

mistake were he filling a silo in a hurry. And besides this, it is well known that unless care is taken to have the material in the silo properly packed all around the edges, there will be a deep border of half spoiled ensilage next the walls. Cattle will eat this readily enough, but it is easy to understand that it could not be fed to milch cows with impunity. But though a few gallons of milk may have been spoiled by such mishaps as these, it does not follow that the practice of feeding ensilage to dairy cows should meet with such wholesale condemnation. Everybody knows what an absolutely intolerable taste will be imparted to the milk or butter of a cow that has by chance come upon a bed of leeks in her pasture, and yet no one argues from this that dairy cows should never be turned out on grass. Turnips do not in part an agreeable flavor to milk, but no one thinks of prohibiting the feeding of roots of all sorts to cattle merely for that reason.

Mr. George Barham, managing director of the Dairy Supply Company, sends to the *Live Stock Journal* the following telling reply to Mr. Haddon's letter:—

"Milk from cows fed upon several different kinds of ensilage has been supplied to this company during the last two winters, and neither our people nor our customers have found any fault, but, on the contrary, have specially asked to be supplied with it because of its superior quality. One large farmer in Warwickshire (who did not make a load of hay last summer, but, profiting by previous experience, put the whole of his grass and seeds into the silo) contracts to supply this company with 1,000 quarts of milk daily; and upon looking through our dairy report book I cannot find a single complaint all the winter, while, during last month alone, there were over thirty complaints of the objectionable taste of milk the produce of cows fed upon roots, cake, &c. I can understand that milk, if allowed to stand near a silo, or near a quantity of ensilage, would quickly take up the unpleasant odor; but this not the fault of the ensilage, but of the management, for milk, as soon as drawn from the cows, should be taken immediately to the refrigerator or the dairy, and these should be so situated as to be free from that and every other odor. Ensiled cabbage, comfrey, swede tops, and similar substances must not be given to dairy stock; neither should good materials if they have been spoilt in the silo, as they sometimes are in the stack. With these exceptions, ensilage may be freely used. When a brand of condensed milk has obtained a good reputation, I can well understand that a great injury would be inflicted upon the proprietors by a few 'brewings' of milk with an objectionable odor. In his anxiety to avoid this, it is probably a wise precaution of the manager of a condensed milk factory to veto milk which is the produce of ensilage until experience has proved—as I am sure it will do—that it may be relied upon for that as well as other purposes."

Mr. J. M. Fletcher writes on the subject as follows:—

"I have before me a letter received this morning from a friend near Melton Mowbray, in which he states that he has five cows living entirely on silage, and that they continue to do so well that he is loth to alter their diet; they give better milk and are making more flesh than they did with roots and hay. I will send a sample of their milk to be analysed and forward results to the papers. The silage consists of the second crop of clover, just coming into flower and put into the silo rather wet. These five cows eat 68 lbs. of silage a day on an average, and it weighs 50 lbs. to the cubic foot. I have some turnip-tops silage that weighs 64 lbs. to the cubic foot."

Mr. Edward F. Blunt, Blaby Hill, Leicester, writes:—

"I am keeping some of my cows entirely upon ensilage, and some on hay and roots. Each system produces about the same quantity of milk, but the ensilage-fed cows are decidedly in better condition, whilst their milk yields 4 or 5 per cent. more cream, and is as sweet and good as that from cows fed on grass in the summer. I do not advocate keeping cows altogether upon ensilage, as it will be found that an addition of cake or meal will increase the quantity of milk, and will improve the condition of the cows in the same degree as these foods do when given with hay and roots; but, to my surprise, I find that the percentage of cream from the milk of the ensilage-fed cows is higher than from the milk of cows fed upon hay, roots, flour, and cake. The following figures give the relative cost of those fed on hay and roots, and those fed on ensilage:—

"Five acres of an average crop of clover will produce forty tons of ensilage, or ten tons of hay. The cost of making it into hay, stacking, and thatching, will be 15s. per acre. Therefore, if the value of the hay is £4, the value of the crop for this purpose is £36 5s. I find the cost of making ensilage to be 4s. 6d. per ton, including a fair charge for use and depreciation of silo and press, therefore add £9 to the £36 5s., and you have £45 5s. as the value of the forty tons of ensilage; comparing it with hay at £4 per ton.

