UNIVERSITY OF WYOMING

AGRICULTURAL EXPERIMENT STATION

LARAMIE, WYOMING

BULLETIN NO. 103

I. Corn vs. Barley in Lamb Rations
II. Methods of Feeding Barley to Lambs

A. D. FAVILLE, Animal Husbandman.

Bulletins will be sent free upon request. Address: Director Experiment Station, Laramie, Wyoming.

CONCLUSIONS.

When fed to fattening lambs corn gave somewhat better returns than did barley. Pages 4 and 5.

Whole dry barley proved fully as satisfactory in lamb fattening rations as did soaked barley, cracked barley or barley meal. Pages 6 and 7.

Introduction

Henry states that "sheep worth feeding can always grind their own grain." Under eastern condition this statement doubtless holds true, but does it apply with equal force where hard western grains are used? The experiment outlined in the following pages was undertaken with the idea of throwing some light on this question, while at the same time the additional data was gathered as to the relative feeding value of corn and barley.

OUTLINE OF THE EXPERIMENT.

The lambs to be used in this experiment were secured in the fall of 1912 from a flock near Laramie. They were a small, unattractive looking bunch in which Rambouillet blood predominated. Most of them were wether lambs that had been castrated when it was found that they would make inferior rams; and, while they appeared to be rather indifferent feeders, subsequent developments showed them to be a thrifty lot. The lambs were dipped after being taken from the range and all were given similar rations for several weeks prior to the opening of the experiment proper.

Mr. James Wilson, one of the Senior Agricultural students, did most of the morning and evening feeding.

The test was begun November 26th and continued for 110 days. Details as to the weight and number of lambs in each lot and the feeds used are shown in Table A.

TABLE A—*Divisions, Weights and Feeds.*

Lot.	No. in Lot	Avg. Wt. Per Head.	Feed Used.	
		Lbs.	Roughage.	Grain.
I	24	43.1	Alfalfa Hay	Whole Corn
II	24	46.4	Alfalfa Hay	Dry Whole Barley
III	24	44.2	Alfalfa Hay	Soaked Whole Barley
IV	24	43.8	Alfalfa Hay	Cracked Barley
V	24	43.1	Alfalfa Hay	Barley Meal

The lambs though light were in a condition to make rapid gains when given the opportunity.

Second cutting alfalfa hay, exceptionally fine in quality, was fed. This hay was grown near Laramie and was without doubt the best used at the Station for some years.

The barley used (Scotch) was also grown near Laramie and was about average in quality. Soaked barley was prepared by weighing out the amount required for a feed, after which it was soaked in slightly warmed water for 12 hours and allowed to drain suspended in a gunny sack for another 12 hours. Cracked barley was barley very coarsely ground, while in barley meal the barley was made as fine as possible.

Corn was shipped in from the east.

Good shelter and an exercising yard was provided for each lot.

One lamb in Lot III died during the course of the experiment. His place was immediately filled by another animal of the same type and breeding, weighing practically the same as the dead lamb. No readjustment of figures was made because of this loss.

The same amounts of grain were fed each lot and there was almost no difference in the quantity of hay eaten per pen.

RATION RESULTS.

Lots I and II furnish a comparison of corn and barley while Lots II, III, IV and V bring out the value of different methods of feeding barley. No attempt has been made to compare these lots separately in the following tables.

Table B gives a condensed summary of the weights and gains of each lot of lambs.

TABLE B—*Average Weights and Gains Per Lamb.*

Lot.	Wt. at Beginning Lbs.	Wt. at Close Lbs.	Total Gain Lbs.	Daily Gain Lbs.
I Corn	43.1	82.8	39.7	.36
II Barley	46.4	83.3	36.9	.34
III Soaked Barley	44.2	80.3	36.1	.33
IV Cracked Barley	43.8	79.5	35.7	.32
V Barley Meal	43.1	79.3	36.2	.33

As will be seen at once, gains were uniformly good. Corn gave slightly the best results while the whole barley gave somewhat greater gains than barley fed in any other way.

The lambs at the close of the experiment, though not extremely fat, were in good killing condition and were readily taken by the local markets.

TABLE C—*Average Feed Consumed Per Lamb (110) Days*

Lot.	Waste Hay Per Lot, Lbs.	Average Feed Eaten Per Head	
		Alfalfa, Lbs.	Grain, Lbs.
I Corn	75	296	79
II Barley	90	295	79
III Soaked Barley	78	296	79
IV Cracked Barley	70	296	79
V Barley Meal	85	294	79

There was almost no difference in the total amount of feed eaten by the lambs in the different lots. The average daily ration per lamb was as follows:

Alfalfa Hay	2.70 pounds
Grain	.72 pounds

The average weight of the lambs taken at the middle of the trial was approximately 62 pounds. If feed requirements look small it must not be forgotten that the lambs were small.

The grain ration was increased from .4 of a pound per head at the beginning of the trial to 1 pound during the sixth week and then dropped back to ¾ of a pound during the last weeks of the experiment. Apparently the lambs were forced too rapidly, necessitating a cutting down in the daily allowance.

As a rule, the lambs receiving whole dry barley seemed to relish their grain better than did those receiving barley in any other form.

Table D, giving the feed requirements for 100 pounds gain contains some interesting figures:

TABLE *D—Feed for* 100 *pounds Gain.*

Lot.	Alfalfa Lbs.	Grain Lbs
I Whole Corn	746.	199.
II Whole Barley	799.	214.
III Soaked Barley	820.	219.
IV Cracked Barley	829	221
V Barley Meal	812.	218.

Whole corn effected a saving of 15 pounds of grain and 53 pounds of hay when compared with whole barley. In other words, it required 15 pounds or seven per cent less grain and 53 pounds or six and one-half per cent less alfalfa for 100 pounds gain when corn replaced barley in a ration.

Feed requirements for all of the barley lots were remarkably uniform. Dry whole barley gave slightly the best returns, hence it is safe to assume from results obtained in the foregoing trial that soaking, cracking, or grinding western barley does not increase its value in lamb rations.

Grain requirements for 100 pounds gain were unusually low in the experiment, due probably to two important factors. First, the lambs were in condition to make rapid and economical gains. Second, the alfalfa hay used was exceptionally fine in quality.

TABLE E—*Composition of Feeds.*
(Analysis by F. E. Hepner.)

FEED.	Percentage Composition, Airdry Substance.					
	Water.	Ash.	Crude Protein.	Crude Fiber.	Nitrogen free Extract.	Extract Ether
Alfalfa	6.39	9.30	19.17*	24.84	38.63	1.67
Corn (Mostly Yellow Dent)	10.88	1.39	9.85	1.76	72.01	4.11
Barley	10.02	2.69	10.63	3.53	70.95	2.18

*This alfalfa is richer in crude protein than any other sample of alfalfa analyzed here.