

EXPERIMENT STATION  
OF THE  
KANSAS STATE AGRICULTURAL COLLEGE,  
MANHATTAN.

---

BULLETIN NO. 47—AUGUST, 1894.

---

FARM DEPARTMENT.

C. C. GEORGESON, M. Sc.,  
*Professor of Agriculture and Superintendent of Farm.*  
F. C. BURTIS, M. Sc., *Assistant.*  
D. H. OTIS, B. Sc., *Assistant.*

---

EXPERIMENTS WITH WHEAT.

---

THERE is but little to record in the line of wheat experiments this year. The wheat crop was almost a complete failure here, as in some other parts of the state. The injury was caused by a week of cold weather in the latter part of March, following some two or three weeks of unusually mild weather, with the thermometer frequently ranging from 70 to upwards of 80 degrees in the shade. This stimulated the wheat into a growth which was unusual for the season, and the severe cold weather which followed cut this growth entirely to the ground, putting back and almost destroying the wheat that was not killed at once.

The meteorological record of the College for March shows that the minimum temperature from the 22d to the 29th was daily much below freezing, and on the 25th, 26th and 29th there were 20, 24 and 23 degrees of frost, respectively. This was too much for the wheat, which had previously been forced unduly ahead by the warm weather, as noted, and it succumbed to such a degree that most of the experiments were worth nothing. Add to this a freeze on the 20th of May, at a time when much of the wheat which survived was in bloom, which made the destruction well-nigh complete.

When it was discovered that a large percentage of the heads did not fill, owing to the destruction of the bloom, we decided to cut the wheat for hay, such as it was; and the few plats which, besides those noted hereafter, remained until harvest, turned out so poorly, and represented the experiments under way so incompletely, as to make publication of their yields ill advised.

As the readers of these bulletins know, the Currell has for several years been the leading variety of wheat at this Station, and all our experiments, except the variety tests noted below, were sown in this variety. It is an early maturing wheat, which starts growth early in the spring, and probably this may have been the reason why it suffered so badly. The yield of the experimental acre and the rotation plats, all of which were in Currell, are the only ones recorded here besides the variety test.

The acre which has been continuously in wheat without manure since 1880 was seeded September 19, 1893, with one and one-fourth bushels of Currell. The drill used was the Champion shoe press drill. The wheat made a good growth in the fall, and stood the weather well until the latter part of March, as noted. What was not then killed was further retarded by dry weather during April, in which month there was a total rainfall of only one and one-third inches, precipitated in nine light showers. The result was that only 6.05 bushels wheat and 496 pounds of straw were harvested. The record of the acre, up to date, stands as follows:

WHEAT CONTINUOUSLY WITHOUT MANURE.

YEAR.	VARIETY.	YIELD.		REMARKS.
		Grain, bushels.	Straw, pounds.	
1880-1881.....	Early May.....	9.00	.....	
1881-1882.....	Early May.....	47.00	7,845	
1882-1883.....	Early May.....	28.19	3,281	
1883-1884.....	Zimmerman.....	37.00	4,525	
1884-1885.....	Zimmerman.....	12.30	2,238	
1885-1886.....	Zimmerman.....	.....	.....	Winterkilled.
1886-1887.....	Zimmerman.....	.....	.....	Winterkilled.
1887-1888.....	Zimmerman.....	30.31	3,766	
1888-1889.....	Zimmerman.....	37.00	3,619	
1889-1890.....	Zimmerman.....	22.90	1,841	
1890-1891.....	Zimmerman.....	30.75	3,435	
1891-1892.....	Currell.....	31.30	.....	
1892-1893.....	Currell.....	11.65	1,131	
1893-1894.....	Currell.....	6.05	496	{ Partly winterkilled.
Produce of 14 years.....	.....	303.45	.....	
Yearly average.....	.....	21.67	.....	
Average of the 12 crops harvested.....	.....	25.28	.....	

WHEAT IN ROTATION PLATS.

Bulletins Nos. 20 and 33 detail, at some length, the rotations followed on 50 one-tenth-acre plats set aside for experiment in this line. Ten rotations are experimented with on these plats and wheat is one of the leading crops. The first half of the series, plats 1 to 25 inclusive, was begun in 1890, and the second half, plats 26 to 50 inclusive, was started the following year. The accompanying table gives the yield of wheat and the crops taken from each of these plats during this period, with the exception of 1893. The first half of the series was in that year so badly winterkilled that the plats were plowed up and, all alike, planted to red Kaffir corn.

TABULAR STATEMENT OF CROPS AND YIELD.

The figures given apply to the yield of wheat only.

NO. OF PLAT.	RATE OF YIELD PER ACRE.					Rotation.
	1890.	1891.	1892.	1893.	1894.	
	Grain, bus.	Grain, bus.	Grain, bus.	Grain, bus.	Grain, bus.	
1.....	40.8	30.58	33.08		7.50	{ Wheat continuously with 20 tons manure per acre yearly.
2.....	27.3	31.25	36.33		4.25	Wheat continuously, no manure.
3.....	Fallow	36.83	Fallow		Fallow	Fallow and wheat in alternation.
4.....	24.6	Corn	25.25		1.66	Corn and wheat in alternation.
5.....	Oats	32.08	Oats		Oats	Oats and wheat in alternation.
6.....	35.6	31.00	39.41		4.16	Same as plat 1.
7.....	28.6	29.17	37.41		5.12	Same as plat 2.
8.....	Fallow	19.63	Fallow		Fallow	Same as plat 3.
9.....	Corn	33.17	Corn		Corn	Same as plat 4.
10.....	30.6	Oats	34.33		3.58	Same as plat 5.
11.....	36.4	31.17	36.66		5.00	Same as plat 1.
12.....	33.2	28.33	40.75		7.41	Same as plat 2.
13.....	Fallow	31.58	Fallow		Fallow	Same as plat 3.
14.....	39.2	Corn	38.33		7.75	Same as plat 4.
15.....	Oats	29.25	Oats		Oats	Same as plat 5.
16.....	40.5	28.41	38.00		2.91	Same as plat 1.
17.....	36.5	29.92	39.66		6.33	Same as plat 2.
18.....	Fallow	25.33	Fallow		Fallow	Same as plat 3.
19.....	Corn	29.33	Corn		Corn	Same as plat 4.
20.....	43.8	Oats	39.66		6.66	Same as plat 5.
21.....	46.1	27.42	32.41		4.83	Same as plat 1.
22.....	41.4	29.50	43.91		7.91	Same as plat 2.
23.....	Fallow	21.42	Fallow		Fallow	Same as plat 3.
24.....	43.3	Corn	36.66		8.16	Same as plat 4.
25.....	Oats	29.17	Oats		Oats	Same as plat 5.

