

EFFECTS OF CATTLE GRUB TREATMENT

F. W. Bell and George A. Dean

Five heifers in each of four lots of 10 head each were treated with rotenone dust December 11, 1945. The other five heifers in each lot received no treatment for grubs. At the time of treatment a careful count was made of the number of grubs on each of the 10 heifers in each lot. Thus the trial furnishes data on 20 heifers treated for grubs and 20 which were not treated, with all factors of feeding and management being the same in each lot.

Another check for evidence of any grubs which might not have been killed by the first treatment was made January 9, 1946. On this date all the heifers previously treated which showed any grubs not destroyed were dusted again with rotenone dust.

Each lot of heifers was marketed when they averaged about 850 pounds in weight. Since the feeding trial was to determine the results of different quantities of grain fed to finish the cattle, the dates of marketing the four lots ranged from May 31, 1946 to July 30, 1946.

Data Secured at Time of Marketing

The cattle were slaughtered at the Morrell Packing Company, Topeka, Kansas. The carcasses were examined at the time of slaughter, and again after chilling for any evidence of grub damage to the meat. No evidence of any such damage was found in any of the 40 carcasses, there being no difference in this respect between the carcasses of the cattle treated to destroy grubs, and those which were not treated.

However, a number of the carcasses of the treated cattle showed residues of grubs which had been killed and not completely absorbed. As would be expected, no such residues were found on the carcasses of untreated cattle, since all the grubs had emerged. The remains of dead grubs on the carcasses of treated cattle were not imbedded in the flesh, and washed off readily when the carcasses were washed before going into the cooler.

Evidence of Damage to Hides

The hides of the cattle treated for grubs showed several grub remains in the fatty tissue adhering to the hide. It was stated at the packing plant that these did not in any way affect the value of the hides.

Each of the 40 hides immediately after being removed from the carcass was laid on a table, hair side down, and examined carefully to determine if it showed damage from grubs. A count was made of all scars formed where grubs had punctured the hide. Then the customary check made by hide buyers was applied, which consists of trying to force a sharp pointed wooden skewer through the hide wherever it appears there may be a weak spot remaining from a grub puncture. If the skewer can be forced through it is counted a hole - if the skewer breaks in the attempt no hole can be claimed. In the hide trade, those hides which have five or more holes are classified as grubby and quoted at a

price about $1\frac{1}{2}$ cents lower per pound.

Of the 40 hides examined, eight were found to have five or more holes. These eight hides all were from cattle treated to destroy grubs - no hides from the untreated cattle having enough holes to be classified as grubby. The explanation of more holes being found in the hides from treated cattle is that the dead grubs under the hide acted as an irritant and thus retarded normal healing of the punctures. In the untreated cattle, grubs had emerged at the normal time and the holes had healed before the cattle were marketed.

Effect of Grubs on Rate of Gain

The possible effect of grubs on rate of gain is another question concerning which information was sought. In this trial the cattle treated to destroy grubs made an average gain during the feeding period of 344.25 pounds, while the cattle which received no treatment for grubs made an average gain in weight of 344.75 pounds.

Carcass Grades

All 40 carcasses were graded by a Government grader, and graded either choice or good. The 20 cattle treated for grubs yielded 7 choice and 13 good carcasses. The 20 cattle not treated yielded 8 choice and 12 good carcasses.

Results of trials during 1945-46 to determine the effects of treatment for grubs are summarized in the following table:

	<u>Treated</u>	<u>Not Treated</u>
Number of heifers	20	20
Average initial weight	521.00 lbs.	509.25 lbs.
Average final weight	865.25 "	854.00 "
Average total gain	344.25 "	344.75 "
Average number of grubs-December 11, 1946	17.3	8.7
Average number of scars in hides	19.7	8.3
Average number of holes in hides	3.2	0.25
Average weight of carcasses	493.75 lbs.	478.85 lbs.
Average dressing percent	57.91	57.16
Number of carcasses graded choice	7	8
Number of carcasses graded good	13	12

Conclusions

Since grubs normally emerge from cattle during late winter and early spring, the greatest damage to hides and carcasses would occur before, or at the time when the grubs emerge.

Since no carcass damage due to grub infestation was evident in the first lot of 10 heifers marketed May 31, it is indicated that treatment for grubs does not affect the carcass value of cattle marketed after that date.

Of the 40 hides, eight were classified as grubby, since they had five or

The evidence of this test should not be taken as an argument against treatment to control cattle grubs, but as information relevant to grub control. The greatest damage to carcasses and hides occurs before and at the time the grubs emerge. The growth of grubs results in damage to carcasses which requires trimming of some meat from carcasses of infested cattle which are marketed in the winter and early spring. There is also considerable damage to hides from the time grubs make the puncture through which they later emerge, and until sufficient time has elapsed after they emerge for the hole to heal.

All of these hides were from cattle treated with rotenone dust. Treatment for grubs had no effect on gains in weight, each group of 20 heifers making the same gain.

