



# **BEEF.** Stocker Trends

News and views on stocker segment issues from *BEEF* magazine.

October 23, 2007

A Penton Media Publication

## **Stocker Nutrition**

### [Increase Pasture Gains By Limit-Feeding First](#)

If you're going to put pounds on calves ahead of pasture -- getting cattle ready for the forage or extending the forage you're planning on -- limit-feeding first, rather than full-feeding can boost the overall gain.

That's according to new, unpublished research from Kansas State University (KSU).

In the study, calves were either full- or limit-fed at 2.5%, 2.25% or 2% of body-weight for 45 days, following a 20-day straightening out period. The ration -- 16% crude protein -- consisted of prairie hay, alfalfa hay, cracked corn and wet gluten feed.

As might be suspected, through this backgrounding phase, full-fed cattle gained more than any of the limit-fed groups, and the limit-fed groups receiving more feed gained more than those receiving less (see Table 1).

What may surprise some is that after 90 days on pasture -- double-stocked blue-stem -- calves that had been limit-fed at less than 2.5% of their body weight posted the highest average daily gain (ADG) across the entire 90 days (Table 2).

"Given compensatory gain, this may seem straightforward, but we demonstrated that grass is capable of helping calves achieve these gains throughout the entire grazing period, especially during the latter half when grass quality is on the decline," explains Dale Blasi, KSU beef stocker specialist.

During the entire feeding phase -- both backgrounding and grazing -- calves limit-fed 2.50% or 2.25% put on gain for about 3.2¢/lb. less than those receiving full feed for a difference of \$19.77/head (Table 3). Besides feed, that estimate accounts for less manure to manage in the backgrounding phase and the opportunity to run more cattle on the same ground.

Given negative impact on feed efficiency at 2% due to the relatively short backgrounding period, Blasi says 2.25% is likely the optimum level in this study.

Cattle in the study are currently being fed at a commercial yard, so impacts on feeding performance and carcass merit can also be accounted for.

**Table 1**  
**65-Day Backgrounding-Limit-Fed\***  
**Gain/Cost**

	<b>Full-Fed</b>	<b>Limit-fed 2.50%</b>	<b>Limit-fed 2.25%</b>	<b>Limit-Fed 2.00%</b>
<b># Head</b>	83	81	81	82
<b>On-weight</b>	420 lbs.	419 lbs.	420 lbs.	420 lbs.
<b>Off-weight*</b>	587 lbs.	562 lbs.	558 lbs.	530 lbs.
<b>Total gain</b>	167 lbs.	143 lbs.	138 lbs.	110 lbs.
<b>ADG</b>	3.13	2.28	2.13	1.60
<b>Conversion</b>	5.67	5.34	5.25	5.76
<b>Cost(\$)/Head/Day</b>	1.03	0.79	0.78	0.74
<b>Cost(\$)/Head/Period</b>	69.14	53.17	52.55	49.85

\*20 days of straightening out followed by 45 days in the treatment groups.

*Source: Kansas State University, unpublished data*

**Table 2**  
**90-Day Pasture Gain\***

	<b>Full-Fed</b>	<b>Limit-fed 2.50%</b>	<b>Limit-fed 2.25%</b>	<b>Limit-fed 2.00%</b>
<b>Turnout weight (lbs.)</b>	587	562	558	530
<b>Day 45 weight (lbs.)*</b>	692	671	671	645
<b>Off-test weight (lbs.)</b>	782	769	769	745
<b>Overall gain (lbs.)</b>	195	207	211	215
<b>Day 1-45 (pasture)ADG</b>	2.33	2.43	2.50	2.57
<b>Day 46-90 (pasture)ADG</b>	1.88	2.04	2.05	2.07
<b>Overall ADG</b>	2.10	2.24	2.28	2.32

\*Subsequent pasture performance of calves backgrounded 65 days.

*Source: Kansas State University, unpublished data*

**Table 3**  
**Projected Limit-Fed Cost-Savings/Benefit**

Cost Savings	Full-fed	Limit-Fed*	Difference
Pre-grass feed cost (\$)	69.14	53.00	
Pasture Cost (\$/head)	60.00	60.00	
<b>Total pasture/feed (\$/head)</b>	129.14	113.00	
Cost/lbs. for 350 lbs. gain (\$)	0.356	0.324	0.032
350 lbs. X 0.032 <sup>a</sup> (\$)			11.20
Manure Handling <sup>b</sup> (\$)			.80
Extra animals <sup>c</sup> (\$)			7.77
<b>Grazing Difference</b>			<b>\$19.77</b>

\* Average of limit-fed treatments

<sup>a</sup> For all gain from receiving to off grass

<sup>b</sup> 5¢/head/day X 25% reduction

<sup>c</sup> {(13 head X 210 lbs. X \$110/cwt.) – \$780 grazing/286 head} vs. 273 head weighing 587 lbs. on 640 acres stocked at 250 lbs./acre= 160,000 lbs.

Source: Kansas State University