

STOCK.

CATTLE FEEDING.

We published some time since extracts from the report of Prof. Brown in connection with the experiment of cattle feeding at the Agricultural Farm at Ouelph. This week we give an extract from a somewhat similar report of Prof. Roberts, of the Cornell University Experimental Station, as published in the *Rural Home*.

ENSILAGE FOR YOUNG CATTLE AND BEEF COWS.

Three two-year old, half-blood Holstein heifers were selected, which had previously been fed on hay exclusively.

First period.—The ration consisted of ensilage, 50 lbs., and malt sprouts, 0.5 lbs., per day and animal.

All weights were taken at 8 o'clock a. m., after feeding but before watering.

When weighed.	No. 14.	No. 16.	No. 17.	Total.
Feb'y, 24,	770	750	780	2300
March 3,	839	850	831	2510
... 10,	830	850	850	2530
... 17,	810	900	820	2530
... 24,	824	882	821	2527

The total gain during the twenty-eight days was 230 lbs., or 2.73 lbs. per day and animal. The apparent gain of 216 lbs. during the first week was largely due, without doubt, to an increase in the contents of the stomach.

If the weight of March 3rd is taken, the total gain in the following three weeks is but 14 lbs., or 0.22 lb. per day and animal. It is evident that this was about as near a maintenance ration as it is possible to get, for while one animal gained 32 lbs., the others lost 8 and 10 lbs., respectively.

Second period.—On March 25th 2 lbs. of cotton seed meal was added to the daily ration of each animal. On April 14th their total weight was 2672 lbs.; a gain in the three weeks of 140 lbs., or 2.24 lbs. per day and animal.

This experiment indicates that southern corn ensilage forms a maintenance ration when fed in suitable quantities, and that it is economy to feed it in conjunction with some more concentrated food. During the first as well as the second period, the animals appeared to be making rapid growth, yet the scales showed that the weight of two of them decreased.

For several months after being turned out to pasture the ensilage-fed animals appeared far thriftier than others of like age and size which had been wintered on hay.

Beef Cows.—The cows had been "dry off" about three weeks previous to the first washing; two were natives and one, No. 10, was a half-blood Holstein; all had been milked for about ten months and were thin in flesh. They were offered for sale at three cents per pound, or \$99; but owing to the high price of feed no purchaser was found. From Feb. 21st to April 5th, their ration consisted of ensilage 52 lbs., and corn meal 12.5 lbs.; from April 5th until sold, ensilage 50 lbs., corn meal 9.4 lbs., and cotton seed meal 2.8 lbs.; or in volume-measure in the last case, 6 quarts of corn meal and 2 quarts of cotton seed meal.

When weighed.	No. 10.	No. 1.	No. 2.	N.
Feb'y 21, 18c.	1150	1060	908	
" 28,	1200	1126	1024	
March 7,	1226	1115	1097	
" 14,	1242	1147	1169	
" 21,	1242	1182	1070	
April 5,	1320	1183		
" 12,	1320	1192		
" 20,	1320	1150		

They all sold at \$.09½ per pound, dressed weight. The average gain per animal was 2.84 lbs. per day.

GAIN IN WEIGHT BY STEERS ON A MODERATE FATTENING RATION, AND ON GRASS.

Three steers, purchased March 4th, were weighed daily at first, beginning March 13th, after they had become accustomed to their new surroundings, and afterwards every other day for two months, while fed on the following rations: March 13th to 10th, ensilage, 30 lbs., cut corn stalks, 4 lbs., malt sprouts, 5 lbs., and corn meal, 3 lbs. March 10th to 24th, the same, except that 2.5 lbs. of bran were substituted for 2.5 lbs. of malt sprouts. From March 23rd on, 1 lb. of cotton seed meal was added to the ration. From March 27th, 1 lb. of corn meal was replaced by 1 lb. of cotton seed meal. All weights were taken after eating and before drinking. The weights are given in detail to show the frequent, wide variations from day to day.

