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the writer says : "The difficulty of producing a perfect emulsion (milk is one of the moet perfect emulsions known) has been completely overcome, the new fluid satisfying every test in this direction, even to the extent of refusing to "cream." The article goes on to say that milk is more than a food substance, containing a definite strain of bacteria which assist in digestion, and that these latic acid (sour milk) bacilli are introduced to the new fluid, "and permitted to act upon it until it reaches exactly that state of what may be termed maturity at which fresh cow's milk is obtained. That it is indeed a real milk is proved by the fact that excellent cheese and butter' can be made from it." This latter statement appears inconsistent with a previous one which says, this new milk refuses to "cream." How can butter be made if it refuses to "cream"? We are aware that whole milk can be churned, but it is a laborious process and usually means an excessive loss of fat in the buttermilk, because the fat globules are so diluted with the skim milk that it is difficult to bring them together in the form of butter. If the new milk refuses to cream how is it proposed to make butter, except by churning the whole milk which is not practicable as a rule ?.

The advantages of the new milk are summarized : "It is, of course, free from all suspicion of being contaminated with milk-borne diseases like tuberculosis, scarlet fever, or diph-It can, moreover, be made up in any theria. proportions désired, that is, with more or less casein, fat, sugar, or salts, and this can be supplied to children and invalids according to a medical prescription. Finally, the new milk can be produced more cheaply than ordinary milk, and should thus prove a real boon to the poor.

It seems to the writer as if two important practical lessons should be learned by dairymen from the foregoing. One is, that there are a great many persons who are trying to place substitutes for genuine products of the dairy before the consuming public, hence dairymen need to keep their eyes open all the time that imitations are not sold for the real thing. The second lesson is, the need for great care in the production and sale of cow's milk, that there shall be no reasonable ground for complaint in lack of cleanliness, and especially that there shall not be any chance for disease-producing organisms to contaminate milk sold for human consump-We are hearing altogether too much, with tion. or without cause, about typhoid, diphtheria, etc., being traced to the milk supply. Our dairymen should see that there is no cause for complaint on this score. The greatest safeguard is scientific pasteurization of milk. It looks as if it would be in the interests of all dairymen to require that all milk sold for human consumption shall be properly pasteurized. O. A.: C.

H. H. DEAN.

Silage and Soiling in Summer.

In these days of increased effort on the part of dairymen to produce more milk, summer silage and soiling crops, are topics read with great interest. For three successive summers the Experiment Station, Madison, Wis., has carried on experiments with cows from their dairy herds on these two different classes of feed. Feeding either one of these materials in the summer, when there is very often a lack of sufficient moisture to keep pastures fresh and growing, makes it possible for the dairyman to maintain a larger herd throughout the year, keep up a normal milk flow through the summer and take his cows into winter quarters in better condition, thus enabling him to increase his income in profits on the year's operations. From the work in connection with the experiment to test out the comparative values of soiling crops and silage, it was evident that it required less labor to plough, fit and plant an entire field of corn for silage than to plough, fit, and plant at different times a number of small plots, to furnish a variety of crops for soiling purposes. The daily harvesting of soiling crops in all kinds of weather and in limited quantity is the most expensive system of harvesting. It took from one to two hours daily for a horse and a man to cut and haul the green feed in the experiments, making an expense of from \$12 to \$15 per month and no adequate increased returns in milk were obtained over that secured from silage. Corn is harvested for silage at much less expense by an organized force of men and machinery to fill the silo at a single operation. The labor required daily to throw out enough silage for the cows used in the trial did not exceed twenty minutes, which was a short time compared with one to two hours required in preparing soiling crops. It was estimated that the loss incurred from corn put into the silo did not exceed ten per cent. of dry matter; the experimenters believing that a much greater loss, all things considered, usually was associated with the harvesting of soiling crops.

