Bulletin No. 46, : : : June, 1893.

Agricultural Experiment Station

—OF THE—

AGRICULTURAL AND MECHANICAL COLLEGE,

AUBURN, : : ALABAMA.

RYE VS. ENSILAGE.

ALEX. J. BONDURANT, AGRICULTURIST.

A. F. CORY, ASSISTANT AGRICULTURIST.

☞The Bulletins of this Station will be sent free to any citizen of the State on application to the Agricultural Experiment Station, Auburn, Ala.

All communications should be addressed to

EXPERIMENT STATION, AUBURN, ALA.

Published by order of the Board of Direction.

THE BROWN PRINTING CO., STATE PRINTERS, MONTGOMERY, ALA.

BOARD OF VISITORS.

COMMITTEE OF TRUSTEES ON EXPERIMENT STATION.

HON. J. G. GILCHRIST.....Hope Hull.
HON. R. F. LIGON.....Montgomery.
HON. H. CLAY ARMSTRONG.....Auburn.

BOARD OF DIRECTION.

WM. LEROY BROUN .....President.
A. J. BONDURANT.....Agriculturist.
N. T. LUPTON.....Chemist.
P. H. MELL.....Botanist and Meteorologist.
J. M. STEDMAN.....Biologist.
C. A. CARY, D. V. M .....Veterinarian.

ASSISTANTS:

JAMES CLAYTON .....Assistant Horticulturist.
A. F. CORY*.....Assistant Agriculturist.
J. T. ANDERSON, Ph. D .....First Assistant Chemist.
L. W. WILKINSON, M. Sc .....Second Assistant Chemist.
F. A. LUPTON, M. Sc.....Third Assistant Chemist.
R. F. HARE, B. Sc .....Fourth Assistant Chemist.
G. S. CLARK.....Clerk, and Assistant Botanist.

*In charge of Soil-Test Experiments.

THE EFFECT OF RYE AND ENSILAGE ON THE YIELD OF MILK.

The ensilage question is one of some interest to all of the farmers of Alabama, it is of especial interest to those few who are thinking of building silos. That ensilage is a good feed is beyond all question; whether or not it pays even in cold climates seems from the best evidence to depend on "Local circumstances and seasonal peculiarities."

In Bulletin number 5, second series, volume 3, of the Ohio Experiment Station, after reviewing the work of nine other stations, the following conclusions are drawn: "While the results of these experiments are somewhat contradictory, those which bear evidence of the greatest thoroughness agree in indicating that there is practically no difference between the feeding values of a given quantity of corn, cured as ensilage, and an equivalent quantity cured as dry fodder, provided equally good husbandry has been used in both cases.

Whether corn may be cured and preserved more economically by one process or the other depends largely upon local circumstances and seasonal peculiarities."

The above quotation gives the standing of the silo question in the northern States where ensilage is most used; what the standing may be in Alabama and other States of the same latitude where green feed can be had the whole year round without silos, remains to be settled by experiment.

GREEN RYE AS OPPOSED TO ENSILAGE.

Last winter some simple experiments on Rye and Ensilage were conducted on this station, the object being to compare the effect of these two feeds on the yield of milk.

Four thoroughbred Jersey cows were used in the experiment. Before beginning the test the milk from each cow was carefully weighed for four days. The cows were then divided into two lots of as nearly equal milk producing capacity as possible.

Kate Hazen 1st and Ransom's Pride were called for convenience lot 1, Hattie Signal 2d, and Miss Hattie Pogis were called lot 2.

Up to the beginning of the experiment all of these cows had received the same feed.

During the experiments both lots were given the same quantity of grain and fodder, the only difference in the feed being in the Rye and Ensilage. The regular grain feed per day was four quarts of corn and cob meal and two quarts of cotton seed meal, oat straw and shucks and during the latter part of the experiment pea hulls were used as dry fodder. The grain feed was made small in order to more clearly show the effect of rye and ensilage. The low yield of milk is due partly to the small grain feed and partly to the cold and rainy weather.

The experiment was begun on the morning of February 3d, and continued until the night of March 2d, making 28 days.

It is divided into two periods of fourteen days each. Du- the first period lot 1 was fed rye, and lot 2 ensilage. During the second period lot 1 was fed ensilage and lot 2 rye.

At the beginning of the test, the quantity of rye fed per day to each cow was 30 pounds. This was increased to 40 and on the fifth day of the test to 50 pounds. Kate Hazen 1st, failed to eat all of her rye and for the remainder of the experiment only 40 pounds of rye per day was fed to each cow. At the beginning of the 2d period the rye given to lot 2 was raised in the same way to 50 pounds. Both cows in this lot failed to eat all of the 50 pounds, and the quantity given per day for the remainder of this period was

40 pounds. The ensilage was measured, but several times it was weighed and the weight fed per day found to be about 25 pounds None of the cows ate all of the ensilage given.

