

Commencement Thesis,

Kansas as a Dairy State.

C. W. Shull

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While Kansas as a state is rapidly taking high rank among her sister states by reason of her natural wealth, her agricultural and stock interests, and her intelligent energetic people; she does not as yet rank high as a dairy state. There is no just cause for this. While reasons may be given as to why Kansas has fallen behind in the onward march of dairy progress, there should be no grounds for these reasons and there will be none when Kansans are educated to see and follow the course which is for their best interest. The school of experience is a large school, and there only do many men learn. The lack of interest, in the past, in this important branch of agricultural industry may be due to several causes.

In the first place the state is naturally adapted to stockraising, and the production of beef has been practically the only line along which the cattle industry has been conducted. The rich inviting prairie soil gave great encouragement to grain growing, which, followed in connection with stock raising was

found very profitable. Dairying, as a distinct branch of agriculture did not attract great attention. This was largely due to the fact that practically no interest in the subject had yet been aroused, and also that farming was conducted on too extensive a scale, as it is in fact yet to-day. Dairying generally presupposes intensive farming. The comparatively scant local population gave but little encouragement for a home market while the product was not large enough to justify shipping to a distant market. Private dairying has not received the needed encouragement owing to the disadvantages mentioned, also because the product was often inferior in quality and would not command sufficient value to justify its manufacture. The introduction of the earlier creameries was largely through the efforts of men from other states. These creameries met great discouragement. The sparse population of the rural districts necessitated long milk routes, while it

was difficult to keep milk under such circumstances, in the best condition for producing good butter. It was difficult to secure the milk of a sufficient number of cows to make the work really profitable. The first year's work of a new creamery was a trying one. It costs something to get started. The creamery has its reputation to make and must entail expense in introducing its products. If the patrons do not receive the returns for their milk or cream, that the patrons of the older and established creameries receive, they feel that they are being wronged and will complain - and some will withdraw their support at a time when the creamery needs it the most. all this in connection with the lack of proper knowledge of what successful dairying demands will at least partially account for the general lack of dairy interest in the state.

But the friend of the Kansas dairy need not be discouraged. The future

is not dark. Many great enterprises have passed through adversity before reaching success. What may be said of Kansas as a whole need not be said of each of its parts. Despite the discouragements of earlier years, Kansas butter is now beginning to take rank with the product from colder and established dairy states. Kansas' butter record at the World's Fair was creditable; she having on one occasion scored 99 on our June exhibit, while on several other occasions took rank ahead of Illinois, Pennsylvania, Indiana, Minnesota and New York. We have no natural disadvantages to overcome in attaining a high rank as a dairy state. It is simply a question of increased interest and education along proper lines. From the Census Report of 1890 we learn that there are, in round numbers, nineteen million dairy cows in the United States. From Statistics in the Tenth Biennial Report of State Board of Agriculture 1895-96, we learn that in 1896 there were five hundred and seventy

five thousand milk cows in Kansas valued at \$13,134,412.50. The following table taken from the same report will show concisely the dairy situation in the state for the years 1895-96.

Table I.

		Cheese	Butter	Milk sold
1895	Pounds	727,489	31,134,220	
	Value	\$76,576.35	\$4,050,048.60	\$383,987.00
1896	Pounds	1,141,869	35,007,334	
	Value	\$91,347.52	\$4,225,896.44	\$620,640.00

From the following table we may learn more specifically what has been accomplished in those parts of the state where dairying is more advanced. The figures taken are for entire counties as shown and the comparison of the statistics for the two consecutive years makes an interesting showing. As to locality the counties taken may be considered as fairly representative of the entire state. With a single exception, the output of butter for 1896 shows a decided increase over 1895, while cheese varies widely.

Table II.

