

Cooked or steamed food is evidently unpopular in England, except in the case of town-supplying dairies. One of the main reasons brought forward by the advocates of cooked food is that the process increases the digestibility of the substance treated. This, I believe to be an erroneous idea. It was shown long ago, in the case of the soldier who fortunately—fortunately for science, I mean—was wounded in such a delightfully convenient manner that the whole process of digestion could be observed through an aperture in his chest, that boiled cabbage took $2\frac{1}{2}$ hours longer to digest than uncooked cabbage. And of late years, such practical chemists as Hellriegel and Lucanus have shown that rye-straw was not increased in digestibility by fermenting or by cooking it. Experiments by Funke gave the same results regarding the digestibility of the total dry matter and the cellulose of a mixed ration, given to milch-cows.

Another set of experiments, at Poppelsdorf, showed that the digestibility of hay was actually decreased by steaming. Coarse hay, given to oxen, first dry, then steamed, showed a reduced digestibility of all the constituents, but especially of the nitrogenous or protein compounds, which were reduced from 46% to 30%. Boiled bran was proved to be less digestible than uncooked bran. The deduction to be made is: the digestibility of concentrated fodder is not increased by cooking, and it is clear from what has gone before, that the general opinion of our best English farmers is not favourable to cooking food for animals where hardness is desired; several of the correspondents giving a very decided opinion that animals that have been fed on cooked or steamed food do badly when turned out to grass in the spring.

I may as well mention, before I take my leave of this part of my subject, that the men whose opinions I have quoted above are all regular tenant farmers who, with the exception of Professor Sheldon, live entirely by farming.

And, now, having briefly considered the various modes in which straw is utilised in England for cattle-food, let us see how we, in a country far more difficult to supply with winter nutriment, can prepare this food so as to be more valuable for the production of milk than it is in its crude state.

Many of us grow pease, and all of us ought to grow flax, unless our farms consist of land too heavy for it culture. Indian corn, too, is produced on most of our farms. Here, we have three most valuable grains, capable of highly useful and, at the same time, economical application to our winter-dairy. For, I suppose, few farmers who are desirous of improving their methods of management will in future dry off their cows, as a rule, in November, as has been too much the practice heretofore. Scarce as good butter is at all times of the year, it is very scarce indeed in winter, and a few cows well kept would at that season add no trifling amount to the farmer's income.

For the preparation of the food, let us take, first, the case of the farm on which there is neither silage nor root crop, and no great means of purchasing extraneous food. Something must be added to the straw, that is positive: let us take linseed, and proceed as follows:

Cut the straw into inch-lengths—cattle masticate long chaff better than short—spread it on a stone-floor, or on a tight wooden floor if the other is not convenient. Steep 7 lbs. of linseed in as much hot water as you can manage to prepare, and pour it over the straw, turning the stuff over and over till thoroughly mixed; leave it to soak for ten or twelve hours, and then give it to your cows. Simple enough, but very effective, I assure you. Seven pounds of linseed will be of more use than you would believe to 10 cows. The moisture will soften the straw, the linseed will flavour it, and the two together will induce your animals to eat up their food with appetite and without waste. In a fortnight after beginning this

made of feeding the difference in the appearance of your cows will astonish you. There is nothing like linseed for giving a satin skin to cow or horse.

But this first mode of preparing food is but a makeshift and very imperfect. The cows will not by any means digest the whole of the linseed if used uncrushed. Bite a grain of it and see how it slips from between the teeth. In England, we have small (large ones too) crushers that crack linseed at a great rate, but here we must be content with the mill-stones, and as the oil exuding from the seed clogs the stones we must mix some grain or pulse—or, which is better, both grain and pulse—with the linseed. You make take either

No. 2—1 bushel of linseed;	} 4 bushels.
2 " " oats;	
1 " " pease;	

or

No. 3—1 bushel of linseed;	} $4\frac{1}{2}$ bushels.
2 " " oats;	
$1\frac{1}{2}$ " " corn.	

Of the two, I prefer the former, though the pure theorist would say that the *albuminoids* were very much in excess. So they are, but they are very much in defect in the straw, and therefore it is all right. One advantage of these mixtures is, that as the linseed is cracked, cold water may be used in place of hot, as more handy.

Of these meals, 3 lbs. or 4 lbs. per head stirred up in lots of water and intimately mixed with straw-chaff will be sufficient. The process is the same as the one previously described.

Where ensilage is made, I should trust to the moisture of that conserve to moisten the straw, still allowing the mixture to lie for some hours in a well raised heap. Of course meal of some sort must be given separately to the cows: I would not mix it with the ensilage. (1) Of the two, I should use the pease-mixture with ensilage.

Where roots are grown for milch-cows, and batter made from the milk, it is a matter of great importance to obviate the slightest risk of the taste of the roots affecting the product. To this end, give the roots either during milking or immediately after—digestion will in most cases carry off the flavour—. Either of the mixtures Nos. 2, 3, may be used with roots.

Of straw, prepared in either of the above ways, a fair-sized cow—say 1,000 lbs.—will consume about $3\frac{1}{2}$ bushels. Any quantity may be out at a time, provided it is tramped down tightly in a close bin and kept covered from dust and damp.

As for the cost of these mixtures, it is rather difficult to fix a price upon them, as all the ingredients are supposed to be produced on your own farms. But (No. 1) taking linseed at $1\frac{1}{2}$ cent a pound, and allowing a cow to be 200 days at stall-feeding, she would consume 150 lbs. during the winter months, costing, nearly, \$1.90.

No. 2 would cost an additional sum of \$6.00, and No. 3 about the same, or altogether for full feed of $3\frac{1}{2}$ lbs. of linseed, oats, and pease or corn—\$7.90, for the winter season: only $3\frac{1}{2}$ cents a day—not a very expensive food.

Those of you who live near the great centres can, I am told, buy cotton-seed meal for \$23.00 a ton of 2,000 lbs.; about a cent and a tenth per lb. This, diluted with plenty of water, and scattered over the chaff, as before, must be a cheap food. When I was farming, it was not to be had at less than \$30.00 a ton, and freight from Montreal, cartage,

(1) I do not mean that the meal should be given alone, but mixed with straw-chop, wet or dry.