

## THE DAIRY.

### Feeding Cotton Seed Meal.

traceable to three small minor defects in rodding which had escaped the inspectors. During the same four years the risks on the Unprotected Company totalled \$59,567,272—a trifle more than those of the Protected Company—but the amount of lightning claims paid by this company during that time reached \$32,269, which is 1,008 times as much as paid by the Protected Company, and practically all of this large amount was paid to cover losses on unrodded buildings. During the past seven years this company taking unrodded risks has had only three small claims on rodded buildings, although twenty per cent. of the buildings on which they carry policies are rodded. Deducing these rodded risks, we see that the \$32,269 damage occurred on unrodded risks amounting to \$47,753,818. At this rate the loss on \$55,172,075 of unrodded risks would be \$37,282, which is 1.168 times as great as the loss on the same amount of properly rodded risks.

These two companies operate in the same field—the entire State of Michigan—so the comparison of their losses is clear evidence in favor of rodding. So phenomenal has been the success of the company carrying protected risks only that nearly every company operating in the State is now carrying its rodded and unrodded buildings in separate classes and each class is assessed for the losses sustained therein.

In the Unprotected Company above referred to both classes have been carried for five years and the assessments per \$1,000 risk have been much lower in the protected class, as shown by the following table:

Year.	Assessment per \$1,000 risk.	
	Unrodded.	Rodded.
1909 .....	\$2.50	\$1.50
1910 .....	3.33	2.50
1911 .....	2.50	1.87½
1912 .....	3.33	2.00
1913 .....	3.33	2.00

This would indicate that from the standpoint of the insurance company, as well as from that of the owner of the buildings insured, it pays to rod.

It is interesting to compare the figures in the foregoing table with those in the following table, showing the assessments of the Protected Company for the same five years:

Year.	Assessment per \$1,000 risk.	
	Unrodded.	Rodded.
1909-1910 .....	\$2.00	
1911 .....	1.30	
1912 .....	1.30	
1913 .....	2.00	

These figures further drive home the point—Losses are fewer on rodded buildings.

Nine county and township companies were investigated, the smallest of which did only about one-eighth as much business during the four years as did the Protected Company previously mentioned, but during that time this small company taking unrodded buildings paid \$3,274 in losses, or 102 times as much as was paid by the large company doing eight times the amount of business, but accepting only rodded buildings. The reports of the other eight all told the same story as the largest and the smallest.

One company investigated, which took risks on both rodded and unrodded buildings, decided to allow a reduction of twenty per cent. in the rates where buildings were rodded. Judging by other companies where assessments were made according to the losses in each class this was not a sufficient reduction, there being nearer forty per cent. difference on the average.

Rodding has been proved to be efficient. So successful has the Protected Company been that it has drawn upon the business of other companies. In September, when Prof. Day was looking into the operation of the company, it carried \$32,000,000 in risks and business was increasing almost \$1,000,000 per month. Other companies have been practically driven to divide their business into rodded and unrodded classes.

The company first compared with the Protected Company has grown from \$12,507,801 in 1909 to \$18,500,000 insurance in September, 1913, but this company divided their risks into rodded and unrodded classes the very year that the Protected Company commenced business, viz., 1909. In spite of this the Protected Company is now doing nearly twice the business done by the Unprotected. Other companies which did not do this, lost business and during the past two years have made the change to the two classes.

The first two companies compared are the clearest proof of the efficiency of lightning rods. From their losses we see that when the damage to properly-rodded buildings amounts to \$1.00 the damage to unrodded ones amounts to \$1.168,00, or in other words rods have prevented \$1.167,00 out of an expected loss of \$1.168,00, which indicates 99.91 per cent. efficiency, considerably better than in Ontario, where improper rodding was included. This should be sufficient to convince the most skeptical that lightning rods properly installed are an effective protection.