County	Year	Cheese		Butter		milk sold other than for butter or cheese
		Pounds	Value \$	Pounds	Value \$	
Dickinson	1895	300	31.50	1,094,933	142,341.29	26,315.00
	1896	16,105	1288.40	1,687,621	257,938.56	17,050.00
Reno	1895	8,337	875.38	638,746	83,036.78	7,208.00
	1896	10,020	801.60	1,511,825	216,184.70	6,730.00
Bourbon	1895			576,585	74,956.05	23,950.00
	1896	200	16.00	417,251	45,910.86	26,590.00
Jefferson	1895	104,664	10,989.72	423,054	54,997.02	1,989.00
	1896	118,738	9,499.04	686,904	92,486.74	2,250.00
Washington	1895	7,688	177.24	778,704	101,231.52	7,345.00
	1896	2,488	99.04	969,887	125,302.77	6,323.00
Sedgwick	1895	100	10.50	702,835	91,368.55	25,200.00
	1896	108	8.64	1,162,511	153,393.71	30,085.00
Shawnee	1895	33,250	5,591.25	593,892	77,205.96	16,594.00
	1896	125,360	10,028.80	611,776	67,474.26	30,960.00
Riley	1895	29,515	3,099.07	318,502	41,405.26	7,304.00
	1896	100	8.00	472,785	64,563.10	5,198.00

No state in the Union can claim any better natural conditions for a successful dairy business than Kansas. In fact no state can claim as good natural conditions as regards some of the essential features of a paying

dairy business.

In the first place Kansas has a highly productive soil for crops and much good and comparatively cheap farm land. These are not trivial points, in the eyes of the dairyman. It means that the prospective dairyman will need no great amount of capital at the outset, and that he may be assured of being able to produce butter at a low figure and at the same time reap substantial profits. With a productive soil an extensive farm is not necessary while the crops produced will be of good quality and of high nutritive value. In Kansas there are many small farms which comprise much pasture land not tillable, hence will remain for long years to come, as grass land. The bluffy portion of our state, comprising Pottawatomie, Riley, Clay, Geary, Morris, and Wabaunsee counties, contains scores of such small farms which are admirably adapted to dairy farming. These farms are, for the most part too small for the

profitable handling of stock cattle. If these eighty, one hundred, or one hundred and twenty acre farms possess but a few acres of farm land; a few choice or average dairy cows would bring far greater returns to their owners than a larger number of stock cattle. While feed is generally cheap it is not the best policy for the small farmer to buy it, which he must do if he handles more cattle than his place will provide for.

The excellent and unlimited food supply is another strong point for the Kansas dairy. Of feeds for the dairy cow, we have variety and abundance. Alfalfa, which is grown so successfully in this state, and which produces so largely, furnishes all that could be desired in the way of a highly palatable and nutritive hay for dairy cows. The mill feeds, or oats, wheat Indian corn and Kaffir corn produce well and are easily grown. Besides the grain, these crops furnish vast amounts of rough feed. The sacchar-

ine fodders are also largely grown for feed and produce well. Among other feeds either dry or hydrous may be mentioned soy or soja beans, which, though practically unknown as yet to Kansas farmers, are destined to occupy an important place as a feed stuff. They are a boon in that the ground beans are an excellent substitute for linseed meal, being very rich in protein and fat. With this crop grown on his own farm, the dairyman is saved from paying twenty dollars per ton for linseed meal. The soy bean meal is not only as good as the linseed, but is much better and cheaper. Modern dairying calls for the feeding of ensilage, and this the dairyman may have, in the state that grows corn so extensively and cheaply.

Directly connected with the question of feed supply is that of price. If the dairyman must buy his feed stuff, he can nowhere buy it more cheaply than in Kansas. This gives Kansas dairymen a most important ad-

vantage over their brothers of the more eastern states. Some eastern dairy men have realized the great advantage that the western plain states have over those of the east - and have acted as they thought. Mr F. H. Vaughn, formerly of Vermont now of Nebraska, gives in Hoards Dairyman Vol. 25 page 372, the following statement concerning the average prices of feed in Vermont:

Hay - \$12.⁰⁰ per ton.

Corn \$0.⁶⁰ per bushel.

Bran \$20.⁰⁰ per ton.

He further states that in Vermont he had made butter at just about the same prices as were received in Nebraska.

