T H E S I S

COMPARATIVE FEEDING EXPERIMENT BETWEEN MICHIGAN AND WESTERN BRED LAMBS.

B Y

L E W I S F. B I R D.

Michigan Agricultural College.

1 9 0 3.

THESIS

As sheep feeding becomes more and more an industry of the farmers of the State of Michigan each year, it is important, if not essential, that they should know, or at least have an idea, as to what feeds will yield the largest net gain, and also whether the greatest net gain can be made by feeding home bred or western bred lambs, and it is in view of a probable or partial answer that the following experiment was made. It would be reasonable, of course, to suppose that the heavier lambs would make the better gains if they were in the same state of condition, or nearly the same, at the beginning of the experiment, and this reasoning was found to be true, as heavier lambs did make a greater average gain than did the lighter ones.

The plan of the experiment was to secure as nearly as possible an average lot of lambs such as a feeder would buy for fattening purposes.

The Michigan lambs were bought of Frank Watson, September 30, 1901, weighing at that time an average of 53.9 pounds in Lansing, and an average of 53.25 pounds upon arrival at the College, at $4.35 per cwt. They were turned on pasture, where they remained until November 14th, when, on account of a storm, they were put in the old grade dairy barn, where the experiment was carried on. From November 15th to 26th they were fed a ration of lucerne hay without any grain ration. From November 26th to 30th they were fed lucerne hay and a grain ration of 1 pound of bran per head per day, when the experiment proper began.

The western lambs were bought October 7th, of Clay, Robinson and Co., Chicago, at 4 cents per pound, together with $18.20 freight made them cost $4.34 per cwt. They averaged 53 pounds in Chicago. They were shipped October 8th, and arrived in Lansing at 9:00 A.M. October 9th. On October 10th, at the College, they averaged 52.5 pounds. They were dipped October 11th, using 4½ packages of Cooper's Sheep Dip to make 112 gallons. October 11th, they were turned on pasture in Field 14. October 19th they were weighed and averaged 54.4 pounds. November 9th, they averaged 58.13 pounds. They were put in the barn the same time as the Michigan lambs and fed upon the same ration.

The experiment was run in three thirty-day periods, using corn, corn meal, oats and bran as a grain ration, and clover hay as a roughage. Period one, the grain ration was oats two parts to bran one part by weight. Period two, whole corn two parts to bran one part by weight. Period three, corn meal two parts to bran one part by weight. During periods one and two they were fed one pound of grain per head per day, and period one, one and one-half pounds per day.

The lambs were at no time allowed to exercise in the open air, and were not taken out of the pen except for the purpose of weighing once each week. Clean, fresh water was kept before them at all times. They were fed at 5:30 each morning, and at 4:30 each night.

A record of the temperature of the barn was taken twice

each day, and the barn was kept at as near the same temperature as possible.

The prices of feed used in the experiment was:

Oats,	$.40	per bushel.
Corn,	$.55	" "
Corn Meal	20.35	" ton.
Bran,	20.00	" "
Hay,	6.00	" "

The oats were grown upon the College farm, and were of the American Banner variety. The greater portion of the whole corn and corn for the corn meal was alos grown upon the College farm. The bran was purchased of the flouring mills of Lansing. The hay was purchased of farmers in the near vicinity of the College, and was of the early June clover variety except what was fed from February 5th to 13th, which was second cutting clover.

P L A T E I.

Date of Weighing	Weight of Mich. Lambs	Weekly Gain or Loss	Weight of Western Lambs	Weekly Gain or Loss
Nov. 30	1897.		1567.	
Dec. 7	1922.	25.	1592.5	25.5
" 14	1947.	25.	1618.	25.5
" 21	1965.	18.	1603.	-15.
" 28	2025.	60.	1745.	142.
Jan. 4	2083.	58.	1761.	16.
" 11	2121.5	38.5	1773.	12.
" 18	2221.5	100.	1875.5	102.5
" 25	2229.	7.5	1889.5	14.
Feb. 1	2227.5	-1.5	1936.5	47.
" 8	2345.5	118.	1988.	51.5
" 15	2432.5	87.	2026.	38.
" 22	2427.5	-5.	2084	58.
" 28	2474.5	47.	2127.5	43.5
Total Gain-		577.5		560.5

P L A T E II.