Plats 1 to 25 were planted to red Kaffir corn, wheat having failed.

TABULAR STATEMENT OF CROPS AND YIELD—CONCLUDED.

NO. OF PLAT.	RATE OF YIELD PER ACRE.				Rotation.
	1891.	1892.	1893.	1894.	
	Grain, bus.	Grain, bus.	Grain, bus.	Grain, bus.	
26.....	42.17	Corn	Oats	10.50	Wheat, corn, oats.
27.....	40.00	Corn	Oats	Beans	Wheat, corn, oats, beans.
28.....	41.54	Corn	Roots	Oats	Wheat, corn, roots, oats.
29.....	43.67	Corn	Oats	Grass	Wheat, corn, oats, grass 2 years.
30.....	42.83	Corn	Roots	Oats	Wheat, corn, roots, oats, grass 2 years.
31.....	Corn	Oats	9.33	Corn	Same as plat 26.
32.....	Corn	Oats	Beans	3.00	Same as plat 27.
33.....	Corn	Roots	Oats	16.16	Same as plat 28.
34.....	Corn	Oats	Grass	Grass	Same as plat 29.
35.....	Corn	Roots	Oats	Grass	Same as plat 30.
36.....	Oats	36.75	Corn	Oats	Same as plat 26.
37.....	Oats	Clover	17.75	Corn	Same as plat 27.
38.....	Roots	Oats	*.....	Corn	Same as plat 28.
39.....	Oats	Grass	Grass	10.41	Same as plat 29.
40.....	Roots	Oats	Grass	Grass	Same as plat 30.
41.....	42.67	Corn	Oats	19.16	Same as plat 26.
42.....	Clover	35.58	Corn	Oats	Same as plat 27.
43.....	Oats	37.41	Corn	Roots	Same as plat 28.
44.....	Grass	Grass	*.....	Corn	Same as plat 29.
45.....	Oats	Grass	Grass	9.25	Same as plat 30.
46.....	Corn	Oats	*.....	Corn	Same as plat 26.
47.....	41.42	Corn	Oats	Beans	Same as plat 27.
48.....	37.67	Corn	Roots	Oats	Same as plat 28.
49.....	Grass	22.66	Corn	Oats	Same as plat 29.
50.....	Grass	Grass	3.00	Corn	Same as plat 30.

\*Wheat failed.

The experiment has not yet progressed far enough to show any conclusive proofs in favor of any of the rotations adopted.

TEST OF VARIETIES.

Fifty-one varieties were grown last year, most of which have been grown here for four years. The table following presents the list, arranged in alphabetical order, and gives the yield of each and the average yield for the time grown here. The yields for the present year are based on averages of two plats, except when otherwise noted.

1894.—TEST OF VARIETIES.

NAME OF VARIETY.	Bearded or smooth .....	Average of two plats in 1894, bushels per acre.	Yield of 1893, bushels per acre.	Yield of 1892, bushels per acre.	Yield of 1891, bushels per acre.	Yield of 1890, bushels per acre.	Average for—
Andrews' No. 4.....	B.	13.05	20.88	49.13	50.31	.....	4 years, 33.35 bushels.
Arnold's Hybrid*.....	S.	11.83	14.67	40.25	38.05	23.16	5 years, 25.59 "
Bearded Monarch.....	B.	14.74	18.96	38.01	44.42	.....	4 years, 29.03 "
Big Frame.....	S.	18.16	21.34	44.83	30.68	.....	4 years, 28.75 "
Big English.....	S.	16.16	18.09	40.45	30.55	.....	4 years, 26.31 "
Bissell.....	B.	6.99	19.70	44.76	.....	.....	3 years, 23.31 "
Boyer.....	B.	10.08	20.36	34.22	50.08	.....	4 years, 28.68 "
Bullard's Velvet Chaff*.....	S.	3.33	8.37	46.94	23.86	.....	4 years, 20.75 "
Bulgarian.....	B.	10.00	10.71	.....	.....	.....	2 years, 10.35 "
Buckeye.....	S.	10.83	19.66	36.17	43.68	30.17	5 years, 28.10 "
California Blue Stem.....	B.	7.99	15.38	36.52	46.31	.....	4 years, 26.66 "
Canadian Wonder.....	B.	8.41	14.77	36.43	42.43	.....	4 years, 25.52 "
Currell †.....	S.	12.89	15.47	40.29	41.42	37.50	5 years, 29.51 "
Dallas.....	B.	7.83	22.79	40.45	40.49	.....	4 years, 27.89 "
Davis.....	S.	5.83	14.99	35.73	38.99	.....	4 years, 23.88 "
Deitz.....	B.	8.08	17.05	36.35	40.61	.....	4 years, 25.52 "
Diehl-Mediterranean.....	B.	9.66	12.52	42.91	37.96	.....	4 years, 25.76 "
Diehl-Egyptian.....	S.	8.66	18.47	30.60	46.17	.....	4 years, 25.97 "
Democrat.....	B.	14.49	21.40	37.19	44.27	.....	4 years, 29.33 "
Emporium.....	S.	14.99	17.05	42.15	44.61	.....	4 years, 29.70 "
Early Red Clawson.....	S.	12.83	16.90	.....	.....	.....	2 years, 14.86 "
Early May*.....	S.	6.33	17.09	41.59	.....	.....	3 years, 21.67 "
Extra Early Oakley*.....	S.	12.16	14.48	36.03	39.75	31.10	5 years, 26.70 "
Farquhar.....	S.	12.08	18.05	40.29	34.79	.....	4 years, 26.30 "
Fultz*.....	S.	17.00	17.45	35.32	41.61	.....	4 years, 27.84 "
Fulcaster.....	B.	14.49	18.79	35.60	39.99	.....	4 years, 27.21 "
German Emperor.....	S.	12.99	20.01	35.91	34.52	.....	4 years, 25.85 "
Gold Medal.....	S.	22.33	20.18	47.31	29.12	.....	4 years, 29.73 "
Hindustan.....	B.	10.41	21.57	42.63	37.85	.....	4 years, 28.11 "
Jones's Winter Fife.....	S.	21.33	18.92	.....	.....	.....	2 years, 20.12 "
Lancaster.....	B.	9.16	16.53	37.25	38.33	.....	4 years, 25.31 "
Lehigh.....	B.	7.75	18.44	45.11	35.41	.....	4 years, 26.67 "
Lehigh No. 6.....	B.	6.83	19.14	36.57	36.89	.....	4 years, 24.85 "
McCracken*.....	S.	12.00	15.07	38.32	41.24	.....	4 years, 26.65 "
McPherson*.....	S.	12.33	16.66	63.86	33.09	.....	4 years, 31.48 "
Oregon Club.....	S.	14.41	20.36	35.86	34.27	.....	4 years, 26.22 "

\* Yield of but one plat.  
 † Average of seven plats.