Andrew M. Soule, President of the Georgia State College of Agriculture, in a bulletin on cotton seed meal recently published outlines tests in which silage, wheat bran and cotton seed meal when fed in opposition to silage, alfalfa hay and wheat bran, resulted in the production of a gallon of milk at a cost of 8.5 and 9.2 cents respectively. In other words, the results were in favor of using cotton seed meal as a source of protein rather than alfalfa hay. Virtually the same results were obtained when an attempt was made to substitute cowpea hay for cotton seed meal. It is true, these experiments were made several years ago, and while the cost of producing a gallon of milk may be somewhat higher now than at that period, the relative difference in efficiency was undoubtedly established by those tests. Since the experiments in question were made, alfalfa hay has increased relatively more in price than cotton seed meal, and the difference in favor of cotton seed meal as a source of protein has been increased thereby.

In experiments made on the College farm at Athens, Ga., the following rations were fed to groups of four cows each. The first group received cotton seed meal six lbs., silage 30 lbs., and corn stover six lbs. The second group received cotton seed meal four lbs., bran four lbs., silage 30 lbs., and stover six lbs. The third group received bran ten lbs., silage 30 lbs., and stover six lbs. In this test the attempt was made to demonstrate the relative efficiency of cotton seed meal as a concentrate in a ration for dairy cows when fed in conjunction with wheat bran and in direct opposition to it. Note that the same amount of silage and stover was fed all groups. The efficiency of the rations is determined by the relative cost of a gallon of milk, and the cost of the feed per cow per day. The first group made a gallon of milk at a cost of 5.97 cents; the second group made a gallon of milk at a cost of 10.07 cents. The cost of the feed per cow per day was with the first group, 12

concentrate to dairy cows for many years, it would appear that its use in the quantities indicated in this report resulted not only in the production of milk at a moderate cost, but has not impaired the health or longevity of the cows receiving it. Cotton seed meal has been fed in opposition to corn meal, corn and cob meal, chopped cowpea hay, alfalfa hay, beet pulp and wheat bran. In every instance it has proven the cheapest source of protein, and the most desirable concentrate to feed to dairy cows. Some have experienced dissatisfaction from its use, but these parties have, in most instances, fed it in too large quantities, or have not provided any succulent food for the ration, such as silage or good pasture may be made to furnish. Persons who simply feed cotton seed meal at random will not secure good results from its use. It should be fed according to the weight and size of the animal, and the quantity of milk she is giving. It is a simple matter to buy a pair of scales and a properly-gauged measure to enable this work to be done quickly and economically.

### Dairy Methods and Rations.

From experience in Ontario and Quebec, and from observation and enquiry in other provinces, J. H. Grisdale in his new bulletin, "Milk Production in Canada," gives the following suggestions as applying to the Maritime Provinces, Ontario, Quebec and British Columbia:

Summer.—Cows on pasture from time grass is six to eight inches high. Pasture supplemented by soiling crops or ensilage as soon as cows show any signs of falling off in milk yield.

While on grass, feed small amount meal mixture, equal parts bran, crushed oats and corn meal, say from one to three lbs. per cow in full milk. Cows being fed ensilage may require somewhat larger portion.

Winter.—Provide liberal supply of succulent feed, as mangels, sugar mangels, sugar beets, turnips, swedes, corn ensilage, clover ensilage, etc.

Feed moderate amounts, clover hay, mixed hay, English hay, alfalfa, corn forage, corn stover, marsh hay, etc.

Feed with succulent feed some oat chaff, barley straw, etc.

Supply meal mixture made up of two or more of the following, one or more out of each group:

Group (a).—Crushed oats, corn meal, bran, shorts, buckwheat shorts, barley meal, gluten feed, brewers' grains, distillers' grains, etc.

Group (b).—Cottonseed meal, oil cake meal, gluten meal, peas, horse beans.

#### SUGGESTED RATIONS FOR 1,000 POUND COWS.

Ration 1.—Roots 50 lbs., clover hay 20 lbs., oat straw 5 lbs. Meal mixture: Bran 500, oats 200, corn 300, gluten meal 300. Feed one pound

meal to each four pounds milk produced.

