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NECESSITY OF CLEAN MILK.

Paper Prepared by Mr. L. B. Ziemer for the Dairymen's Association Meeting.

Mr. L. B. Ziemer had a paper at the meeting of the Oregon Dairymen's Association at Ashland on the above subject, and as a thoroughly practical butter and cheese maker his paper is of special interest. We give below his paper:

Oregon takes high rank among the dairy states of the Union. She is conspicuous for the production of her butter and cheese, and condensed milk. She has also the most natural climate for dairying of any state in the Union. She produced last year nearly \$28,000,000 worth of butter, cheese and condensed milk. Her creameries and dairies produced ten million lbs. of butter, and about 300,000 cases of condensed milk, and four million pounds of cheese. Tillamook County alone will produce fully three million lbs. of cheese this year, and about ten thousand pounds of butter.

A very large amount of our butter and cheese is not of true, clean flavor, and it is safe to say that fully 70 per cent of all imperfect flavors are directly due to bacterial ferments, the source of which is traceable to carelessness and unclean process in stable-handling and milking of cows, and in using unclean and unwholesome milking utensils. A large proportion of the faulty milk is mixed with the better milk at the factory, and thereby all is contaminated, making it impossible to turn out a perfect product. It is clear that the patron who delivers clean milk needs protection against his neighbors whose unclean milk goes into the same cream or cheese vat; and the consuming public need protection against contaminated butter products. Frequently, when discussing with dairymen the necessity for clean and sanitary handling of milk, one is met with the objection: What is the use of all this scientific fussing? Milk is milk. But milk is milk only when produced by a man of clean habits, in a clean barn from clean and healthy cows. Milk which contains small portions of real estate, bits of fertility and parts of the straw-stack or hay-rick, or a portion of the cow's own overcoat, is not milk, but a filthy liquid that one can drink with composure only, because he does not know where it came from. There is as much opportunity to impart individuality to the product in the milk business as there is in any other business.

The Financial Side of the Question.

The patrons of the factories of this State have a direct financial interest in supplying only good, pure, clean milk, free from taints or bad flavors. The greatest amount of care and skill exercised by the factory operator in his work will not enable him to make a first class article of butter or cheese, or to secure the largest yield of it, from milk which is not in good condition. Whenever a patron delivers tainted or sour milk to the factory, it means a direct loss in dollars and cents to him and to his fellow patrons associated with him at the factory, and is an imposition on the consuming public. If a factory of 20,000 lbs. of milk per day accepts five or six cans of sour, tainted, or gasey milk, it will take, at the very lowest estimate from one to one and one half lbs. more of milk to make a pound of cheese therefrom than if all the milk had been good, clean, sweet milk. Suppose cheese to be worth 11c. per pound; the loss to the patrons would be \$17.60. In 15 days the loss sustained would mean \$246, and in 30 days \$528. Not only is the quantity diminished, but the quality is also impaired, and there may be another loss of 1/2c. to 1c. per pound. This would mean 10 to 20 dollars. The butter or cheese-maker does not exist who can make first class butter or cheese out of second class milk. The keeping quality of such product is also dangerous, and are put on the market and sold regardless of price. Hence, prices are lowered. If good, clean flavored butter and cheese are to be made, the milk supply at our factories must be from healthy cows, kept in clean, well-ventilated stables, fed on good, clean food, and with plenty of pure, fresh water. In butter and cheese, flavor is the quality most noticed by the consumer, and largely governs its value. Hence it is very important that we should have clean flavor. Good flavor in milk, butter or cheese insures a good, ready market at remunerative prices. Poor flavor condemns them, and no one

seeks them at any price. There is no question but that the value of our butter and cheese products would be enhanced fully 10 per cent, if all the milk delivered at our factories were uniformly clean and sanitary. The value of milk, when it is delivered at the factory, depends largely upon the care it has received previous to delivery, and its condition with reference to cleanliness, as well as to its fat content, influences the quality and quantity of the product made from it. Cleaner methods in our dairies, cheese factories and creameries are of the greatest importance for the success and reputation of Oregon dairy products. It is to the financial interest of every patron of a cheese factory or creamery that the milk delivered shall be the best and purest that can be produced. The man who skims or waters his milk is stealing that amount from his fellow patrons, but the man who delivers sour, tainted or gasey milk does infinitely worse, as such milk will contaminate the entire output of the day, and thus decrease the returns of every patron, lower the standard of quality and the reputation of his factory, and rob the consuming public of a clean and wholesome product. The losses in this state caused by taints and other changes in milk due to lack of proper knowledge or neglect and carelessness, are numerous as compared with the losses of skimming or watering.

There is no reason why New York, Wisconsin, Minnesota or Iowa butter or cheese should command any better prices than Oregon products, particularly in view of the equable climate and luxuriant vegetation in our beautiful fields and valleys, and indeed with the all round superior advantages of this section of the country.

Need of Skilled Inspectors.

There is urgent need of competent men clothed with authority, to compel strict cleanliness in cheese factory, creamery, and their products delivered, and instruct in the best possible way how cheese products are to be handled. Of course we cannot expect the efficient force of inspectors that are supplied, for example, by New York, Wisconsin, Minnesota or Iowa, but we can at least make a start in that direction. The dairy interests of this state are of sufficient extent and value to warrant us in demanding a fair share of recognition from our state officials and the legislature. If this work could be adequately done, it would mean better patrons, better factories, better prices, and an enviable reputation for the quality and quantity of Oregon butter and cheese.

A few farmers seem to have broken into the next Congress and they are needed there. A little leaven leaveneth the whole lump.