1894.—TEST OF VARIETIES.—CONCLUDED.

NAME OF VARIETY.	Bearded or smooth	Average of two plats in 1894, bushels per acre.	Yield of 1893, bushels per acre.	Yield of 1892, bushels per acre.	Yield of 1891, bushels per acre.	Yield of 1890, bushels per acre.	Average for—
Penquite's Velvet Chaff*	B.	11.50	18.84	41.69	41.34	.....	4 years, 28.34 bushels.
Ramsey*	S.	16.50	16.06	37.66	47.75	.....	4 years, 29.49 "
Red May*	S.	14.50	15.67	34.88	48.19	29.70	5 years, 28.58 "
Red Fultz	S.	12.24	22.27	33.00	45.54	.....	4 years, 28.26 "
Rudy	B.	20.33	14.36	.....	.....	.....	2 years, 17.34 "
Seneca Chief	B.	12.66	20.36	34.70	36.26	.....	4 years, 25.99 "
Tasmanian Red	B.	15.50	20.24	42.37	40.62	29.33	5 years, 29.61 "
Theiss	B.	17.83	22.44	42.90	25.98	.....	4 years, 27.28 "
Turkey †	B.	27.41	28.36	48.02	14.94	.....	4 years, 29.68 "
Valley	B.	17.00	21.75	39.30	41.83	.....	4 years, 29.97 "
Velvet Chaff	B.	9.33	18.68	39.05	35.30	.....	4 years, 25.59 "
White Track	S.	10.41	19.48	37.31	34.63	.....	4 years, 25.45 "
White Blue Stem	B.	11.99	23.14	35.79	43.59	.....	4 years, 28.62 "
Yellow Alabama*	S.	12.00	15.07	40.74	33.69	.....	4 years, 25.37 "
Zimmerman †	S.	14.92	13.09	49.62	34.65	34.33	5 years, 29.32 "

\*Yield of but one plat.  
† Average of seven plats.  
‡ Average of eight plats.

It will be noticed that the yield for this year is very low for all of them. This is owing to the winterkilling, as already explained. The Turkey stood the March freeze better than any other variety, it being somewhat tardy in its growth, and, in consequence, it shows the best yield, an average of eight plats giving a yield of nearly 27½ bushels to the acre. This variety is held in high esteem in many parts of the state, and it may properly be classed with our most productive wheats. This year's yield has reduced the averages of all varieties from the figures published in bulletin 40. Although the Currell suffered badly, we still consider this our best wheat, and shall continue to give it the leading place on the farm.

EXPERIMENTS ABANDONED.

The following are the experiments which were abandoned owing to the failure of the crop:

Hot-water treatment for stinking smut, methods of seeding, seeding at different dates, early and late plowing for wheat, influence of the quality of seed wheat on the yield, effects of compacting the seed bed, amount of seed wheat per acre, and effects of pasturing wheat.

STEER-FEEDING EXPERIMENT, III.

---

OUR third steer-feeding experiment was carried out the past winter. It was devised with a view to ascertain if there is any merit in the practice of soaking corn for fattening steers as against feeding it dry. Many of our best feeders claim to be able to produce more beef with a given amount of corn when it is soaked than when it is fed dry; and if so simple a process as soaking it in water can enhance the feeding value of corn, it is worth while to give the matter a careful study. For this purpose, 10 grade Shorthorn steers, 2½ years old, were bought and brought to the Station on October 30, 1893. As shown by the weights given hereafter, they were a remarkably even lot, thrifty and well grown for their age. All had been dehorned as yearlings. They were raised on Kansas farms here in the neighborhood, and had been collected by a farmer who intended to feed them for market. The cost price was \$3.60 per hundred weight.

These steers were fed outdoors, in two lots, separated only by a wire fence, each lot having access to a shed erected on the north side of the lot, open to the south but closed on the other three sides. Both lots were fed on shelled corn—that for lot I being soaked until it began to soften before it was fed, while that for lot II was fed dry. The corn for lot I was, of course, weighed before it was put to soak. In addition, they were fed roughness to the amount indicated in the table, consisting first of corn fodder and then successively Kaffir corn fodder, oat straw, millet hay, and prairie hay, both lots having the same kind of fodder at the same time.

To avoid the freezing of the soaked corn, which might interfere with their appetite and consequently with their gain, they were fed frequently and but little at a time, so that the wet corn could be eaten up before it would freeze; and although this precaution would not have been necessary except in cold weather, it was thought best to follow a uniform practice throughout the experiment. The grain feed of both lots was, therefore, fed five times daily—at 7 A. M., 9:30 A. M., 12 M., 3 P. M., and 6 P. M., one-fifth of the weight of the feed for that day being given each time. If any was left uneaten when the time came for the next feed, it was weighed and deducted on the record tables from the amount fed. To get an exact estimate of the weight of the soaked corn which thus ought to be deducted, given weights of corn were soaked for different periods and then weighed. We thus ascertained the weight of the water absorbed, which proved to be nearly uniform for the same length of time. The figures thus obtained enabled us to estimate what per cent. of the weight of the uneaten soaked corn should be deducted from the amount charged to the lot. It was not often, however,

that any of the grain fed remained uneaten, as we studiously sought to give them just what they would eat and no more. Beginning with the weight of 50 pounds of dry corn for each lot, this was gradually increased until a weight of 135 pounds was reached as the daily feed for each lot; but this proved to be too much, and was, therefore, soon reduced to 125 pounds, which they ate up clean without impairing their appetite, and yet they were fully satisfied. One hundred and twenty-five pounds, dry weight, was the daily feed per lot until February 16. It then became apparent that they could no longer eat this amount, and the weight was gradually reduced to suit their appetite. There was one exception made to this rate of feed, during the first half of January. We were trying to ascertain how much of the corn passed through each lot undigested, and during this period of 15 days the feed was reduced to 100 pounds dry corn for each lot, in order to see if the per cent. of undigested corn remained the same when less was fed than was necessary to satisfy the appetite. The result is shown in the tables which follow.

But although these features of the experiment are interesting and useful, the practical bearings of the experiment could not be fully brought out unless account was also taken of the value of the droppings for the production of pork, and for this purpose eight shoats, of an average weight of 88 pounds per head, were placed after each lot, and their gains noted. At first, when the steers were fed 125 pounds of dry corn per lot, the hogs found about all they could eat in the droppings; but as the steers ripened up, and hence ate less, and the hogs grew larger and demanded more, it became necessary to feed them some corn in addition, each lot receiving the same quantity, with a record of the weight. Steers and hogs alike had access to fresh water at their pleasure. No record could therefore be kept of the water drunk, as has been our custom when feeding in the barn, nor could we ascertain the amount eaten by each separate steer, as they all fed together. But a record was kept of the individual gains, both of steers and hogs. The steers were weighed every Tuesday morning before they were fed, and the hogs were weighed once a fortnight. Finally, a balance has been struck between the actual cost of the feed consumed by each lot and the value of the beef and pork produced by each lot.