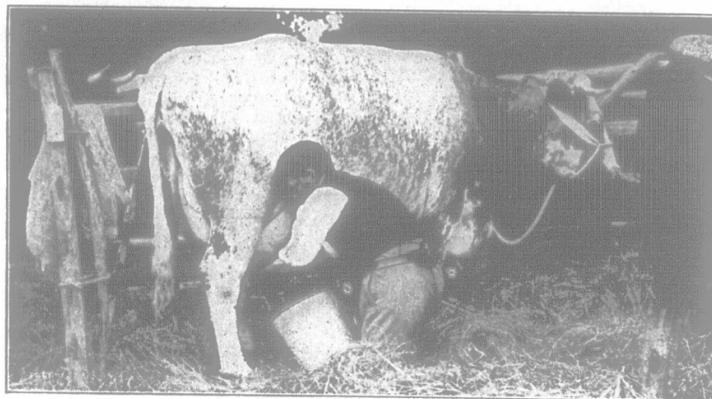
Ration 2.—Roots 20 lbs., corn ensilage 35 lbs., clover hay 10 lbs., oat straw 5 lbs. Meal mixture: Bran 500, oil cake meal 300, corn 200. One pound to each four pounds milk produced.

Ration 3.—Clover hay 20 lbs., oat straw 10 lbs. Meal mixture: Bran 500, oil cake meal 300, oats 200. Feed one pound to each three pounds milk produced.

Ration 4.—Corn ensilage 40 lbs., oat chaff 5 lbs., alfalfa hay 8 lbs. Meal mixture: Bran 500, gluten 200, oil cake meal 300, barley 200. Feed one pound to four pounds milk produced.

Ration 5.—Corn ensilage 40 lbs., alfalfa 10 lbs., oat straw 10 lbs. Meal mixture: Bran 500, oats 500, barley 500, cottonseed meal 500. Feed one pound to four pounds milk produced.

Reports indicate that the new United States tariff is, as foreshadowed in a recent editorial in this paper, drawing upon the supplies of dairy cattle in this country. The district around Toronto is said to have been scoured by American buyers, and two trainloads of cattle went out of it to the United States in one day last week and many of these were young heifers. Already dairy-men in the district are beginning to feel the scarcity of heifers. Supplying a large city with milk means that the old matrons must have their places taken by younger stock from time to time. When an old cow breaks down a young one must be had immediately to keep up the contract milk supply. Where will she come from if all the heifers are sold?



Milking in the Show-ring.

The first-prize dairy cow at an English Show. A milking Shorthorn.

cents; with the second group, 15 cents; and with the third group, 19.9 cents. These figures certainly show that at the prices prevailing for foodstuffs when this test was made that cotton seed meal clearly outclassed wheat bran as a source of protein for dairy cows. In this test the cotton seed meal was charged at \$23.50 per ton.

In this connection the high fertilizing value of cotton seed meal as compared with the other concentrate should not be overlooked. In feeding dairy cows 75 per cent. of the fertilizing constituents should be returned to the soil in the form of yard manure where proper care is taken to preserve the excrements. It has been shown that cotton seed meal is frequently worth as much per ton for fertilizing purposes alone as it actually costs at prevailing market prices. Its ability, therefore, to enrich the manure and thus increase crop yields on soils to which it is applied is an important matter to bear in mind.

Last winter another interesting test was conducted at the College. In this instance four cows were used in each group, and the following rations were fed. The first group received beet pulp five lbs., cotton seed meal five lbs., and silage ad libitum. The second group received wheat bran and cotton seed meal at the rate of eight lbs. per day mixed in the proportion of wheat bran 66 lbs., and cotton seed meal 110 lbs., with silage ad libitum. The third group received cotton seed meal six lbs., and silage ad libitum. The average cost per gallon of milk with the first group was 8.86 cents; with the second group, 7.28 cents; and with the third group 6.25 cents. In this instance the cotton seed meal again clearly demonstrated its efficiency as a producer of milk.

Having fed cotton seed meal as the principal