Senator Tillman evidently thinks that a national constitution is something that can be half-sold while you wait, and swear at the cobbler for not working faster.

A small vein of low grade gold ore has been discovered in England. Mr. Bryan might proceed to show that the output of gold is too large and that mankind is to be crucified by high prices.

Henry Clews argues that an inheritance tax would induce the rich to be their own administrators and stop the breaking of wills. Mr. Carnegie's method relieves him of any worry on the subject.

The pure food law, passed at the last session, was the most important reform legislation enacted by Congress in fifty years. Already its good effects are felt, though it is hardly yet in full operation. Adulterators finding it is dangerous to sell their fraudulent compounds have ceased to make them on the wholesale scale heretofore practiced. Grocers and others, who have been handling these vile agents of death and disease, are notifying the manufacturers that they must send pure articles or none as they are in danger of arrest if they sell adulterated articles. It will thus soon be possible to eat a meal at a hotel or restaurant without fear of poisoning one's self with vile deceptions. Farmers every where should bring pressure on their State legislative members to pass laws corresponding to the national law and thus head off the possibility of having adulterated stuff manufactured locally. Every state in the Union should have such a law and none are more interested in their passage than farmers.

A man was recently arrested at New Albany, Indiana, for violating the oleomargarine law. This fellow bought his "grease" from Chicago packers at eight cents a pound, colored it to resemble butter and sold it in enormous quantities to unsuspecting housewives in Louisville at 25 and 30 cents a pound. The United States Court will doubtless deal severely with this fraud as his offense is a very serious one. Every pound of this colored "grease" that he disposed of defrauded some honest dairymen or butter-making farmer of that much money. This incident proves how necessary it was to enact the present law, which was secured by the farm organizations and farm press after a prolonged and bitter struggle. No one objects to the sale of oleo as such; but all butter makers and consumers object to its being put on the market and sold under the fraudulent pretense that it is genuine butter. Let all articles be sold for exactly what they are and no harm will be done.

Dairy Do's.

Professor Robertson, of Canada, advocates a mixture of corn ensilage horse beans and sunflower seeds for dairy cows, trial having convinced him of the efficacy of the ration.

No cow and no milk can be in prime condition that has to stay in a filthy, ill-smelling stable.

The cow does by her owner as he does by her. For good feed and care she will give a good yield, and for poor feed and care she gives the poor yield.

In dairy work in the Gulf States do not blindly follow the methods of good dairymen on the further side of the country, but remember that every State presents its own peculiar problems.

Do not lose money in trying to save a little by refusing to feed cows when the pasture gets short. Many good dairymen feed their cows at least a little every day in the year and profit well by it.

No one should be led into undertaking dairying on a large scale till he has fixed on the market he will have for his dairy products and has learned the cost of getting these products to market.

The silo will soon make its way southward to the very Gulf of Mexico on dairy farms and on many others. Even in this land of wonderful natural advantages the silo can be made a profitable investment.

Pedigree in the dairy cow is all right, but even this must be supported by performances which brings in the money. Of course we sometimes see pedigree bringing "long" prices in a sales ring, but there is an end to excessive inflation.

Cows giving milk consume about twice as much water as those not giving milk. The New York Experiment Station found that the average water consumed for each pound of milk produced was 4.82 pounds.

Wheat bran is one of the finest of dairy feeds, but it contains only about one-third as much protein as cotton-seed meal and often costs about the same per ton, therefore, the dairymen is paying three times as much for each pound of protein. If the dairymen is obliged to buy feed the most concentrated will usually prove the most economical.

In an experiment to determine the best forms of roughage for dairy cows along with concentrated foods, the Pennsylvania station found that where grass is not available silage was best. Some dry fodder or hay should be fed along with the silage. The experiment shows that corn stover can be used to replace timothy hay with excellent results and a considerable saving of cost. If grown in a rotation, timothy hay should be sold and corn used for the dairy animals.

In Denmark communities of dairymen employ an expert tester by the year, who does nothing else but test the milk for the community and study the value of different cows. Each farmer contributes his share toward the salary of the tester and it has been found that in every community where these expert testers are employed the amount of milk per cow and the profit per cow has been much increased. The poor cows are weeded out and their places taken by good ones.

There are times when cream seems to resist all efforts to make it come to butter. The difficulty is usually laid to the ripening of the cream, but the trouble is greatest when two or three batches are put together which have ripened at different times. The temperature of the cream however, has usually more to do with the ease than any other factor. The time required to churn depends upon five things: First, temperature of cream; second, ripeness of cream; third, thickness of cream or per cent of butter fat; fourth, kind of feed the cows are receiving; fifth, the length of time the cows have been milked. Never fill the churn more than half full of cream, avoid turning too rapidly, stop the churn several times before the butter comes and remove the cork and let the gas escape. When the cream begins to break, care should be exercised not to gather the butter granules into a large lump. Cease churning when the granules are about the size of wheat kernels.

It is well known that fine, dry dirt is one of the best of absorbents and disinfectants. It is also plentiful, and costs nothing but the labor of hauling. It makes excellent bedding, if covered over with a few inches of straw, and it really keeps the cows clean, even when used in the stalls without straw, as it is easily removed from the hair with a brush. A stall bedded with dry earth can be cleaned out in a much shorter time than when the earth is not used, and, as dirt absorbs the liquids and gases, quite a saving is effected in that manner. Its uses go beyond the stall. As the stable should be cleaned daily, quite a large quantity of dry earth will be used in the course of a year, and it will necessarily be added to the heap itself, yet its presence therein will double the value of the manure by preventing loss of fertilizing material. It is a better absorbent than corn stalks, and is easily handled when the manure is hauled to the fields.

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