With this general statement of the manner in which the experiment was conducted, we may pass on to the details as exhibited in the tables following. As stated, the 10 steers arrived at the Station October 30. They had been fed on pasture up to that time, and during the latter half of October they had in addition been fed a little corn. All 10 steers ran together in the yard for one week, during which time they collectively ate 575 pounds ear corn and 750 pounds corn fodder. On October 31, November 2, and November 4, each steer was weighed, and, based on the average of those three weights, they were divided into two lots of almost exactly like weights. On November 7 the experiment began, when they were again weighed, and the



weights of that date taken as the starting point. The hogs were not put after them until a week later, November 16, when they were in like manner weighed and divided into two lots. Table No. 1 gives the weight of each animal on the dates mentioned.

**TABLE No. 1.**  
**LOT I.—WEIGHT OF STEERS AND HOGS.**

STEERS.	Oct. 31.	Nov. 2.	Nov. 4.	Averages.
No. 1.....	1,064	1,093	1,100	1,085 $\frac{2}{3}$
No. 3.....	1,153	1,165	1,170	1,162 $\frac{2}{3}$
No. 4.....	920	929	957	935 $\frac{1}{3}$
No. 7.....	941	945	951	945 $\frac{2}{3}$
No. 9.....	1,036	1,037	1,045	1,039 $\frac{1}{3}$
Totals.....	5,114	5,169	5,223	5,168 $\frac{2}{3}$
Averages.....	1,022	1,033	1,044	1,033

**WEIGHT OF HOGS.**

Hog Nos.....	10	15	19	22	23	24	26	30	Total.
Weight November 16, pounds.....	100	83	81	94	76	100	80	90	704

**LOT II.—WEIGHT OF STEERS AND HOGS.**

STEERS.	Oct. 31.	Nov. 2.	Nov. 4.	Averages.
No. 2.....	1,065	1,078	1,101	1,081 $\frac{1}{4}$
No. 5.....	963	976	985	974 $\frac{2}{3}$
No. 6.....	1,020	1,030	1,033	1,027 $\frac{2}{3}$
No. 8.....	963	991	1,022	992
No. 10.....	1,070	1,097	1,107	1,091 $\frac{1}{2}$
Totals.....	5,081	5,172	5,248	5,167
Averages.....	1,016	1,034	1,049	1,033

**WEIGHT OF HOGS.**

Hog Nos.....	11	13	14	16	17	21	27	28	Total.
Weight November 16, pounds.....	88	78	81	101	88	78	96	95	705

Table No. 2 shows the weekly weight and gain of each steer and also the total gain and average daily gain for each steer for the whole period, 150 days.

TABLE No. 2.  
LOT I.—SOAKED SHELLED CORN. Weekly account of weight and gain, in pounds.

DATE, 1893-1894.	STEER 1.		STEER 3.		STEER 4.		STEER 7.		STEER 9.	
	Weight.	Gain.	Weight.	Gain.	Weight.	Gain.	Weight.	Gain.	Weight.	Gain.
November 7.....	1,100	.....	1,197	.....	946	.....	977	.....	1,083	.....
“ 14.....	1,145	45	1,229	32	954	8	989	12	1,070	-13
“ 21.....	1,179	34	1,257	28	960	6	1,006	17	1,081	11
“ 28.....	1,189	10	1,263	6	963	3	1,035	29	1,121	40
December 5.....	1,206	17	1,298	35	1,013	50	1,061	26	1,150	29
“ 12.....	1,206	0	1,320	22	1,050	37	1,088	27	1,133	-17
“ 19.....	1,231	25	1,289	-31	1,039	-11	1,091	3	1,160	27
“ 26.....	1,248	17	1,325	36	1,040	1	1,092	1	1,184	24
January 2.....	1,264	16	1,345	20	1,080	40	1,127	35	1,204	20
“ 9.....	1,276	12	1,370	25	1,073	-7	1,138	11	1,203	-1
“ 16.....	1,282	6	1,370	0	1,090	17	1,154	16	1,220	17
“ 23.....	1,300	18	1,407	37	1,120	30	1,157	3	1,258	38
“ 30.....	1,306	6	1,435	28	1,150	30	1,191	34	1,239	-19
February 6.....	1,345	39	1,475	40	1,182	32	1,187	-4	1,297	58
“ 13.....	1,350	5	1,455	-20	1,170	-12	1,197	10	1,272	-25
“ 20.....	1,366	16	1,450	-5	1,171	1	1,207	10	1,257	-15
“ 27.....	1,377	11	1,475	25	1,193	27	1,220	13	1,254	-3
March 6.....	1,378	1	1,520	45	1,225	27	1,239	19	1,296	42
“ 13.....	1,383	5	1,508	-12	1,222	-3	1,293	54	1,279	-17
“ 20.....	1,394	11	1,525	17	1,217	-5	1,285	-8	1,295	16
“ 27.....	1,409	15	1,540	15	1,227	10	1,283	-2	1,305	10
April 3.....	1,418	9	1,565	25	1,230	3	1,284	1	1,297	-8
6.....	1,432	14	1,558	-7	1,292	62	1,305	21	1,348	51
Total gain.....	.....	332	.....	361	.....	346	.....	323	.....	265
Average daily gain.....	.....	2.21	.....	2.40	.....	2.30	.....	2.18	.....	1.76

Total gain of lot, 1,632 pounds.

Average daily gain, 10.88 pounds.

Average daily gain per head, 2.176 pounds.

TABLE No. 2—CONCLUDED.  
LOT II.—DRY SHELLED CORN. Weekly account of weight and gain, in pounds.

