

ensilage 18 lbs. per day of the coarser portions, but the whole amount fed was charged against the steers.

Group 2, comprising lots 3 and 4, were fed daily 41.6 lbs. ensilage, 11.3 lbs. hay and 12.7 lbs. meal. There was left uneaten of the fodder 13½ lbs. per day, which amount was also charged against the steers.

Group 3, comprising lots 5 and 6, were fed daily 14.3 lbs. hay, 41.6 lbs. roots and 12.7 lbs. meal.

The meal consisted of equal parts by weight of peas, barley and oats, and was always mixed with the other food. The hay (clover and not extra in quality) was cut and mixed with other food, and the roots were pulped and mixed likewise. The food was fed in three feeds daily, and water was virtually given in the stall; everything given except bedding, and water was accurately weighed.

CHARGES FOR FOOD, BEDDING AND LABOR.—The food given, except roots and ensilage, was charged at the average market values in Guelph, viz.: peas 55c., barley 40c., and oats 28c. per bushel, or an average of 34c. per lb. for the mixture; hay \$6.50 per ton, roots 8c. per bushel in the cellar, and ensilage \$2.50 in the silo.

The bedding used was estimated at 15 lbs. per head per day, and charged as worth \$1.50 per ton in the barn.

The labor was estimated on the assumption that one attendant at \$25 per month would feed and care for 40 head as ordinarily fed; that \$2.50 per week would pay for the additional outlay in assisting the said laborer in cutting, grinding and pulping the food, and that the additional help in preparing the food in this contest be charged at half this rate, on the ground that the ensilage was already prepared.

ESTIMATED VALUE OF THE MANURE.—The manure was estimated at 75 lbs. per day per head, and valued at \$1.50 per ton, as the standard value of manure made from ordinary stock is usually put at \$1 per ton in the yard.

INCREASE IN WEIGHT AND DAILY COST FOR FOOD.—The particulars are given in the following table:

Groups.	Weight at commencement.	Weight at close.	Total gain.	Average daily gain of each group.	Average cost of feed per day.
1 {	lbs.	lbs.	lbs.	lbs.	cents.
2 {	1,515	1,762	247	1.85	21.02
	1,327	1,520	193		
2 {	1,469	1,691	222	1.857	20.74
4 {	1,393	1,613	220		
3 {	1,477	1,696	219	1.697	21.40
6 {	1,141	1,526	185		

Aggregate weight of the six steers at commencement of the contest..... 8,522 lbs.
Estimated value at 4¼c. per lb. live weight \$362 18
Aggregate weight at close..... 9,808 lbs.
Estimated value at 5.7-12c. per lb., and equivalent to 5¼c., the selling price when shrunk 15 days hence..... \$547 61
Increase in value in 119 days..... 185 43
Total cost of food..... 150 32
Increase in value over cost of food..... 35 11
Total estimated cost of attendance..... 18 00
Cost of bedding, 10,800 lb..... 8 10
Value of manure, 27 tons..... 40 50
Value of manure over cost of attendance and bedding..... 14 40
Weight May 15th at 8 p.m..... 10,149 lbs.
Weight May 16th at 8 a.m., three steers laying out in yard over night..... 9,763 lbs.
Average loss by shrinkage..... 62 ½

FINANCIAL SUMMARY.—The financial results of the experiment stand thus:

Direct gain on the food fed..... \$35 11
Indirect gain from the value of the manure over the cost of bedding and attendance..... 14 48

Direct and indirect profit..... \$49 51
Or a profit on each animal of... 8 25½

To this may be added in all fairness the profit from raising the food fed, whatever that might be, for this was estimated at market values.

CONCLUSIONS.—The above experiment certainly tends to establish the following important conclusions:

(1) That shipping steers can be fed at a fair profit with prices of grain as at present, when of good types, when they are purchased at reasonable rates and where there are suitable facilities for feeding.

(2) That corn ensilage and meal will fatten as effectively and as cheaply as a ration of roots, hay and meal and with a less expenditure of labor.

(3) That steers fasted twelve hours by simply turning them into a yard at night will shrink from 60 to 70 lb. each.

(4) That with food at present prices, such as that used above, steers weighing from 1,300 to 1,500 lb. can be made to gain on an average 1.801 lb. per day, and at an average cost of 21.053c. per day for the food fed.

(5) That the value of the animals for beefing purposes was increased by the fattening process an average of 1½ cents per pound from commencement to finish.

From Hoar's Dairyman.

Grading up with Ayrshires.

ED. HOARD'S DAIRYMAN.—As an illustration of the advantage of grading up our stock, in the year 1871 I had a dairy of native cows, that gave me an average of 4,000 pounds of milk per year. I then made a purchase of two pure-bred Ayrshire heifers and an Ayrshire bull—raising all of my thoroughbred and grade heifers. As soon as these crowded out the natives, the yield from my herd of fifty cows (thirty per cent. of which were two and three years of age) exceeded 6,000 pounds per cow per year, with same kind of fare, viz., pasture in summer, with hay, straw, and a moderate allowance (four or five pounds) of grain per day in the winter.

Truly yours,

Black Creek, N.Y.

L. D. STOWELL.

New Herd Law.

EDITOR CANADIAN LIVE STOCK AND FARM JOURNAL:

I agree with those who ask that all who keep stock should keep them at home, or be responsible for them if allowed to roam at large.

