

Effect of Health Treatments on Feedlot Performance, Carcass Traits and Profitability of Beef Calves Fed in the Iowa Tri-County Steer Carcass Futurity

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2010 Midwest ASAS



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Introduction and Background

- Gardner et al. (1999) reported that steers that were treated for disease had lower final live weights, ADG, hot carcass weights (HCW), less external and internal fat, and more desirable yield grades
- Cattle treated more than once had lower hot carcass weights, lower marbling scores and lower yield grades than cattle not treated (Roerber et al., 2001)
- Animals treated one or more times had a reduced average daily gain in the feedlot. Calves treated once or more returned less net value to the owner (Fulton et al., 2002).



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Objectives

- Examine how health treatments influence both feedlot performance and carcass merit
- Communicate findings to the industry



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Materials and Methods

- Data analyzed on 47,764 head of cattle fed in 18 Iowa feedlots over eight years (2002-2009)
- All cattle were fed a common dietary energy level and administered similar health and implant treatments
- All cattle were weighed, sorted, vaccinated, implanted and body conditioned scored within 4 days of arrival



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Materials and Methods

- Calves were sorted and harvested when visually determined to have one cm of fat cover
- Only cattle with full, detailed carcass and performance information were included in the study
- Calves were divided into three groups based on the number of times the animal was treated:
 - Non-treated calves (NT)
 - Calves treated once (1T)
 - Calves treated ≥ 2 times (2T)



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Mean Number of Times Treated



^{ab}Means with unlike superscripts differ ($P < 0.05$)



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Effect of Health Treatments on Feedlot Performance and Profitability

Item	Number of Times Treated		
	NT	1T	2T
Arrival wt., kg	295.0 ^a	280.0 ^b	273.8 ^c
Delivery age, d	302.8 ^a	274.1 ^b	263.9 ^c
Final adj. wt., kg	536.8 ^a	524.3 ^b	514.3 ^c
ADG, kg/d	1.46 ^a	1.39 ^b	1.33 ^c
Days on Feed	167.0 ^a	177.9 ^b	183.7 ^c
F:G, kg/kg	6.89 ^a	6.76 ^b	6.66 ^c
Cost of Gain, \$/kg	1.36 ^a	1.52 ^b	1.64 ^c
Treatment cost/bd	0.00 ^a	24.04 ^b	61.41 ^c
Profit, USD/hd	52.45 ^a	(15.16) ^b	(137.30) ^c

^{a,b,c}Means within a row with unlike superscripts differ (P<0.05)

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Effect of Health Treatments on Carcass Traits

Item	Number of Times Treated		
	NT	1T	2T
HCW, kg	330.6 ^a	322.7 ^b	317.7 ^c
Dressing percent	61.53 ^a	61.33 ^b	60.93 ^c
REA, sq. cm.	79.9 ^a	79.7 ^{ab}	79.3 ^b
Rib fat, cm	1.14 ^a	1.09 ^b	1.00 ^c
Calculated YG	2.86 ^a	2.75 ^b	2.63 ^c
Marbling score ¹	429.4 ^a	413.8 ^b	395.9 ^c
%CAB ^{®2}	18.71	14.36	11.19

^{a,b,c}Means within a row with unlike superscripts differ (P<0.05)

¹Marbling score: Sm³ = 400

²Disposition score influenced CAB[®] acceptance rate (P<0.0001)

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Conclusions

- Calves that remained healthy during the feeding period had:
 - Greater delivery weights, final weights, HCW and ADG; and lower cost of gain
 - Greater marbling scores, rib fat and CAB[®] acceptance rates
 - than calves that were treated one or more times



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