"Five cows fed entirely upon ensilage will consume 340 lbs. per day, or 1 ton 1 cwt. 1 qr. per week, equal to 39 tons 6 cwt. 1 qr. (say 40 tons) for 37 weeks, the cost of which, ascertained as above, is £45 5s.; each cow will therefore cost rather less than 5s. per week.

"The same number of cows, fed upon hay and roots, will consume 400 lbs. of roots and 80 lbs. of hay per day, or for 37 weeks 46 tons 5 cwt. of roots and 9 tons 5 cwt. of hay. The roots at 15s. per ton will amount to £34 13s. 9d., and the hay at £4 per ton to £37; total cost £71 13s. 9d., or 7s. 9d. per cow per week.

"For five cows for 37 weeks we have therefore a balance in favor of ensilage of £25 8s. 9d., or of 2s. 9d. per cow per week.

"With such facts as these before us, and also when we take into consideration that two crops for ensilage may be obtained in one year, that in making it we are quite independent of the weather, and that many crops may be grown on land now growing corn at a ruinous loss which will give a much greater return per acre of ensilage than clover, I think we may look for still better results than the above, and may confidently rely upon our arable land thus becoming a source of profit instead of loss to us.

"I requested Dr. Emmerson, the Public Analyst for the counties of Leicester, Northampton, and Rutland, to analyse the milk of those cows

which I had fed entirely upon ensilage for several weeks.

"The following is his report:—'The sample is of specific gravity 1.034, and consists of the following percentages:—Total solids, 13.120; fat, 3.300; solids not fat, 9.820; ash, .83; water, 86.880. These results represent a milk of first-rate quality; and prove that the food was nutritious, and that the cows had been in good health, so as to enable the mammary glands to secrete a milk so rich in albumen, fat, &c. The microscopic examination showed the usual abundant small oil globules, and absence of pus cells or any foreign matter.'

"In a letter accompanying his report, Dr. Emmerson says:—'The only possible objection to silos can be when they are imperfectly constructed, so as to allow more air to reach the enclosed vegetable matter than admits of oxygenation beyond a certain amount, and decomposition begins; then, of course, the food would be unwholesome.'"

ACKNOWLEDGEMENT. We are indebted to the *English Live Stock Journal* for the subject of our illustration this week.

MAKING GILT-EDGED BUTTER.

"Orestes Pierce," of Baldwin, Maine, thus describes the process of making and shipping butter which, he says, nets forty-eight cents per pound the year around:—

"Our cows are thoroughbred Jerseys, selected solely as individually large performers, without regard to color or form, except such points as one finds to be in common with large butter-yielders. We seek the most butter in a year—nothing else. Our barn is as warm, comfortable, and clean as it can be made; the food, after much experimenting, has become clover hay, sound corn-meal, and wheat middlings; the ration per day is 12 lbs. of hay, 8 lbs. of middlings, and 4 lbs. of corn-meal; water, with the chill taken off, *ad libitum*. This ration gives us the largest yield of butter at smallest cost. We use sawdust and ground plaster for bedding, which keeps the cows and tie-up clean and sweet, and does not soil the udders or stick to them.

"Milking is done twice each day, the twenty-four hours being divided as nearly as possible into equal periods. Each milker is required to milk rapidly in silence; to strip his cows dry, and to use no violence or harshness. The milk is strained into large cans, which at the close of the milking are taken to the dairy; there the milk is again strained into deep setting cans and set in running spring water at an average temperature of 48 deg.; it is skimmed in thirty-six hours, and the cream placed to ripen in a warm place; it is stirred twice a day and its condition judged by eye and taste; when ripe it should be slightly sour, thickened, and not sticky when lightly touched with the finger.

"Ripe cream is churned in a barrel churn (Stoddard). The churn is first scalded, then rinsed with cold water, then the cream put in and temperature taken. The temperature should be 62 deg. in summer and 64 deg. in winter; if it varies from this the cream must be heated or cooled until it is right.

"We churn slowly at first, stopping frequently to allow the gas to escape; then faster to forty revolutions per minute. As soon as the butter-granules come we add water, revolve a few times and draw off the buttermilk; then add more water and draw off until it runs clear. In drawing off we use a sieve of small meshes, for more or less butter is apt to start out and bother at times; with the sieve it can be