DATE, 1893-1894.	STEER 2.		STEER 5.		STEER 6.		STEER 8.		STEER 10.	
	Weight.	Gain.	Weight.	Gain.	Weight.	Gain.	Weight.	Gain.	Weight.	Gain.
November 7.....	1,091	.....	1,013	.....	1,050	.....	1,046	.....	1,110	.....
“ 14.....	1,113	22	1,034	21	1,057	7	1,051	5	1,135	25
“ 21.....	1,130	17	1,047	13	1,083	26	1,059	8	1,145	10
“ 28.....	1,133	3	1,050	3	1,104	21	1,079	20	1,144	-1
December 5.....	1,159	26	1,070	20	1,118	14	1,120	41	1,174	30
“ 12.....	1,208	49	1,104	34	1,120	2	1,130	10	1,171	-3
“ 19.....	1,236	28	1,120	16	1,143	23	1,165	35	1,204	33
“ 26.....	1,216	-20	1,140	20	1,132	-11	1,178	13	1,210	6
January 2.....	1,226	10	1,149	9	1,149	17	1,182	4	1,217	7
“ 9.....	1,256	30	1,164	15	1,181	32	1,197	15	1,255	38
“ 16.....	1,249	-7	1,179	15	1,185	4	1,214	17	1,260	5
“ 23.....	1,295	46	1,205	26	1,196	11	1,234	20	1,270	10
“ 30.....	1,311	16	1,207	2	1,206	10	1,233	-1	1,277	7
February 6.....	1,353	47	1,226	19	1,244	38	1,287	54	1,307	30
“ 13.....	1,350	-8	1,232	6	1,235	-9	1,280	-7	1,255	-52
“ 20.....	1,361	11	1,230	-2	1,223	-12	1,281	1	1,239	-16
“ 27.....	1,371	10.	1,241	11	1,246	23	1,288	7	1,230	41
March 6.....	1,304	-67	1,262	21	1,256	10	1,285	-3	1,315	35
“ 13.....	1,337	33	1,285	23	1,269	13	1,273	-12	1,307	-8
“ 20.....	1,385	48	1,287	2	1,275	6	1,292	19	1,312	5
“ 27.....	1,395	10	1,300	13	1,290	15	1,314	22	1,315	3
April 3.....	1,390	-5	1,332	32	1,291	1	1,323	9	1,359	44
“ 6.....	1,395	5	1,335	3	1,330	39	1,347	24	1,371	12
Total gain.....		304		322		280		301		261
Average daily gain.....		2.02		2.14		1.86		2.00		1.74

Total gain of lot, 1,468 pounds

Average daily gain, 9.78 pounds.

Average daily gain per head, 1.957 pounds.

As will be noticed, the steers made very good gains and most of them with considerable regularity. On February 11 a very severe snowstorm set in, which was followed by excessively cold weather for several days. This storm made the steers feel very uncomfortable, and for two weeks after they did not show satisfactory gains. Exposure to cold and wet not only affects the animals for the time being, but its effects are felt for days and, sometimes, weeks after the storm is over and pleasant weather has again set in. This was the severest storm of the season, and the only one which had any decided effects on the steers. A cold wave from the 21st to the 27th of January, when, for several days the temperature was below zero, did not affect them in the least, but the weather was dry and clear.

Table No. 3 shows the amount and value of feed eaten by each lot weekly, the gain made from this feed, and the cost of the gain. It will be seen from this table that, although lot II ate 457 pounds of corn and 213 pounds of fodder more than lot I, they, nevertheless, gained 164 pounds less than lot I, and the gain they did make cost three-fourths of a cent per pound more than the gain of lot I. This difference, I think, can fairly be ascribed to the soaking of the corn fed to lot I.

TABLE No. 3.  
LOT I.—WEEKLY ACCOUNT OF FEED AND COST OF GAIN.

DATE, 1893-1894.	SOAKED SHELLED CORN.		FODDER.		Gain of lot, pounds .....	Average daily gain of lot, pounds .. .....	Average daily gain per head, pounds .. . . .	Cost per pound of gain, cents.
	Dry weight, pounds.	Cost, 50 cents per cwt.	Pounds.	Cost.				
November 7.....								
“ 14.....	420	\$2.100	*874	\$1.092	84	12.00	2.40	3.80
“ 21.....	610	3.050	839	1.048	96	13.71	2.74	4.26
“ 28.....	735	3.675	845	1.056	88	12.57	2.51	5.37
December 5.....	850	4.250	†579	.723	157	22.42	4.48	3.16
“ 12.....	910½	4.552	446	.557	69	9.85	1.97	7.40
“ 19.....	419	2.095	489	.611	13	1.85	.37	20.81
“ 26.....	820	4.100	425	.531	79	11.28	2.25	5.86
January 2.....	825	4.125	328	.410	131	18.71	3.74	3.46
“ 9.....	700	3.500	288	.360	40	5.71	1.14	9.65
“ 16.....	700	3.500	306	.382	56	8.00	1.60	6.93
“ 23.....	805	4.025	355	.443	126	18.00	3.60	3.54
“ 30.....	865	4.325	325	.406	79	11.28	2.25	5.98
February 6.....	875	4.375	299	.373	165	23.57	4.71	2.87
“ 13.....	687	3.435	‡273	.341	-42	-6.00	-1.20	‡.....
“ 20.....	784	3.920	‡214	.267	7	1.00	.20	59.81
“ 27.....	844	4.220	220	.275	73	10.42	2.08	6.16
March 6.....	759	3.795	227	.283	134	19.14	3.82	3.04
“ 13.....	805	4.025	‡224	.560	27	3.85	.77	16.96
“ 20.....	654	3.270	207	.517	31	4.42	.88	12.21
“ 27.....	687	3.435	221	.552	48	6.85	1.37	8.30
April 3.....	684	3.420	223	.557	30	4.23	.85	13.25
“ 6.....	349	1.745	133	.332	141	20.14	4.02	1.47
Totals.....	15,787½	\$78.937	8,340	\$11.676				

\*Corn fodder from November 7 to December 5.  
†Kaffir corn fodder, December 5 to February 13.  
‡Oat straw, February 13 to 20.

‡ Millet hay, February 20 to March 13.  
‡ Prairie hay, March 13 to finish.  
‡ All loss.

Total food eaten (shelled corn, 15,787.5; corn fodder, 2,558; Kaffir corn fodder, 3,840; oat straw, 273; millet, 661; prairie hay, 1,008), 24,127.5 pounds. Average food eaten per head (shelled corn, 3,157.5; corn fodder, 511.6; Kaffir corn fodder, 768; oat straw, 54.6; millet, 132.2; prairie hay, 201.6), 4,825.5 pounds.

Total gain, 150 days, 1,632 pounds.

Average gain per head, 326.4 pounds.

Average daily gain of lot, 10.88 pounds.

Average daily gain per head, 2.176 pounds.

Total cost of feed, \$90.613.

Average cost of feed per head, \$18.122.

Average cost per pound of gain, 5.55 cents.

Food eaten per pound of gain, 14.78 pounds.

TABLE No. 3—CONCLUDED.  
LOT II.—WEEKLY ACCOUNT OF FEED AND COST OF GAIN.