Date of Weighing	Weights of Mich. Lambs	Gains for Each Period	Average Weight	Weights of Western Lambs	Gain for Each Period	Av. Weight
Nov. 30	1897.		75.88	1567.		62.68
Dec. 30	2093.	196.	83.72	1728.	161.	69.12
Jan. 29	2146	53.	85.84	1945.	217.	77. 8
Feb. 28	2474.5	328.5	98.98	2127.5	182.5	85. 1
Total Gain-		577.5			560.5	

P L A T E III.

Michigan Lambs.

Period	Gain	Cost of Grain Fed	Grain Fed for 100# Gain	Cost of 1# Gain
I	195.	$8.75	384.6	$ .046
II	53.	7.41	1415.	.14
III	328.5	11.35	342.	.0345

Western Lambs.

Period	Gain	Cost of Grain Fed	Grain Fed for 100# Gain	Cost of 1# Gain
I	161.	$8.75	466.	$ .0543
II	217.	7.41	345.6	.034
III	182.5	11.35	616.4	.062

P L A T E IV.

Period	Bran	Oats	Hay Fed	Cost of Feed		
				Grain	Hay	Total
I	500	1000 Shelled Corn	3000	$17.30	$9.00	$26.50
II	500	1000 Corn Meal	3000	$14.82	$9.00	$23.82
III	750	1500	2250	$22.70	$6.75	$29.45
Cost of feed entire experiment						$79.77

Michigan Lambs.

Debit.

25 lambs,	1897# at	$4.35	=	$80.52
Bran,	875# "	20.00	=	8.75
Oats,	500# "	.40	=	6.25
Corn,	500# "	.55	=	4.91
Corn Meal,	750# "	20.35	=	7.63
Hay,	4125# "	6.00		12.37
		Total cost-		$120.43

Credit.

25 lambs,	2475.5# at	$6.25	=	$154.66

Profit on 1 lamb- $1.40

Western Lambs.

Debit.

25 lambs,	1567# at	$4.34	=	$68.01
Bran,	875# "	20.00	=	8.75
Oats,	500# "	.40	=	6.25
Corn,	500# "	.55	=	4.91
Corn Meal,	750# "	20.35	=	7.63
Hay,	4125# "	6.00	=	12.37
		Total cost-		$107.92

Credit.

25 lambs,	2127.5# at	$6.25	=	$132.97

Profit on 1 lamb- $1.00

Plate I shows the weekly gain or loss of both Michigan and Western lambs. It will be seen that although the difference in total gain is slight that it is in favor of the Michigan lambs.

Plate II shows the gains by periods.

Plate III gives the cost of the grain fed, the grain fed for 100 pounds gain, and the cost of 1 pound gain. It will be noticed that the Michigan lambs made a very small gain during Period II, but I think that this can be attributed in part to their not getting a grain ration large enough to much more than supply the natural wants of the body. Also to the fact that the weather during this period was warmer than either Periods I or II, and that their wool was much longer and their fleeces heavier than the Western lambs.

Plate IV gives a total cost of all of the feeds used during each period, and also a sum total of the whole experiment.

One remarkable thing in this experiment was that only one lamb was off feed during the whole time. This lamb was a Western, weighing 99 pounds, which was off feed from January 31st to February 5th, when he began to eat all right.

Conclusions.

The heavier lambs made greater gains than the lighter on the same feed.

The Michigan lambs made a greater net profit than did the Western lambs.

The colder the weather, the better the gain.

Small gains are not always unprofitable, nor are large gains always profitable.

A ration of corn meal and bran gave better results, as a whole, than either corn and bran or oats and bran.