March.	lbs.	lbs.	lbs.
13	694	650	620
14	678	638	638
15	681	629	631
16	687	637	644
17	679	630	643
18	725	664	650
19	700	662	663
20	720	662	661
21	721	664	661
22	739	680	680
23	715	680	678
24	730	681	670
25	730	685	680
26	740	701	678
27	750	690	678
28	742	702	679
29	744	701	680
30	744	701	680
31	744	701	680

April.	lbs.	lbs.	lbs.
1	744	701	690
2	741	699	690
3	762	715	704
4	789	733	720
5	780	737	738
6	750	716	728
7	780	717	740
8	800	719	730
9	800	730	730
10	796	720	730
11	804	732	765
12	801	750	759
13	822	750	776
14	826	766	781
15	815	770	780
16	825	764	794
May 1,			
Gain in 49 days	131	114	174

The gain in live weight per steer and day was 2.85 lbs., or 1,000 lbs. live weight at the beginning of 4.37 lbs.

The weight of the animals on July 3rd, after having been in pasture and on grass alone for 63 days were as follows: No. 1, 1,038 lbs.; No. 2, 962 lbs.; No. 3, 940 lbs. The total gain in 63 days was, therefore, 557 lbs. or per steer and day, 2.74 lbs., or per 1,000 lbs. live weight, 4.5 lbs.

Agriculture.

MIXING SOILS TO PRODUCE FERTILITY.

The most productive kind of soils are a natural mixture of sand and clay, and known as loams. The nearer poorer soils can be made to resemble loams the better they will be. There are many ways of improving inferior soils and one is rendering them fertile by a proper admixture.

A soil, for instance, with too large a per cent of clay in its composition will be improved by an application of sand or sandy loam. Calcareous, sandy and peaty soils will respond favorably to the addition of clay. Calcareous earth may be added to clays, sands and peats with the certainty of benefits.

The benefits arising from an admixture of soils are twofold—the mechanical texture is improved and the chemical composition of the soil is altered.

While there is no doubt but that soils possessing defects in their physical and chemical properties may be rendered productive by a proper admixture it does not of necessity follow that it will always pay to resort to this method. For instance, a piece

of very stiff land might require so large a per cent of sand to be added in order to make it as loose and friable in texture as is desirable that the operation will involve more labor and expense than is within ordinary farm practice. In such a case as the above it is advised to ascertain the nature of the subsoil, through which the surface soil may often be readily improved. For example, if a sandy soil rests immediately upon a substratum of clay, which is near the surface, the clay may be turned up and mingled with the surface soil to advantage. Or where the clay is uppermost great good may sometimes be done by deepening it and mixing it with the sandy layer below. Where the soil or subsoil are similar in character and this plan cannot be resorted to, if there is soil possessing opposite properties sufficiently near at hand so that it can be applied at reasonable cost, then admixture becomes the proper process.

There are situations, however, where neither of the advantages named exist, the whole farm being of a uniformly sandy or clayey soil. In such a situation various expedients are resorted to. Heavy rolling and sheep folding are practiced with favorable results on light soils. Strong, stiff lands are greatly improved by turning under of green crops and by applications of lime.—*N. Y. World.*

CORN RAISING.