INFLUENCE OF WINTER RATIONS FED TO STEER CALVES
UPON RETURNS FROM WINTERING AND GRAZING

A. D. Weber, F. W. Bell, and A. G. Pickett

Phase I - Wintering, January 17, 1946 to April 27, 1947 - 100 days.

Phase II - Grazing, April 27, 1946 to October 12, 1946 - 168 days.

1-Lot number	1	2	3	4	5
2-Number steers in lot	9	9	10	10	10
3-Wintering ration:	Pounds	Pounds	Pounds	Pounds	Pounds
Silage	31	---	---	15	23
Prairie hay	--	14	14	7	4
Cottonseed meal	1	1	2	1	1
4-Weight per steer:					
January 17, 1946	522	515	514	514	514
April 27, 1946	619	622	645	619	613
October 12, 1946	861	862	857	849	861
5-Gain per steer:					
Phase I - Wintering	97	107	131	105	99
Phase II - Grazing	242	240	212	230	248
Total - Phases I and II	339	347	343	335	347

OBSERVATIONS

Poor quality silage consisting of a mixture of normal Atlas sorgo and mature, volunteer Black Amber from which most of the grain had shattered, and bright, fairly green high-quality prairie hay, were fed in this test. The cottonseed meal was guaranteed to contain 41 percent protein.

Steers which made the largest winter gains tended to make the smallest pasture gains and as a consequence differences in total gains (wintering plus grazing) were of doubtful significance.

FATTENING HEIFERS FOR THE SUMMER MARKET

Experiment II - 1945-46

A. D. Weber and F. W. Bell

Phase I - Wintering, November 29, 1945 to April 18, 1946 - 140 days.

1-Lot number	1	2	3	4
2-Number of heifers in lot	10	10	10	10
3-Level of grain feeding	Full feed	$\frac{1}{2}$ feed	$\frac{1}{4}$ feed	No grain
4-Average daily ration:				
Ground shelled corn	10.06	5.04	2.52	
Atlas sorgo silage	16.75	25.94	29.65	31.66
Cottonseed meal	1.44	1.44	1.44	1.44
Ground limestone	0.10	0.10	0.10	0.10
5-Average initial weight	514	517	514	516
6-Average final weight	788	738	708	671
7-Average gain	274	221	194	155
8-Average daily gain	1.96	1.58	1.39	1.11
9-Corn consumed per heifer - bushels	25.15	12.59	6.30	--

Phase II - Full feeding, April 18, 1946 until marketed.

10-Lot number	1	2	3	4
11-Number of days in Phase II	42	75	75	100
12-Average daily ration:				
Ground shelled corn	13.37	12.85	11.69	11.89
Cottonseed meal	1.25	1.15	1.15	1.11
Atlas sorgo silage	4.81	5.53	6.75	5.34
Alfalfa hay	3.02	5.62	6.29	6.85
Ground limestone	0.10	0.10	0.10	0.10
13-Average initial weight	788	738	708	671
14-Average final weight	850	864	858	868
15-Average gain	62	126	150	197
16-Average daily gain	1.48	1.68	2.00	1.97
17-Corn consumed per heifer - bushels	10.03	17.22	15.65	21.24

FATTENING HEIFERS FOR THE SUMMER MARKET

Experiment II - 1945 46

A. D. Weber and F. W. Bell

Summary of Phases I and II

1-Lot number	1	2	3	4
2-Number of heifers in lot	10	10	10	10
3-Total feeds consumed per heifer:				
Gr. shelled corn - bus.	35.18	29.81	21.95	21.24
Cottonseed meal - lbs.	254.40	288.10	287.80	313.00
Silage - tons	1.27	2.02	2.33	2.51
Alfalfa hay - lbs.	126.80	421.60	471.90	685.10
Gr. limestone - lbs.	18.15	21.50	21.50	24.00
4-Date placed on test	11-29-45	11-29-45	11-29-45	11-29-45
5-Date taken off test	5-30-46	7-2-46	7-2-46	7-27-46
6-Date marketed	5-31-46	7-3-46	7-3-46	7-28-46
7-Duration of test days	182	215	215	240
8-Total gain per heifer	336	347	344	352
9-Average final weight	850	864	858	868
10-Av. weight at market	815.6	859.5	851.5	854.0
11-Shrink in transit:				
Pounds per heifer	34.4	4.5	6.5	14.0
Percent	4.0	0.5	0.8	1.6
12-Dressing percentage	60.0	57.8	55.6	56.6
13-Carcass grades:				
Choice	5	6	2	2
Good	5	4	8	8

OBSERVATIONS

This was the second in a series of tests being conducted by the Kansas Agricultural Experiment Station in an attempt to develop a standard system of fattening heifers for the summer market. A third test is now in progress. When a satisfactory dry lot system has been developed, it will be used as a check in developing a system of fattening heifers for the summer market which includes pasture.

The work done thus far has dealt with the quantity of grain that heifer calves should receive when they are to be fattened in the dry lot for the summer (June to September) market. Results obtained to date indicate that the most satisfactory system is to feed a limited grain ration ($\frac{1}{2}$ to $\frac{1}{3}$ feed) during the winter and then full feed grain for three to five months beginning about April 15.