DATE, 1893-1894.	DRY SHELLED CORN.		FODDER.		Gain of lot, pounds.....	Average daily gain of lot, pounds.....	Average daily gain per head, pounds.....	Cost per pound of gain, cents..
	Pounds.	Cost, 50 cents per cwt.	Pounds.	Cost.				
November 7.....								
“ 14.....	420	\$2.100	*874	\$1.092	80	11.42	2.28	3.99
“ 21.....	610	3.050	839	1.048	74	10.57	2.11	5.53
“ 28.....	735	3.675	854	1.067	46	6.57	1.31	10.30
December 5.....	850	4.250	†669	.836	131	18.71	3.54	3.88
“ 12.....	927½	4.637	516	.645	92	13.14	2.62	5.74
“ 19.....	810	4.050	378	.472	135	19.28	3.85	3.35
“ 26.....	875	4.375	307	.383	8	1.14	.22	59.47
January 2.....	825	4.125	297	.371	47	6.71	1.34	9.56
“ 9.....	700	3.500	303	.378	130	18.57	3.71	2.98
“ 16.....	700	3.500	275	.343	34	4.85	.97	11.30
“ 23.....	805	4.025	335	.418	113	16.14	3.22	3.93
“ 30.....	865	4.325	309	.386	34	4.85	.97	13.85
February 6.....	875	4.375	278	.347	188	26.35	5.37	2.51
“ 13.....	700	3.500	‡273	.341	-70	-10.00	-2.00	¶.....
“ 20.....	875	4.375	‡235	.294	-18	-2.57	-.51	¶.....
“ 27.....	696	3.480	218	.272	92	13.14	2.62	4.07
March 6.....	759	3.795	207	.258	-4	-.57	-.11	¶.....
“ 13.....	782	3.910	¶190	.475	49	7.00	1.40	8.94
“ 20.....	660	3.300	178	.445	80	11.42	2.28	4.68
“ 27.....	672	3.360	230	.575	68	9.00	1.80	6.24
April 3.....	735	3.675	226	.565	81	11.57	2.31	5.23
“ 6.....	368	1.840	136	.340	33	11.85	2.37	2.62
Totals.....	16,244.5	\$81.222	8,127	\$11.351				

\* Corn fodder from November 7 to December 5.      ‡ Millet hay, February 20 to March 13.  
 † Kaffir corn fodder, December 5 to February 13.    ¶ Prairie hay, March 13 to finish.  
 ‡ Oat straw, February 13 to February 20.            ¶ All loss.

Total food eaten (shelled corn, 16,244.5; corn fodder, 2,567; Kaffir corn fodder, 3,667; oat straw, 273; millet, 660; prairie hay, 960), 24,371.5 pounds. Average food eaten per head (shelled corn, 3,248.9; corn fodder, 513.4; Kaffir corn fodder, 733.4; oat straw, 54.6; millet, 132; prairie hay, 192), 4,874.3 pounds.

Total gain, 150 days, 1,468 pounds.  
 Average gain per head, 293.6 pounds.  
 Average daily gain of lot, 9.78 pounds.  
 Average daily gain per head, 1.957 pounds.  
 Total cost of feed, \$92.57.  
 Average cost of feed per head, \$18.51.  
 Average cost per pound of gain, 6.30 cents.  
 Food eaten per pound of gain, 16.60 pounds.

But the question does not end here; the amount of pork produced after each lot must also be taken into account. The gains of the hogs, together with the amount of feed given them in addition to what they found in the droppings, are detailed in table 4, which follows:

TABLE No. 4.  
LOT I.—HOGS FOLLOWING (soaked corn). Weights, Gains, and Feed Eaten.

DATE, 1893-1894.	Extra corn eaten, lbs.	PIG 10.		PIG 15.		PIG 19.		PIG 22.		PIG 23.		PIG 24.		PIG 26.		PIG 30.		TOTALS.		
		Weight, lbs.	Gain, lbs.	Weight, lbs.	Gain, lbs.	Weight, lbs.	Gain, lbs.	Weight, lbs.	Gain, lbs.	Weight, lbs.	Gain, lbs.	Weight, lbs.	Gain, lbs.	Weight, lbs.	Gain, lbs.	Weight, lbs.	Gain, lbs.	Weight, lbs.	Gain, lbs.	
November 16 .....	...	100	.....	83	.....	81	.....	91	.....	76	.....	100	.....	80	.....	90	.....	704	.....	
December 1 .....	..	112	12	97	14	92	11	104	10	104	28	87	-13	94	14	115	25	805	101	
December 15. ....	.....	110	-2	96	-1	91	-1	101	-3	106	2	86	-1	92	-2	99	-16	781	-24	
December 30. ...		240	123	13	108	12	110	19	113	12	120	14	98	12	102	10	113	14	887	106
January 13 .....	..	152	128	5	114	6	119	9	102	-11	123	3	102	4	108	6	113	0	909	22
January 27. ....	.....	112	139	11	122	8	127	8	115	13	135	12	108	6	113	5	122	9	981	72
February 10. .		112	150	11	128	6	137	10	125	10	140	5	113	5	117	4	131	9	1,041	60
February 24. ...	.....	112	164	14	131	3	147	10	132	7	146	6	120	7	127	10	138	7	1,105	64
March 10.....	.....	168	179	15	145	14	161	14	154	22	154	8	129	9	143	16	155	17	1,220	115
March 24 .		168	186	7	154	9	169	8	160	6	166	12	135	6	150	7	163	8	1,283	63
April 6 ..	..	208	193	7	158	4	175	6	169	9	172	6	141	6	163	13	168	5	1,339	56
Totals. ....	.....	1,272	.....	93	.....	75	.....	94	.....	75	.....	96	.....	41	.....	83	...	78	.....	635

Total gain of lot, 635 pounds.  
Average gain per head, 79.3 pounds.  
Average daily gain of lot, 4.5 pounds.

Average daily gain per head, .56 pound.  
Cost of extra feed eaten, \$6.36.  
Cost per pound of gain, 1 cent.

TABLE No. 4.—CONCLUDED.  
LOT II.—HOGS FOLLOWING (dry corn). Weights, Gains, and Feed Eaten.