J. Camp in the *Chicago Review* gives his method of raising corn. He says: I find, if it is possible, the best plan to break my ground deep in the fall or winter, and then in this latitude about the 20th of April or between that and 10th of May, I stir the soil again. But if I don't plow as above stated, the next best chance is to plow up a clover field about as early as I would stir up the former field, then in either case, I drag or harrow thoroughly; this I am very particular about, and always have my soil well pulverized. Then if I drill, which is the case as a rule, I start a man with a single-shovel plow and mark off the ground about three and a half or four feet apart, and immediately I start the drill that is set to plant about one grain to every foot, letting the drill horse walk in the furrow that is made by the first man and plow. This puts the corn not only in a more direct line but in a very loose and fresh soil, and in this way two of us will put in from eight to ten acres per day. And right after the drill the same day, I also put a team and harrow to follow; this levels the ground and puts it in excellent condition. Then as soon as the corn begins to come through the ground, I put my harrow on it again and go over it about twice, and by this time it is large enough to start the plow, which is not the old fashioned diamond or mold-board plow, but a double-shovel or sulky cultivator, and no matter how much corn I have in I make it a point to go through it about four or five times, just as quick as I can, or at least every week, so as to keep the ground thoroughly stirred, as well as all the weeds down, if any should make their appearance. This brings me to the first or middle of June, and my corn, if it has been only an ordinary season, is near waist high, when I drive out of the field and leave the God of nature to do the maturing. Now, of course this kind of farming could not, or probably would not, be done by parties who plant five hundred or a thousand acres; besides, they would not likely have the clover sod.

Agriculture followed as a business with a reasonable regard to business principles, can be made a business success, but without these it will be a miserable failure. The primary end of life is, or should be, happiness, comfort, bodily health, mental improve-

ment and growth. Brain is the great mature power of this age, muscle is the instrument. A wise man once wrote, "The wisdom of a learned man cometh with opportunity of leisure." Farmers require to spend more time in study and thought if they expect to compete with the vigorous minds of this age. We want in agriculture a new declaration of principles, disfeeling all prejudices and notions, letting brain power direct muscles, using head work and less eighteen hour to the day toil.

The best time for cutting grass intended for fodder is doubtless the time of flowering. The saccharine juices that go to develop the seed are then in the stalk and leaves, and the grass mown in this stage is necessarily succulent and palatable. Whether it is cut high or low depends on the nature of the ground. As a rule, timothy should not be cut lower than three inches; if shaved close it is likely to be burnt up, and the roots destroyed by exposure to the sun.

The following from the *London Free Press* is of interest to the many readers of the *FARMER*. The cane sugar industry is becoming one of some importance in Canada, and deserves considerable attention.

Wright's new cane sugar factory near Essex Centre is finished, and the machinery, consisting of two engines, boilers, rollers, sugar boilers, frame coils, etc., are now being placed in position. Mr. Wright expects to begin operations about October 1. He is raising this year himself 30 acres of cane. Several farmers in the vicinity have also more or less, and but for the wet season much more would have been raised. It is claimed that from 25 to 30 tons of cane, worth \$3 per ton, can be raised on one acre, and the indications are that the new industry will prove remunerative to farmers.

Horticulture.

A JAUNT TO SEE SOME BERRIES.

Written for the *CANADIAN FARMER* by T. C. ROBINSON, Owen Sound.

(Concluded from last week.)

Were ever these boots so tight before—and there through the gathering darkness flashes the lightning of a coming storm. The Fourth of July too, and behind us the fire-works flare up from the city, as the average American boy convinces the average American man that their national holiday is a grand institution—for the corner toy shop! Here are some pleasure-seekers home returning tired. "How far is it to Chili Station?" "You're on the wrong road," is the sweet response. "Turn off the track at this road, and travel to where the road stops, turn to your left then and travel to where that road stops, and turn—turn—turn!" There is no help for it; so we walk and turn, and turn and walk, and still no end to the tramp, and no tavern by the road-side, and no let up on the sore feet; and the lights go out one by one in the farm houses in the face of a growing consuming disgust that stronger than the darkness glares upon the stupidity that got us into such a muddle. Well, we knew before that strawberry men are not proof-free from stupidity; so, after stirring up a sleeping farmer that tempts us with a light gleaming at his bedside, we get doubtful permission to rest in a barn; and there we sleep the sleep of the just, and dream of James Vicks sailing in cream on Lake Ontario. But we get a better rest after all among the sweet, cool straw than the farmer sweltering on his cosy pillow this hot night. And our twenty