

just when the flakey leafiness of the texture changes into stringiness and the curd to the touch feels velvety and oily. After cutting, thorough aeration is in order; and if the curd has not then developed the peculiar smell that cheese-makers know by experience, stirring and airing should be continued.

SALTING.

Salt should be added for the sake of flavor, to meet the taste of consumers, and as salt is antiseptic in its action, it has some effect on the keeping qualities of cheese. Salt is so preserved by expelling moisture, and thus retarding the action of the curing fermentation. For cheese that are intended for immediate consumption, and all fodder-made cheese are especially such, the proper quantity would be between one and one-half and two pounds of pure salt per 1,000 lbs. of milk according to the degree of moisture in the curd when applied. In October and November from two to three and one-half pounds per 1,000 of milk may be used for export cheese.

HOOPING.

Curd should be put under pressure in the hoops just after the first hardening effect of the salt is passed. The whey draining from the sinks at this stage is most unpalatable to the taste and disagreeable to the smell. The leaving of the curd in the sink for an hour or more after salting often kills the rosy sweet flavor. If thorough airing at this stage be desired, it should be attended to before the salt is mixed in. A gentle pressure, gradually increasing in power, should be applied. Uniformity of texture is generally gained or lost by the use of the press at the proper time in the right way.

BANDAGING AND TURNING.

The flavor in cheese is sometimes injured by the use of impure greasy water on the unclosed ends. This is merely mentioned because some makers may have overlooked the danger from this practice. Every cheese should be turned in the hoops after pressure has been used for twelve hours. No cheese should finally leave the pressroom until it is true in shape, handsome in appearance and neat in finish.

CURING.

In the curing-room the temperature should be regular, between 70° and 75° for April and May cheese, and between 65° and 70° when possible for summer and fall cheese. Attention to this is very important in order that curing may proceed without check, and that the acid flavor may be changed into a pleasant taste.

With the lapse of time perhaps the lactic acid wholly disappears, but it leaves a very nasty, bitter taste behind it, unless the curing-room be kept warm. There should be good ventilation to purify the air and to replace from without the oxygen that is absorbed by the cheese in curing. I prefer a curing-room that is well lighted.

After this method may be made cheese which will look well on the outside and be of such quality inside that everybody will like them. I hope that you in the United States will make finer cheese than we have been making, and I promise you that we will then in Canada, if we can, be manufacturing still finer cheese than you produce.

Silo in a Basement.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—Once more I am intruding on your good nature by asking for information re silos. I have a room in my underground stable about 18 x 14 and about 12 or 14 ft. high. It is built with stone all around with the exception of two windows and a door. I wish to know would this answer for a silo, and how would it be best to fix it up. Should I brick up the windows and sheet it up inside with lumber and fill in with sawdust or other like material? The top is a double floor with a room over it where I could place my cutter and let the cut corn drop through into the room below.

Deseronto, Ont.

W. C. B. R.

Such a room as our correspondent speaks of could without much outlay be converted into a good silo with the advantage of being excellently situated (as indicated by rough sketch sent us) for ease in feeding the cattle in the basement.

In regard to the boarding up of the inner walls, it is the almost universal testimony that wood not only

makes a cheaper silo, but that it preserves the ensilage better from decay. Stone being a better conductor of either heat or cold, the ensilage surrounded by stone walls is more apt to freeze during winter than if wooden walls with a dead air space enclosed it, and as it conducts the heat of the ensilage away before it has become heated enough to kill the germs and minute organizations that feed on the ensilage and bring about putrefaction, which results in great loss. Others object to the latter part of this theory and assert that allowing the ensilage to heat to kill the germs is like fanning the fire and trying to save the materials that are burning at the same time. The holders of this side of the question do not believe in heating at all, but fill in as rapidly as possible. The theorists may pick this bone of contention, however, for it does not influence the practical fact that wood has been found preferable to stone, and even many of those who have built stone silos have abandoned them and rebuilt wooden ones. The outside wall being of stone, no danger need be thought of in respect to lateral pressure, and hence, narrow studding, say 2 x 6 inches, placed at least 16 inches apart, would give a sufficient dead air space and answer the purpose. The size of this room will easily permit of this. On this, line with double row of boards, with tar felt between. The boards should not be too wide, or there will be a tendency for them to warp. Tongue and grooved boards are apt to break their connection, owing to the swelling caused by the moisture of the ensilage. The directions given in our last issue cover this ground, and hence, repetition here is unnecessary. Paint inside wall with a mixture of hot tar and resin, prepared as given in May number. This has a beneficial effect, not only on the keeping properties of the boards and ensilage by aiding in making them less porous, but it also permits the ensilage to settle easier. The filling of this dead air space with sawdust or any other material is not advisable, as it holds moisture, and tends to rot the studding and sides as is often noticeable, in the walls of icehouses so filled. Such a room, allowing 50 lbs. per cow per day, should furnish you with food for about six months, for a herd of fifteen cows. The windows should be made air tight in the manner suggested and boarded over, the whole principle being to keep out the air and keep in the heat.