DATE, 1893-1894.	Extra corn eaten, lbs.	PIG 11.		PIG 13.		PIG 14.		PIG 16.		PIG 17.		PIG 21.		PIG 27.		PIG 28.		TOTALS.	
		Weight, lbs.	Gain, lbs.	Weight, lbs.	Gain, lbs.	Weight, lbs.	Gain, lbs.	Weight, lbs.	Gain, lbs.	Weight, lbs.	Gain, lbs.	Weight, lbs.	Gain, lbs.	Weight, lbs.	Gain, lbs.	Weight, lbs.	Gain, lbs.	Weight, lbs.	Gain, lbs.
November 16. . . .	88	.....	78	.....	81	.....	101	.....	88	.....	78	.....	96	.....	95	.....	705	.....	
December 1... ..	106	18	84	6	90	9	121	20	102	14	94	16	113	17	105	10	815	110	
December 15... ..	109	3	83	-1	83	-7	136	15	108	6	101	7	112	-1	110	5	842	27	
December 30... ..	240	121	12	86	3	83	0	150	14	115	7	106	5	117	5	126	16	904	62
January 13. . . . .	152	128	7	91	5	89	6	162	12	119	4	108	2	119	2	135	9	951	47
January 27. . . . .	112	139	11	97	6	100	11	165	3	124	5	113	5	131	12	146	11	1,015	64
February 10 . . . .	112	150	11	111	-14	108	8	133	18	133	9	120	7	138	7	160	14	1,103	88
February 24. . . .	112	159	9	121	10	115	7	188	5	140	7	120	0	144	6	166	6	1,153	50
March 10. . . . .	168	177	18	148	27	135	20	201	13	158	18	129	9	162	18	182	16	1,292	139
March 24. . . . .	168	187	10	156	8	153	18	209	8	165	7	130	1	173	11	190	8	1,363	71
April 6. .... .	208	198	11	170	14	162	9	222	13	176	11	139	9	184	11	201	11	1,452	89
Totals. . . . .	1,272	.....	110	.....	92	.....	81	.....	121	.....	88	.....	61	.....	88	.....	106	.....	747

Total gain of lot, 747 pounds.  
Average gain per head, 93.3 pounds.  
Average daily gain of lot, 5.29 pounds.

Average daily gain per head, .66 pound.  
Cost of extra feed eaten, \$6.36.  
Cost per pound of gain, .85 cent.



These two lots of hogs present an interesting contrast. All were thrifty young hogs. The two lots weighed alike within one pound on November 16, when they were put behind the steers, and they were placed under exactly the same conditions; yet the hogs following lot II gained 112 pounds more than those following lot I in 141 days. Since they were fed exactly the same amount of extra corn, this difference must be ascribed to the difference in feed of the two lots of steers, and the following figures afford an interesting explanation:

TABLE No. 5.  
 SHOWING WEIGHT OF CORN FED TO STEERS, AND WEIGHT OF CORN IN DROPPINGS.

DATE, 1893-1894.	LOT I.				LOT II.			
	Daily feed of corn, pounds.	Weight of droppings, pounds.	Wet weight of corn in droppings, pounds.	Estimated dry weight of corn in droppings, pounds.	Daily feed of corn, pounds.	Weight of droppings, pounds.	Wet weight of corn in droppings, pounds.	Estimated dry weight of corn in droppings, pounds.
Dec. 23.....	115	185	28.50	11.65	125	195	37.00	16.53
“ 24.....	120	200	32.50	13.28	125	195	34.50	15.41
“ 25.....	125	203	35.00	14.30	125	181	33.00	14.74
“ 26.....	125	209	32.00	13.08	125	221	44.00	19.65
“ 27.....	125	182	30.00	12.26	125	162	32.50	14.52
“ 28.....	125	181	29.00	11.85	125	182	36.00	16.08
“ 29.....	125	162	23.00	9.40	125	162	37.00	16.53
“ 30.....	125	210	30.25	12.86	125	179	40.00	17.86
“ 31.....	100	142	22.25	9.09	100	176	42.00	18.76
Jan. 1.....	100	137	20.25	8.28	100	167	38.00	16.97
“ 2.....	100	146	21.50	8.79	100	136	29.00	12.95
“ 3.....	100	166	24.00	9.81	100	180	37.25	16.64
“ 4.....	100	167	25.75	10.52	100	170	37.25	16.64
“ 5.....	100	188	27.50	11.24	100	202	35.50	15.86
“ 6.....	100	193	27.50	11.24	100	175	37.00	16.53
“ 7.....	100	168	25.00	10.22	100	152	34.00	15.19
“ 8.....	100	208	31.00	12.67	100	203	38.50	17.20
“ 9.....	100	163	26.50	10.83	100	203	46.00	20.54
“ 10.....	100	200	34.50	14.10	100	199	46.50	20.77
“ 11.....	100	187	28.00	11.44	100	177	39.00	17.42
“ 12.....	100	207	32.00	13.08	100	181	43.00	19.20
“ 13.....	100	198	31.50	12.87	100	178.5	36.50	16.30
“ 14.....	100	165	29.00	11.85	100	124	26.00	14.39
“ 15.....	100	240	42.00	17.16	100	210	48.50	21.66
“ 16.....	115	178	33.00	13.49	115	193	40.50	18.09
“ 17.....	115	199	39.00	15.94	115	190	44.00	19.65
“ 18.....	115	197	36.75	15.02	115	201	45.00	20.10
“ 19.....	115	136	32.33	13.21	115	285	44.50	19.87
Totals.....	3,045	5,117	829.58	339.03	3,060	5,179.5	1,082.00	486.05
Av. per head...	609	1,023.40	165.91	67.80	612	1,035.9	216.40	97.21
Daily av.....	21.75	36.55	5.92	2.42	21.85	36.99	7.73	3.47

It will be seen from table 5 that lot II passed more corn in the droppings than lot I. In other words, the steers fed on soaked corn digested more of their feed and discharged a smaller per cent. of corn undigested in the droppings than did lot II, fed on dry corn. During the 28 days indicated in the table, from December 23 to January 19, the droppings were gathered from both lots of steers, and the corn they contained was carefully washed out and weighed. This revealed the fact that the steers in lot I discharged 339 pounds of corn out of the 3,045 pounds which they consumed in that period, or 11 per cent. of the amount they ate. On the other hand, lot II discharged 486 pounds of the 3,060 pounds of corn they consumed in the same time, or nearly 16 per cent. (15.8 per cent.) of the corn fed. Now, applying these ratios for the entire period, we find that the hogs following lot II ate 890 pounds more corn than lot I, which is amply sufficient to account for the gain of 112 pounds more than the gain of lot I.

The table shows the daily records of the corn fed the steers, the weight of the droppings, and the weight of the wet corn after it had been washed and the water drained off. It was impracticable to dry all the corn in order to obtain the dry weight. We, therefore, dried several samples, and, from the average amount of water these contained, the dry weight of the corn washed from the droppings has been estimated. These weights show that the corn washed from the droppings from lot I contained an average of 59.15 per cent. of water, while the washed corn from lot II contained 55.35 per cent. of water. This difference in the per cent. of moisture is due to the soaking.

WATER ABSORBED BY CORN IN SOAKING..

Table 6 shows the amount of water absorbed by the corn in different periods of time. Thus, 100 pounds of air-dried corn, in a bag immersed in water for a moment and then taken out and allowed to drain thoroughly, weighed 106.25 pounds. After soaking for the number of hours here given, the weight increased gradually until it absorbed nearly 50 per cent. of its weight.

TABLE No. 6.