The following statements concerning Nebraska apply equally well to Kansas:

"We thought we could see in this region of rich lands and cheap feed, a far better field for a progressive dairyman, than in the older states where the land was poor and feed costly, while the markets for a good article are little or no better than they are in the west. -----

after an experience of six years I have

had no reason to change my mind. My faith that Nebraska will eventually become a grand dairy state is stronger than ever before. Nature has certainly done her share, and if the farmers of the state can be made to realize that there is more money and far less risk in dairying than in any other branch of farming, then Nebraska is sure to win."

In 1895, feedstuffs were quoted in Wisconsin as follows:

Ground oats	\$18 ⁰⁰	per ton
Corn meal	16 ⁰⁰	" "
Bran	14 ⁰⁰	" "
Shorts	16 ⁰⁰	" "
Oil meal	24 ⁰⁰	" "

The following are for Maine the same year:

Cotton seed meal	\$24 ⁰⁰	per ton
Bran	22 ⁰⁰	" "
Oats	0 ⁴⁰	per bushel.

In 1895 prices in Kansas ranged as follows:

Wheat	\$0 ⁵⁰ to \$0 ⁸⁰	per bushel.
Corn	0 ²² " 0 ⁵⁰	" "
Oats	0 ¹¹ " 0 ¹²	" "
Hay	3 ⁰⁰ " 11 ⁰⁰	" ton.

A. E. Jones a prominent Kansas dairyman is authority for the statement that the butter cost in feed for a 300 pound per annum cow is ten cents. He says further: "----- Considering our other natural advantages Kansas can lead the world in butter production, as also cheese, for cost of production is what counts in the final estimate, and here no other state can excell us. In Maine they pay practically no more for butter fat than they do here, while the cost of feed is almost doubled. These markets of the east are supplied with western feeds and grains. When corn is worth thirty cents in Kansas, it is sixty five cents in Maine."

At the World's Fair, butter was made at a cost of twelve and our half cents per pound, while at the Wisconsin Experiment Station it was made for ten cents per pound. No further argument is necessary to show that the relation of cost of feed to profitable selling price of dairy products is a most important one.

Kansas' excellent and bounteous water supply is - also advantageous to

her dairy interests. The use of water is intimately connected with dairying, hence the quality of dairy products will be directly influenced by the character of the water used. This will apply to the drinking water of the cattle as well as to that used by the dairyman for washing and cleaning purposes. Bad water will as surely deteriorate the cows milk as it will injure the milk products. Good water must not only be free from odors common organic or inorganic substances in solution, dirt, etc but it must also be reasonably free from injurious bacteria. Such water is found in most Kansas wells of fair depth. Most spring water is also excellent. From these two sources must come all water used in the dairy. Creeks, reservoirs, rivers, and ponds furnish drinking water of varying quality for stock but their use can not, at all times, be recommended. The dairyman cannot afford to have his cows drink any but the best of water.

It is for climate with its associated features, that the dairyman may point

to Kansas - as the ideal dairy state. The drawbacks of colder or warmer states are not found in Kansas. Our comparatively short and reasonably mild winter seasons render expensive barns, stables and other shelter, for the most part unnecessary. The proper sheltering of the sensitive dairy cow during the long severe winter, is the great problem for the northern dairyman. The expensive ice item, or means of producing artificial cold is the problem for the butter and cheese maker of the south. Kansas enjoys the desirable middle-ground.

These desirable conditions are particularly unfavorable to that bane of the dairy cow - tuberculosis. Kansas cows are free to spend the greater part of their lives in the open air, instead of having to endure long confinement in stables and suffer from bad odors, dust, and insufficient ventilation; to which we may add, excess of heat with its undesirable accompanying circumstances. All of this goes toward im-

pairing the general health of any animal, and of cattle, the dairy cow especially.

Kansas' long pasture season also adds to her desirability as a dairy state. Nor must we forget the excellent quality of the pasture. When the rye pasture is exhausted and spring opens, the cows may be turned on the Kentucky or English blue grass or alfalfa where they will do well until the native grass is ready which in turn will carry the cattle until October or thereabouts when they may again be placed on the blue grass or alfalfa. When this pasture is gone the wheat and rye will be ready. It is entirely possible to so arrange crops, as to have a continuous pasture for cows from seven to nine months of the year or more.