The ensilage used was a fairly good quality of sour ensilage made of corn cut just after the grains had glazed.

The rye used was cut every evening. It was sown thickly in drills two feet apart on well manured land and was ready for the first cutting in November.

The following tables give the daily yield of milk from each cow :

FIRST PERIOD.

	Lot I, Rye.			Lot II, Ensilage.		
February.	Kate Hazen 1st weight of milk in pounds.	Ransom's Pride — weight of milk in pounds.	Yield of milk from both cows.	Hattie Signal 2nd weight of milk in pounds.	Miss Hattie Pogis weight of milk in pounds.	Yield of milk from both cows.
3	11¼	9¼	20½	8¾	13¼	22
4	12½	11¼	23¾	9	15	24
5	13¼	11½	24¾	9	13¾	22¾
6	14	12	26	9½	14¼	23¾
7	13¾	12¼	26	9½	13½	23
8	13½	13¼	26¾	9½	13¾	23¼
9	11¾	12½	24¼	9½	14½	24
10	12¼	13¼	25½	9½	14	23½
11	12¼	12½	24¾	9½	13¼	22¾
12	14¾	13¼	28	10¼	13½	23¾
13	14	12¾	26	9¼	13½	23¾
14	14¼	12½	26¾	9¾	13½	23¼
15	14¼	12¾	27	9¾	14¾	24½
16	14	12½	26½	10½	14¼	24¾
	185¾	171½	357¼	133¼	194¾	328

Total yield of Lot I ... . 357¼ pounds.
Total yield of Lot II .....328 "
Balance in favor of Rye ... 29¼ "

SECOND PERIOD.

	Lot I, Ensilage.			Lot II, Rye.		
February.	Kate Hazen 1st weight of milk in pounds.	Ransom's Pride — weight of milk in pounds.	Yield of milk from both cows.	Hattie Signal 2nd weight of milk in pounds.	Miss Hattie Pogis weight of milk in pounds.	Yield of milk from both cows.
17	13½	12¾	26¼	10¼	14¾	25
18	12	11½	23½	10	15½	25½
19	12	10¼	22¼	10½	16	26½
20	12	9½	21½	11	16¾	27¾
21	11¾	9¾	21½	10¾	16¼	27
22	12¾	10¾	23½	11¾	17¼	29
23	12¾	11½	24¼	12	17½	29½
24	13¼	11½	24¾	11¾	18¼	30
25	12¾	11	23¾	12¼	18	30¼
26	12½	11½	24	12	18½	30½
27	12¼	11	24¼	12	17¾	29¾
28	11¾	11¼	23	11¾	17½	29¼
Mch.						
1	12½	11¾	24¼	12½	19	31½
2	13½	10¾	24¼	12	18¾	30¾
	175¼	154¾	330	160½	241¾	402¼

Total yield of Lot I ..... 330 pounds.
Total yield of Lot II ..... 402¼ "
Balance in favor of Rye . 72¼ "

The following is a summary of the important points in the above tables:

DURING THE FIRST PERIOD.

Lot 1, fed on rye yielded 357¼ lbs. milk.
Lot 2, fed on ensilage yielded 328 lbs. milk.
Balance in favor of rye 29¼ lbs. milk.

DURING THE SECOND PERIOD.

Lot 1, fed on ensilage yielded 330 lbs. milk.
Lot 2, fed on rye yielded 402¼ " "
Balance in favor of rye 72¼ " "

Lot 1, fed on rye, first period yielded 357¼ lbs. milk.
Lot 1, fed on ensilage 2d period yielded 330 " "
Balance in favor of rye 27¼ lbs. milk.

Lot 2, fed on ensilage, first period yielded 328 lbs. milk.
Lot 2, fed on rye second period yielded 402¼ "
Balance in favor of rye 74¼.

The above experiments simply show the effect of rye and ensilage on the flow of milk. The effect of these feeds on the yield and quality of butter remain to be determined by future experiments.

Those farmers who are thinking of building silos had best bear in mind the following points:

1st. Corn cured as ensilage has no more feeding value, than an equivalent quantity cured as dry fodder.

2d. In order to make good ensilage it is necessary to have a good silo, a good ensilage cutter, and steam power.

3d. Green rye can be raised at the rate of ten tons per acre. In the winter of 1889–'90 rye sown in drills two feet apart on this station was cut four times between October 30th and February 27th, and yielded 21,392.50 per acre. The yield will of course vary some with the severity of the winters.

In order to make good ensilage some capital is necessary.

Rye for winter use requires only time, a liberal use of manure, and some labor.

Very few farmers can even think of making ensilage; but every man can afford to have a rye patch.

It is expected to continue the experiment on rye and ensilage next winter.