Clover Silage—Ensilage without a Silo.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—You ask me to give you my experience with clover ensilage, and in reply I must say that I have not been so completely successful as I ought to have been, or as I think I now could be were I to try it. The first experiment I made in ensilage was with clover, which I ran through the hay-cutter, and put into a small silo of 15 tons capacity. I wanted supplementary feed for my cows in August, and opened it just four weeks after closing it. When opened it was perfectly good though sour. The cows ate it well for a few days, but it then commenced to spoil, and in about a week more we had to throw it all out. I attribute this to the hot weather, the fact that the clover was cut too early, just in the blow, and that in its external succulent state the fermentation had not ceased when the silo was opened. Had it been cut when more mature, as I am now quite sure all crops for ensilage should be, and allowed to lie in the heap and heat up to 140° or 150° before spreading and treading in the silo, and been made into sweet ensilage, as I now do with all my ensilage, I am quite sure the results would have been far different. This experiment made in 1879, discouraged me, and I did nothing in the matter for several years. Five years ago, however, I built a larger silo, and the first season, having four acres of fair clover, I cut in the blossom, and put it in long, just carefully mowing it away and treading it as though it were hay, only putting it in as soon as cut, quite green. This was in the first week in July.

I covered it with planks and weighted them about 20 lbs. of stone to the square foot. In September I uncovered it and put in 2½ acres of corn, running it through the hay-cutter. This addition settled the clover very much, fully ⅓. When the silo was opened in November the corn was all good, but about ¼ of the clover was spoilt. I weighed a cubic foot of the clover and also of the corn next above it. The clover weighed 25 lbs. and the corn 53 lbs. There was about 40 tons of clover and 45 tons of corn.

From these trials I consider that in the first place it is necessary to cut clover much later than one would for hay. This can be done with safety, as handling it green it will not break and waste as it would if handled at such a late stage for hay, and the seeds will not drop out of it and be lost. Also I believe it necessary to put it through the hay-cutter as, if put in in forks, it will not pack as well as even long corn laid in bundles. However, I doubt the wisdom of ensilaging the first crop of clover. In this climate there is no great difficulty in making hay of it, and I know of nothing better to feed cattle than clover hay. If the first crop is cut early, as it should, there ought to be a nice second crop ready to cut at the same time the corn is ready to put into the silo, and I would recommend that the clover be cut up along with the corn and put into the silo with it. At that time of the year it is difficult to cure clover into hay, and I am sure the admixture of this clover will increase very much the value of the ensilage. I may say that last year I had a lot of late oats which were evidently not going to ripen, so I mowed them and cut them up with my corn, and put them into the silo, the result being very satisfactory, and I am sure that in this way I saved a crop that without the silo would have been almost entirely lost.

In all work with the silo I cannot too strongly urge that whatever be put into it be carefully packed and trodden down around the walls. I know that on this point I am not sustained by many who are now trying to make out that ensilage can be made almost any way; but I am sure that the absolute essential to success with the silo is the exclusion of air from the mass, and I believe that the only way to prevent air following down the walls of the silo is to very thoroughly tramp and pack the ensilage against them. Also, in spreading the ensilage after it has heated up to 140° or thereabouts, I think it is important to spread it evenly in beds or layers all over the silo, to do which I always move even the bottom of the heap to ensure none of the layers being more solid than the rest.

I shall conclude this, I fear, unsatisfactory contribution, with an account of what I saw on a farm in England last winter. I may say that, as they cannot raise corn there very well they use a great number of different crops for ensilage—common grass, clover, vetches, peas and oats, etc. On the Aylesbury Dairy Company's farm at Horsham, Sussex, I saw an ensilage stack of clover containing 200 tons of green clover. It was built in the centre of the field where the clover grew, and was made like we build a load of hay instead of like a haystack; that is, the sides were kept highest in building, and not the centre. It was built on the ground, but a number of heavy bed pieces of timber were laid down about 3 feet apart and about 3 feet longer than the intended width of the stack. The clover was then piled on for several days, probably to about 20 feet in height. Then wire ropes were laid over from one end of the bed pieces to the other, a small windlass being fastened at each end and the ropes drawn down as tight as possible, levers and a ratchet being used on the windlasses. The ropes were tightened all night, reducing the height about half. Next day more clover was built on, and next night a man was kept at the ropes. To finish off, the top was built up in shape of the roof of a barn, and thatched as the haystacks in England are. The stack was about 25 feet wide, 60 or 70 feet long, and about 13 feet high at the sides and 25 or 27 in the centre. The sides were so hard I could hardly pull off a handful of the outside. I saw a similar stack cut into and there was only about two or three inches of the outside hurt, and even that, when fed, as I saw it, to the cows, was all eaten. The clover was not cut up, but the stack was cut down for use with a hay-knife, as they cut haystacks in the old country. The apparatus of ropes, windlasses, etc., in England cost much less than a silo would. The one I saw for this 200 ton stack cost £19 sterling. Here it would be much higher, while a silo would cost not much if any more than that. On the same