

## THE EFFECT OF LIVER FLUKES ON THE PERFORMANCE OF FEEDLOT STEERS

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### Story in Brief

In a recent feeding trial, 26 steers out of 140 total head had liver flukes. Steers with liver flukes gained 8.8% slower than steers without flukes over a 119 day feeding period. The presence of liver flukes reduced gains by 11.4% during the first 84 days of the feeding period. However, during the last 28 days of the trial, cattle with flukes gained 25.3% faster than cattle without flukes. It is apparent that the presence of liver flukes can severely reduce the performance of feedlot steers.

(Key Words: Feedlot, Steers, Liver Flukes.)

### Introduction

It has long been suspected that the presence of liver flukes impairs the performance of feedlot cattle. However, this hypothesis has not been previously tested at OSU because liver flukes have not been detected in a sizable number of cattle in feedlot trials. Australian workers (Chick et al., 1980) reported that gains were reduced by 14.4% in grazing steers artificially injected with flukes. This paper on liver flukes resulted from the detection of flukes in 19% of the cattle in one ionophore feeding trial. With this percentage of cattle harboring flukes, it was possible to statistically analyze the effect of liver flukes on the performance of feedlot steers.

### Materials and Methods

The 140 yearling steers in this experiment were born and raised in Central Oklahoma and were part of a 119 day feeding trial in which the effect of Tetronasin, a recently developed ionophore, on the performance of feedlot cattle was evaluated. The experimental animals and procedures followed in this experiment are described elsewhere in this publication (see "Effect of Tetronasin on the Rate and Efficiency of Gain of Feedlot Steers"). Data for control animals includes all cattle, including those which had liver abscesses. In the inspection process, livers exhibiting abscesses are immediately condemned and are not checked for flukes; therefore, some livers with abscesses may have also had undetected flukes.

### Results and Discussion

The presence of liver flukes reduced daily gains (Table 1), with gains during the first 28 days showing the greatest reduction (12.5%,  $P < .06$ ). Gains during the second and third 28 day periods were reduced

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Table 1. Effect of liver flukes on steer performance.

	Absent	Present
Number of steers	110	26
Weight, lb*:		
Starting	771	774
56 days	1019	992
112 days	1160	1135
Daily gains, lb*:		
0-28	4.81 <sup>d</sup>	4.21 <sup>e</sup>
29-56	4.02	3.65
57-84	3.25	2.86
85-112	1.78 <sup>e</sup>	2.23 <sup>d</sup>
0-56	4.41 <sup>b</sup>	3.93 <sup>c</sup>
0-84	4.03 <sup>b</sup>	3.57 <sup>c</sup>
57-112	2.51	2.55
0-112, live	3.46 <sup>b</sup>	3.24 <sup>c</sup>
0-119, carcass <sup>a</sup>	3.20 <sup>b</sup>	2.92 <sup>c</sup>

\*Expressed as least square means.

<sup>a</sup>Based on carcass weight divided by .62, an assumed dressing percent.

<sup>b,c</sup>Means in the same row with different superscripts differ ( $P < .05$ ).

<sup>d,e</sup>Means in the same row with different superscripts differ ( $P < .10$ ).

by 9.2% and 12%, respectively, when flukes were present. During the first 84 days on feed, steers with flukes gained 11.4% slower ( $P < .02$ ) than steers without flukes (3.57 vs 4.03 lb/day). During the last 28 day feeding period, however, those steers with flukes appeared to make compensatory gains (2.23 vs 1.78 lb/day,  $P < .07$ ). Averaged over the total trial, live weight daily gains were decreased by 6.4% with the presence of flukes (3.24 vs 3.46 lb). On a carcass adjusted basis, daily gains were reduced by 8.8% ( $P < .05$ ) in steers with flukes (2.92 vs 3.20 lb).

The presence of flukes did not appear to affect carcass measurements with the exception of fat thickness over the twelfth rib (Table 2). Fat thickness was significantly lower ( $P < .05$ ) for those steers

Table 2. Effect of liver flukes on carcass parameters.\*

	Absent	Present
Carcass wt, lb	713 <sup>b</sup>	692 <sup>c</sup>
Dressing percent	61.4	61.0
Rib eye area, sq in	13.15	13.32
KHP, %	2.48 <sup>b</sup>	2.49
Fat thickness, in	.32 <sup>b</sup>	.31 <sup>c</sup>
Marbling score <sup>a</sup>	12.20	12.76
Percent choice	45.3	57.5
Yield grade	2.30	2.14

\*All values expressed as least square means.

<sup>a</sup>12=slight plus, 13=small minus.

<sup>b,c</sup>Means in the same row with different superscripts differ ( $P < .05$ ).

which had flukes, though this difference was very small (.01 in). In addition, hot carcass weights were 21 lbs lower for steers with liver flukes ( $P < .05$ ). This reduction would be expected due to the lower rate of gain by these cattle. As these cattle were fed in groups, no information on effect of flukes on feed intake or efficiency is available.

In summary, the presence of liver flukes can severely reduce the performance of feedlot steers. These data suggest that the adverse effect of liver flukes on performance is most severe during the first half of a feeding period so that cattle fed for a long time may compensate and recover. If fed for equal gain, about 10 additional days would be required for cattle with flukes which, at a daily yardage cost of 30 cents, would total \$3.00. As feed efficiency may not be altered by flukes, this figure would need to be compared with the expected fluke incidence to determine the value of a flukicide treatment of cattle entering a feedyard.

#### Literature Cited

- Chick, B.F., et al. 1980. Production effects of live fluke (*Fasciola hepatica*) infection in beef cattle. *Aust. Vet. J.* 56:588.