The comparatively dry pure air of Kansas is peculiarly favorable to the successful handling of dairy products as well as to the health and care of animals. Scientific investigations have proven that moisture and heat are

essentials for the most rapid development of bacteria. Moisture is particularly essential. In so far as reasonable dryness, coolness, and cleanliness is maintained, to that extent will we be successful in combating bacterial growth which impures milk products and may, if not checked, render them worthless.

Dairying has a direct bearing upon soil fertility. In view of our rich virgin soil, dairying so far as it concerns soil recuperation, does not as yet greatly impress the Kansas cow keeper. But it is bound to do sooner or later. The continual cropping of even the best soil without replacing in some form the fertility removed, is bound to ultimately exhaust it.

The influence which progressive dairying has upon worn or partially or partially exhausted land may be best illustrated by an actual case.

Jefferson County, Wisconsin, was originally a fair agricultural region, but as a result of indifferent

management, by 1870 the soil had become so depleted that it would produce but eight bushels of wheat per acre, and the mortgage indebtedness in the county amounted to about forty five per cent. of the farm valuation. About this time, W. D. Hoard and a few other wide awake men began agitating the question of a judicious system of dairying. Together with some of their neighbors, who had become interested, they went into the butter and cheese business. Only the best product was offered for sale. Jefferson county soon gained a reputation for her dairy products and twenty five years has made her one of the greatest dairy regions in this country. The land is now worth from sixty-five to one-hundred dollars per acre, and the average wheat yield has increased to nineteen bushels per acre. Although the population is almost entirely rural, the inhabitants of the county have over one and one half millions of dollars in the banks, over

and above plenty of big red barns and highly improved farms. The mortgage indebtedness has been reduced to seven per cent. of the farm valuation, and peace, plenty, and intelligence reigns. Many Kansas farmers may profit by meditating upon this result.

With all natural conditions in her favor, the question of a great forward movement along the dairy line in Kansas depends upon her people. They need a campaign of practical dairy education. Our present State Dairy Association with sufficient means and more effective organization could accomplish this end and thereby greatly increase its usefulness. But above all, the state government should take an interest in the matter and thereby still further the study of the question, on the part of the people. Kansas should do this by establishing a dairy school at the Agricultural College. We need such a school and need it badly.

An appropriation of ten or fifteen thousand dollars by our legislature would amply provide for a dairy department in connection with the other regular departments of the college. Kansas must have this school before she will make any prominent advance in the dairy industry. Such schools, as found in Iowa, Wisconsin, Pennsylvania and other states, are exerting a wonderful influence for good. Kansas should educate her own dairymen instead of importing men from other states to conduct her creameries. With the establishment of such a school Kansas dairying would at once awaken to new life. Students would flock to the institution for instruction and in turn go out and exert their influence toward furthering the dairy industry of the state. Kansas would soon pass her old rivals and take a place at the head of the procession where she naturally belongs.

While the dairy school will give great impetus to the work, it will not do all. The older farmers, whose school days are over, must become acquainted with the fundamental principles of the dairy business. They should become diligent readers of a reliable dairy paper, and attend whenever possible the various dairy conventions and farmers institutes. The farmer must know what constitutes a typical milk cow. His ignorance along this line is the cause for much disappointment in dairying. The dairy cow must convert the feed consumed into milk instead of storing it up as lean meat or fat. Hence the beef type of cow must be ruled out. It is true that some cows of beef breeds are profitable milkers but this is not the rule.

Aside from her natural ability, a cow's usefulness may be greatly increased by proper feeding. The dairy cow should receive nothing

but the best of feed and plenty of it. The amount of feed required will vary with the size and capacity of the cow. This amount the farmer may learn from the tables of feeding standards. He will also learn what constitutes a balanced ration for any particular individual, and will compound and use it.

