though weighed. The average amount of silage eaten was 50 lbs. per head. As in the previous experiments, the silage bullocks drank twice as much water as the root-fed ones.

The bullocks did well from the beginning to the end of the trials, and the final result was, as follows:

	lbs.oz.
Daily gains per head with silage during 113 days.....	2 1
Daily gains per head with roots and hay-chaff 113 days.	2 5
Daily gain in favour of roots and hay-chaff 4 oz. per head.	

Thus, we see that bullocks fed on sour silage made from grass of good quality will fatten well, though not so well as roots and hay-chaff.

Second experiment.—Sweet silage vs. roots and hay-chaff. The silo No. 1 was used: sweet silage from grass cut from the same meadow as No. 4. Heated up to 135° F. in three days; on July 16th, when weighted, temperature equalled 154° F.; when opened, December 18th, the silage was very hot (130° F.) and steaming. Near the bottom, the material was quite dry, and very like hay in appearance. The smell was sweet, quite distinct from the smell of the sour silage, and the proof of *sweet* silage having been made is that out of six samples analysed, four contained no acetic acid at all, and the other two the least trace—0.3 per cent. But against this we must oppose the fact that the sweet silage kept badly and soon became mouldy, so that much of it was wasted. The loss by evaporation, fermentation, &c., was 12.66 per cent, against 5.5 in the case of the sour silage = 130 per cent. more, which is a difference worth remarking.

Two bullocks were fed on sweet silage, cake and corn, and two others on roots, hay-chaff and cake and corn, as below:

RECEIVING SILAGE.	lbs.	RECEIVING ROOTS AND HAY.	lbs.
Decorticated cotton-cake.....	3	Decorticated cotton-cake..	3
Maize-meal	5	Maize-meal	5
Sweet silage—average.....	42½	Swedes—average	45
Water	53½	Hay-chaff	10
		Water	22½

Observe that the sweet silage bullocks drank 120 per cent more water than the swede bullocks.

Gain, per day, per head, sweet silage... 1 lb. 7 oz
Gain, per day, per head, swedes and hay chaff..... 1 lb. 12½ oz. 5½ oz.

So, there was a gain, as in the case of sour silage, in favour of roots and hay-chaff; and, it would appear from the two series that there is not much to choose between sweet and sour silage, but considering the convenience of filling the silo at once, as can be done with the sour silage, and the large loss by evaporation, fermentation, &c.—which loss cannot be all water, as some would try to persuade us—I confess I am led to prefer the quick method of filling. For, if it takes from August 27th to October 4th to fill a silo with sweet silage, (1) or anything like that time, unless the ensilage crops are sown in succession, it seems probable that either the first fillings must be too green or the last fillings too ripe, to say nothing of the continual botheration of interrupting the routine of farm-work to take off a team of horses from grubber, harrows, or plough, to carry two or three loads of fodder-corn from field to silo.

Oat-silage.—The third experiment—18 tons, 13 cwts. of oats, cut green, chaffed, and weighted at once with 6 tons of stones in boxes, resting or boards—on oats vs. roots and hay-chaff, began on December 18th 1885, the silo having been filled in July 1884. A very considerable amount of waste by the *boarded* doorway, extending 18 inches inwards; 6 inches from surface sodden, and by the sides 2 to 3 inches; the rest very good, with a pleasant aromatic smell, and, even when freely exposed to the air keeping sweet for a long time. In July '86 there was a lot of it left, still perfectly free from mould, which had been exposed since April. The silage was decidedly acid.

Loss by fermentation, evaporation, &c., 15.05 per cent.; on the whole of the 18 tons, 13 cwts., 2 tons, 14 cwts., 2 qrs, 15 lbs., had disappeared.

Oat-silage bullocks	lbs.	Roots and straw-chaff bullocks.	lbs.
Silage	52	Roots.....	45
Decorticated cotton-cake.....	3	Decorticated cotton-cake ..	3
Maize-meal	5	Maize-meal.....	5
Water	28½	Straw-chaff...	9½
		Water	13½

Gain per head, daily, oat silage..... 2 lbs.
Gain per head, daily, roots and straw-chaff. 1⅓ "

This seems to have been the most satisfactory series of experiments: two changes of form having been carried on, and all tending to show the high feeding properties of oat-silage; at the same time, it has yet to be shown whether ensiling oats in an unripe state is more profitable than harvesting them in the usual way.

Useful as these inquiries are, we have not yet got what I should like to see: a thorough comparison between the product of an acre of corn cut when ripe, the grain extracted, and the fodder chaffed, and the same quantity of corn cut in the usual state in which fodder corn is given to cattle, ensiled, and fed out in the ordinary way. Ensiling *ripe* corn can hardly be an economical way of treating it.

Lastly, the question is solved which has, to my mind, always been an important one. Does sound hearty food, like swede turnips, produce a greater or less proportion of dead-weight per carcase when compared with, what I must be allowed to call a *washy* food, ensilage: As for example, the following table of live and dead-weights of 8 of the bullocks under the experiments we have been considering. The dead-weights were taken in the market by an official appointed for the purpose, and represent the weights of saleable meat after the removal of the offal.

Bullocks.	Food.	Live-weight.	Official dead-weight	
		lbs.	lbs	
1	Silage	1351	743	Total of silo fed
2	"	1379	781	Dead-weight.
3	"	1553	806	Live-weight.
4	"	1398	764	5681 vs 3176
5	Roots and hay	1408	849	Total of root-fed.
6	"	1261	768	Dead-weight.
7	"	1543	880	Live-weight.
8	"	1463	841	5670—3338

Thus, the difference of dead- to live-weight is 164 lbs. in favour of the roots and hay chaff bullocks, equal, at present prices in England, to about 25 shillings a head, which sum would pay for at least 25 day's keep out of the 114 days they were fattening.

In my feeding experience, bullocks drank nothing at all, as the water contained in the bushel of roots, together with the water imbibed by the two pounds of linseed, the six pounds of meal, and the bushel of chaff, seemed to completely satisfy

(1) See Journal for March, 1887, p. 46.