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The difference between the yields of the corn for silage and soiling crops is not great. Corn for silage is slightly more mature than that ordinarily fed for soiling purposes. The amount of feed to supply a cow daily in summer necessarily depends upon the condition of pasture, the size of the cow, the stage of her lactation, and her milk production. Cows in this experiment varying from 950 pounds to 1,250 pounds in live weight were supplied silage or soiling crops in quantities ranging from 20 to 40 pounds per head daily. In a few exceptions the largest, cows consumed from 40 to 48 pounds per head daily. On the average the silage lot of cows received approximately 30 pounds, and the cows fed soiling crops 35 pounds per head daily. In 1910 and 1911 pasture was very poor, and both lots of cows received on the average about 5 pounds of mixed hay per head daily. In 1912 the pasture was comparatively better than in the two previous years, making the feeding of hay un-necessary. In addition to other feed, all of the cows received from one-fourth to one-third as many pounds of grain daily as they produced pounds of milk, which is the same amount of grain ordinarily fed during the winter. It may appear unnecessary to feed cows this amount of grain during the summer, but in order to prevent a drop in the milk production, especially of cows which are in the early part of their lactation, and a loss of body weight, it is believed that the dairyman is justified in feeding a small amount of grain. Only during the early summer when grass pasture is most abundant is grain feeding discontinued in this dairy herd.

Comparatively few farms are organized at the present time to have silage available for summer. A silo for summer feeding should preferably be of smaller diameter than the average silo, for the reason that it is more difficult to feed silage in summer in quantities sufficient to keep it in good condition. A silo that is too large in diameter incurs waste, even if only a portion of the surface is cut down and fed at a rate to prevent silage from spoiling. In order to minimize the loss from moulding, at least two inches of silage should be removed daily. Feeding a cow at the rate of 30 pounds and removing silage two inches in depth daily requires four square feet of sur-A silo ten feet in diameter has a surface area of 78.5 square feet, and is, therefore of ample diameter for a herd of twenty cows. With a herd of ten or twelve cows it undoubtedly will be necessary to cut down and feed only one-half of the surface of a silo ten feet in diameter. The advantages of silage for summer feed, are greatest in a herd of twenty or more cows. In provid-ing silage for summer use a silo of small diameter and as much depth as possible is recommended.

A liberal, careful, and uniform system of feeding the dairy cow is of prime importance in maintaining a large and profitable production of milk. This system of feeding is often neglected in summer. Unless an abundance of pasture is a certainty, the dairy farmer should provide 8. silage or soiling feed for summer, and feed it in such quantities as cows will eat without waste. If grass pasture is very limited it appears sary to follow practically the same system of feeding with reference to supplying hay and grain in addition to silage or soiling feed as would be followed in winter. Good pasture, in addition to either silage or soiling feed, will save hay and grain, and encourage a large production of milk. Soiling crops of good quality yield approximate-ly a similar production of milk as does corn silage. The relative expense, however, of producing and feeding soiling feeds is considerably greater than that of producing and feeding silage. This is due to the greater amount of labor expended upon the soiling crops, and to the unpalatability and the waste of such crops caused by storms or drought, and conditions which are difficult to control. Years in which the rainfall is below normal, and the pastures therefore poor, are also the years when soiling crops are likely to be scant or The carrying over of the corn crop from fail. one year to the next by means of the silo tends to equalize the quantity of feed available from year to year; hence insures against losses in milk production, due to a scarcity of feed. From all observations it appears that dairymen will find it a matter of greater convenience, saving, and profit to feed corn silage to cows in the case of scant pastures than they will to feed soiling crops.

POULTRY.

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Incubation and Brooding.

Editor "The Farmer's Advocate":-When should we commence to prepare for the hatching season? Now! This may be taken as the correct answer to the question at any season. We cannot commence too soon. foundation should be laid by producing or building up the right kind of stock from which to obtain such eggs as may be reasonably expected to produce strong vigorous chicks, which are bound to thrive with anything like fair treat-ment, providing the hatching operations have been properly conducted. Supposing that we have good birds and they have gone into the winter house in first-class condition, which is of the very greatest importance; then we must conserve their health and vigor by properly housing, We must feeding and generally caring for them. realize the value of our breeding stock and be unremitting in our care and attention, insisting upon regularity in every detail. Healthful sur roundings, in which must be included a sanitary, well-ventilated house, and good feed, correctly fed.