The care of animals as regards shelter, cleanliness, and their general health must also be mentioned. Of all cows, dairy cows most need good treatment. They are particularly sensitive and liable to bovine ailments.

All honor is due to Professor Babcock for that valuable invention, the Babcock Test for butter fat. The introduction of this test was a boon to the dairyman. He can now pick out the really profitable cows from the poor or indifferent ones. He need no longer keep for milk a cow that is fit only for beef. With this test not only are the general good qualities of the herd increased,

but what is more, the cost of production of butter fat is materially lessened by reason of the high butter tests of the cows.

The question of creameries calls for some attention. The question might naturally be asked; which is the best, the private, proprietary or co-operative creamery? The answer must be conditional. Much will depend upon the circumstances. If the farmer and his wife are progressive; are well located; have the necessary equipment, and know what constitutes good butter, and sell no other kind; they may expect to reap a fair degree of success. Many private dairies have proven very successful to their owners. The greater number of our larger creameries, i.e., where the milk from many farms is handled, are proprietary. Under this system the farmers, or patrons of the creamery may on the whole secure better returns for their milk, because a better grade of butter is made, and sold at a higher price. The handling of butter in large quantities

also lowers cost of manufacture, to say nothing of the special skill of the creamery butter maker in turning out a high grade product. The worst feature of the proprietary system is that the patrons have no voice in the creamery management. They sell their milk or cream to the proprietor and that is the end of it. The interests of both patron and creamery man are mutual and should be so considered. Their harmonious action is helpful to both. When farmers learn to work together, then will they be able to build and manage cooperative creameries, which are the best of all. With this style of creamery every patron will have an interest in the creamery and will work for its greatest success. Then will the patrons as well as the creamery prosper. Such creameries are as yet comparatively few but they are bound to be the creamery of the future.

The market for dairy products will depend somewhat upon the scale on which we work. Under

private dairying we must, for the most part, look to the home market for the sale of our products. As a rule it would not pay to ship small quantities of butter any distance. The larger creameries can ship their butter profitably, and in fact must look to a distant point for a market.

It has been truly said, that dairying of all farming operations suffers the least from business depression and unstable markets. A Michigan farmer sums up the dairy question as follows:

1. It is the business upon the farm that permits the most absolute control over conditions of production and distribution of product, hence the most profitable.

2. It is the highest art of farming, because it combines all the other lines and gives greater opportunity for executive and manufacturing skill.

3. It is the most free from irresponsible and destructive competition by necessity of its character and

by the personal equation of the individual producer.

4. It is a more exact line of production, permitting gross receipts to be forecast with greater exactness; hence the greater possibilities of increasing net receipts either by lowering expenses or increasing the volume of the product.

5. It permits the employment of labor at a season of the year when farm labor is cheapest, if winter dairying is followed.

6. Of all products sold from the farm, butter takes the least fertility and restores the greatest amount to the farm, and it is well known that the most fertile sections of the country are where butter farming is followed."

Dairying as well as other forms of industry has its disagreeable as well as its bright side. Close attention to business is demanded. The labor is bound to be routine to a great extent. The cows must

be cared for regularly and promptly regardless of weather, or other affairs in which their owner may be interested. Habits of regularity and thrift must be cultivated and constantly exercised. These good habits formed will react upon all other farm operations in a very beneficial way.

It is needless to say that dairying is not the lazy man. The dairy has no place for him. Men of unquestioned energy and ability are demanded. Men who are not afraid to work, and work over time if the occasion demands it, are the ones who will stand high on the ladder. Their hours of labor may not be very long but are apt to be irregular, this is especially true of the creamerymen.

Dairying is profitable financially. There is no question about this. More than one Kansas farmer has been tiled over a season of drouth and crop failure by reason of his creamery checks. The income from the dairy is certain and for

the most part steady, regardless of sudden climatic extremes. The finely improved in dairy regions tell of prosperity.

Over and above the fact that the business is safe, steady, and profitable, the conscientious dairyman has the satisfaction of knowing that he places upon the market several of the most important and highly valued articles of human food.