It would save a great deal of trouble and annoyance and perhaps some ill-feeling amongst neighbours. Yet this would not do away with the necessity of road fences. Anyone driving a bunch of say six steers to market, just out of the stable, would find it simply impossible to keep them on the road without a fence on each side. After they had been driven a few miles, they would no doubt become more manageable, but at the start they would destroy sufficient to detract somewhat from their price.

Every well-ordered farm has some system of crop rotation, and if nothing but the pasture field was fenced, it would necessitate the removal of the fence almost annually, which would be considerable extra work every year.

But to fence the pasture field only would also be impossible, as not one farm in a hundred would have a supply of water in every field. Indeed, in the great majority of farms the water supply is to be had only at one point, to which stock must have access from all parts of the farm, and therefore there must be a fenced road from every field to that particular point. And besides, it is advisable to allow stock to roam over stubble after harvest to pick what may be left and to eat the after grass in the meadows, and to do so it is necessary the farm should be fenced. I know the fences take up a lot of room, and accumulate a lot of dirt and weeds, and I know too that hundreds of farms are too much fenced, yet I can't see how we are going to do away with boundary fences. But I would say have as few inside fences as possible have all cross fences moveable, so that they could be taken from where they are not needed to where they are. And if some one would invent a cheap, easily constructed, easily removed, portable fence, it would be a boon to the farmers of Ontario.

Bunessan, Ont.

GEORGE BINNIE.

Contest between the Beefing Breeds at the Ontario Experimental Farm.

EDITOR CANADIAN LIVE STOCK AND FARM JOURNAL:

SIR,—A contest is now being carried on at this institution, the results of which should prove of much interest, and it is hoped also of much value, to the farmers of this Dominion. Grade

calves have been selected where they could be obtained of the various beefing breeds and also of those that are said to be good for both beef and dairy purposes with a view of ascertaining the cost of keeping them, both relatively and individually, until they are measurably matured.

Representatives have been obtained for the contest of the Shorthorn, Hereford, Aberdeen, Angus, Galloways, Devon, Holstein, and "scrub," or native crosses. They are all from pedigree sires except the scrub. This last was selected in Quebec Province, and possesses none of the blood of the improved breeds.

They are all being fed from the pail on new milk for a time. Other food is added as soon as required. It is the intention to have them fed all the food they need for quick and early development and to sell them when about two and a half years old. They are not allowed to go out at all except for exercise in a yard.

The food is all carefully weighed for each animal, and they are also weighed singly every month. Exact records being kept in each instance.

Many important lessons should be learned from this experiment. The comparative gains per month will make known the relative maturing capacity, and also that period when the largest returns are obtained from the food fed. It should also determine whether it will pay at all to raise beef under these conditions, and more particularly whether it will pay to feed calves intended ultimately for the block on a liberal ration of new milk.

The value of the experiment will also be increased by the fact that one animal additional is being reared under conditions precisely similar except that it is being fed skim-milk instead of whole milk. For many years it has been stoutly affirmed by the advocates of the different breeds in the contest that one or another was the most profitable for beef-making. Representatives of most of them have been shown time and again at leading exhibitions with varying success. So far as their relative merits are concerned, therefore, we know about as much as we did when they were first introduced. Hence it cannot be unimportant to determine which of these breeds is best adapted to stall-feeding purposes if this can be determined, and I think it can. It cannot be determined, however, by a single experiment, nor perhaps by a second or a third, though conducted on precisely the same line, owing to the marked differences which individuality and inherited qualities generally have upon the progress of an animal. Because of these things it is intended that the experiment shall be repeated over and over again, until much that is conclusive and reliable is obtained from it for the guidance of the farmers of this Dominion.

There is one point, however, wherein the experiment is liable to be assailed by hostile criticism. It is perhaps at present its weakest point. If some animals in the contest leave others behind a result which is inevitable, it may be alleged that the specimens chosen are not equally representative, that is, that some were more highly bred and better also individually on the start. We are naturally anxious to strengthen that point, and with this object in view, I now appeal to the associations representing the different breeds to select animals from year to year for this contest. Where a breed is not represented by an association in the Dominion I hope those who are interested in the advancement of their favorites will select the animals for us. The conditions of selection are:

1. The animal chosen must be the offspring of a pure-bred sire.
2. It may possess any amount of pure blood short of rendering it eligible for registration.
3. It should reach this station during the months of October, November, and December, and within a few days of birth.
4. Exact particulars must be given so far as known in regard to lineage.

Many farmers in this country have alleged that scrub or native stocks are equally good with those pure bred. They say that the difference is mainly one of feeding. An opportunity is now given them of verifying the correctness of their assumptions, which I have no doubt many of them hold honestly. I trust, therefore, that those who have strong faith in the merits of the scrub will select a good representative of the breed from year to year to enter this contest. The first and second conditions mentioned above do not apply in this case, but instead it is required that there shall be no admixture of improved blood.

I ask that this appeal shall receive careful consideration from those directly interested. They have it easily within their power to select such animals as are exactly suitable. We cannot always do this without much sacrifice of time and large and unnecessary outlay. If those to whom I now appeal fail to make the selection asked for, they will surely consider it their duty to keep silent in regard to the suitability of those which of necessity we will then have to select ourselves.

Yours, etc.,

THOMAS SHAW,

Ontario Experimental Farm, Guelph, 17th June, 1890.