank, where, under ordinary conditions, they multiply very rapidly, are conveyed back to the farm through the medium of the whey, and unless all the cans are sterilized with boiling water the active organisms which are left in the can will seed the next lot of milk. Once the whey becomes infected, the ordinary method of cleaning the whey tank does not eliminate yeasts.

The practical remedy is: (a) Cool the night's milk immediately after milking to a temperature of 65 degrees by placing the cans in a tank of cold water. (b) Pasteurize the whey, heating to 155 degrees, by introducing live steam directly into the whey tank and clean the tank every day.