The cotton front house, dry feeding principally, abundance of pure water, green food, hard grit, and charcoal, and a dust bath are some of the most important essentials. In addition to the dry meal feed in hoppers, a moist mash may be given, say, three times a week, and this should be composed of the best of the table scraps and a few small potatoes boiled, mixed with just warm water or milk, and dried to a crumbly consistency with the same meal as fed dry. Feed this always at noon sparingly, not as much as the birds will eat. By the middle of March or even earlier the birds to be bred from should be mated up, and arrangements made to give them the very best possible condifar as 'exercise is concerned. 80 These are the birds which should be let run, as they are the most valuable, but if it can be arranged to let all the birds run and still keep the breeders separate, so much the better.

In mating be careful to observe that none of the hens have any defects which may be similar to defects in the male bird, no matter how slight, and bear in mind that a good male bird is of the greatest importance. The prepotency is of the greatest importance. The prepotency of the male is so great that he may be said to constitute two-thirds of the flock, so do not be alraid to pay a good price for a male if you know you are getting him from a reliable source. Breed only from your best, and then you will obtain more chicks from fewer eggs. Select for hatching normal eggs, true to the type of the breed, discarding weak shells, rough or ribbed shells, eggs that are very small, abnor-mally large, long or very round. In selecting hatching hens choose those that are in the best condition, and quiet, so that they will nestle on the hand when placed under them in the nest. Set as many hens at one time as possible, and having selected them set that they feed well in the afternoon, and remove them at night to nests specially prepared in some perfectly clean place as far as possible away from the other birds as they must be secluded. Be careful to thoroughly dust the birds with insect powder or ordinary sulphur powder before placing them on the nests and dust them again in a week's time, and just before the chicks hatch. Test the eggs and just before the chicks hatch. on the seventh or eighth day, taking out the infertile and dead germ eggs, then probably a smaller number of hens can cover the remaining good eggs, and some more eggs can be set at once. Feed the hens on whole grain during the hatching period, giving them plenty of green food, pure water, and a dust bath. Do not worry the hens while the chicks are hatching, but clean out the broken shells when the hatching is about completed and then leave them quiet for a day or even more, as nothing will strengthen the little chicks so much as a complete rest and quiet; and they should on no account be fed for at least forty-eight hours after they are hatched or even longer. Good nests can be made by taking a twelve-inch board and cutting it into three equal lengths, using one four-foot piece for the top, one for the back, and one for the bottom. piece of the same material can be cut into onefoot lengths for the ends and partitions. Along the front is a four-inch strip to keep the litter in, and a slatted door is hinged on the front so that when it is opened it forms a platform to the front of the nest. This is arranged by using wedge-shaped cleats to hold the slats, the thick end of the wedge being at the bottom of the door which opens downwards, and this thick end will butt onto the four-inch strip. The hens are well fed before being placed on the nests, and the slatted door should be closed and buttoned up to keep the hens imprisoned un-til next afternoon at feeding time, when they should be let out and fed and imprisoned again till some time next afternoon.

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Must Pasteurize Milk.

milk and cream sold in Toronto after A11 June First, 1914, excepting that class of milk "certified" must be pasteurized. Thie known as Board of Health for the Queen City passed an ordinance recently to this effect. ' This also applies to milk and cream used in the production of ice cream, butter or any of the milk products. Dr. Hastings, Medical Officer of Health, used as the basis of his arguments in favor of pasteurization reports from other cities which showed that where this system was compulsory there had been a falling-off in the rate of tuberculosis.

Artificial nest eggs can be placed under the