Hours soaked.....	12	24	36	48	72	96	120	144	167	190
Weight, lbs.....	121.25	129.25	130.90	135.15	138.50	141.60	143.80	144.50	146.60	147.50

It was further found, by soaking the corn washed from the droppings, that corn from lot I did not increase in weight from soaking, whereas the corn from lot II increased perceptibly by soaking, showing that the kernels had not been fully saturated by their passage through the alimentary canal, and hence the difference in the amount of water the two samples lost by drying. They were simply air dried by exposure to the sun.

## HOW LONG DOES IT TAKE CORN TO PASS THROUGH A STEER?

In connection with this subject, it is of interest to know how long it takes a feed of corn to pass through the alimentary canal. To this end, each lot was fed with 50 pounds of red corn during the three last feeds of January 15, namely, at 12 M., 3 P.M., and 6 P.M. Previous to this, and also immediately after, they were fed exclusively upon white corn. By 9 A. M. on the 16th it was found that the red kernels, fed the day before, began to appear in the manure. They appeared in increasing numbers until the maximum was apparently reached on the afternoon of the 17th. They then began to decrease, until on the 19th only a few kernels of the red corn were found in the washings from each lot.

## SALE OF STEERS AND HOGS

Both steers and hogs were sold April 7 to Swift & Co., of Kansas City. Steers in lot I shrank in shipment an average of 45 pounds a head, and the hogs following this lot shrank an average of 6 pounds a head. The steers in lot II shrank an average of 49.5 pounds per head, while the hogs of that lot shrank only 5.3 pounds per head.

The two lots were sold on their merits, W. A. Seely, buyer for Swift & Co., being the purchaser. He is an experienced buyer and noticed the slightest difference in the stock before him. He priced the five steers of lot I at 4 cents per pound, while lot II he judged to be worth 3.75 cents a pound. These prices, it will be noticed, are entirely too low to yield any profit to the feeder. The profit in this case is, however, a side issue. The main fact to note is, how the two lots compare in the market as a result of the feed given them. As has been pointed out in the foregoing tables, lot I gained a total of 1,632 pounds, while lot II gained but 1,468 pounds, making a difference of 164 pounds in favor of lot I. This put lot I in somewhat better condition than lot II, and, as noted, these steers brought a quarter of a cent more per pound than those in lot II.

As already noted, the hogs in lot II gained, on the other hand, 112 pounds more than those following lot I. This gain, however, was not sufficient to make any appreciable difference in their appearance, and they all sold for the same price, \$4.65 per hundred weight.

Both steers and hogs were bought at too high figures for profitable feeding, but we were obliged to pay these prices in order to get an even lot, which was an essential feature of the experiment. On the other hand, the market was very low when the experiment closed. Every feeder knows that it is next to impossible to make money at feeding when fat cattle are worth only 4 cents, or less, a pound. As a result, both lots came out on the wrong side of the ledger. The total loss on steers and hogs in lot I was \$24.30, while the total loss on lot II was \$44.30. This leaves a difference in favor of soaking corn of \$20. It will be noticed that the hogs following lot I made a loss of \$4.70, whereas the hogs following lot II covered ex-

penses, with 80 cents to spare. The difference is due to the better gain made by the hogs following lot II, the cause of which has already been explained.

FINANCIAL DATA.

Lot I—*Dr.*

To five steers, first cost.....	\$185 40
To 15,787.5 pounds shelled corn @ 50 cents per cwt .....	78 93
To 8,340 pounds fodder.....	11. 67
To freight and expense of sale.....	12 00
Total.....	<u>\$288 00</u>

*Cr.*

By five steers, 6,710 pounds (weight at Kansas City), @ 4 cents, ..	<u>268 40</u>	
Loss on steers.....		\$19 60

HOGS FOLLOWING LOT I—*Dr.*

To eight hogs, 704 pounds, @ 8 cents.....	\$56 32
To 1,272 pounds corn @ 50 cents per cwt.....	6 36
To freight and expense of sale .....	2 00
Total.....	<u>\$64 68</u>

*Cr.*

By eight hogs, 1,290 pounds (weight at Kansas City), @ 4.65 cents, ..	<u>\$59 98</u>	
Loss on hogs.....		<u>4 70</u>
Balance against lot I, steers and hogs.....		<u>\$24 30</u>

Lot II—*Dr.*

To five steers, first cost.....	\$185 40
To 16,244.5 pounds corn @ 50 cents per cwt.....	81 22
To 8,127 pounds fodder.....	11. 35
To freight and expense of sale.....	12 00
Total.....	<u>\$289 97</u>

*Cr.*

By five steers, 6,530 pounds (weight at Kansas City), @ 3.75 cents, ..	<u>244 87</u>	
Loss on steers.....		\$45 10

HOGS FOLLOWING LOT II—*Dr.*

To eight hogs, 705 pounds, @ 8 cents.....	\$56 40
To 1,272 pounds corn @ 50 cents per cwt.....	6 36
To freight and expense of sale.....	2 00
Total.....	<u>\$64 76</u>

*Cr.*

By eight hogs, 1,410 pounds (weight at Kansas City), @ 4.65 cents, ..	<u>65 56</u>	
Gain on hogs.....		<u>80</u>
Balance against lot II, steers and hogs.....		<u>\$44 30</u>

## WILL IT PAY TO SOAK CORN?

Whether the answer to this question will be a *yes* or a *no* will depend upon circumstances. The foregoing facts prove that steers get more out of soaked corn than they do of dry corn, and that the reverse is true of the hogs which follow. It will not pay to soak corn whenever it is necessary to take the precaution against freezing that we were obliged to take in this experiment, nor is it likely to pay if it involves more extra labor than can be done by the regular force in charge of the cattle. But when a feeder is so situated that the corn can be soaked at slight expense, this experiment would indicate that it is a profitable practice, at least during mild weather.

In conclusion, the facts brought to light by this experiment may be summarized as follows:

1. The five steers fed on soaked shelled corn gained a total of 1,632 pounds in 150 days on 282 bushels of corn, while the five steers fed on dry corn gained a total of only 1,468 pounds on 290 bushels of corn.
2. The steers fed on soaked corn, owing to their better condition, brought a higher price in the market than the steers fed on dry corn. Balancing both cost of feed and market value of the two lots, there is a difference of \$25.50 in the favor of the soaking of the corn.
3. The hogs following the steers fed on soaked corn made a total gain of 635 pounds, while the hogs following the dry-corn steers made a total gain of 747 pounds. This makes a difference of 112 pounds gain in favor of the dry corn, and the market value showed a difference of \$5.58 in favor of the hogs following the dry-corn steers.
4. Based on the foregoing figures, it will pay to soak corn if it can be soaked for 6 cents, or less, a bushel.