

Management of Optaflexx in Feedlots that Sort Cattle Prior to Market

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Summary

One hundred and thirty five steers from were used in a study to compare strategies for managing Optaflexx in feedlots that sort cattle just prior to market. The pens were assigned to one of two Optaflexx management treatments. Two pens were each assigned to each treatment. The Optaflexx management treatments were: 1) Topped Out (TO), where half the cattle in each pen were sorted without being fed Optaflexx. The remaining cattle were fed Optaflexx for 28 days, or 2) Sorted Early (SE), where market timing decisions were made more than 28 days prior to the first marketing so that Optaflexx could be fed to all of the cattle. Feed consumption levels and patterns were not affected by sorting cattle early into market outcome groups. There were no differences in performance between the two sorting treatments. Cattle in the SE treatment had significantly larger ribeye areas. Based on the results of this study sorting cattle into market outcome groups prior to the last 28 days of feeding of the first group to be marketed so that Optaflexx can be fed to all of the cattle in the pen is a viable alternative to only feeding Optaflexx to the “last draft” to be marketed.

Introduction

Optaflexx is a newly cleared feed additive for beef cattle that improves muscle and carcass growth when fed the last 28-42 days of the feeding period. It is a beta agonist that has a different mode of action than either implants or ionophores. To achieve the optimum biological and economic benefit of Optaflexx, the compound must be fed for the last 28 days prior to market. In the upper Midwest cattle feeders often sort market-ready cattle from pens and market the cattle in two or three groups or “drafts”. This “topping out” of pens is a management technique that has existed since cattle were sorted to fill rail cars destined for Eastern markets. This form of marketing management has gained additional economic benefit as producers increasingly market cattle on value based grid marketing programs. Unfortunately marketing management systems that involve topping out pens are inconsistent with the efficient use of Optaflexx. Producers are forced to only feed Optaflexx to the last draft of cattle remaining in the

pen, or sort the cattle earlier into marketing outcome groups. The first option only allows a portion of the cattle to benefit from this technology. The second option requires cattle to be perhaps moved to a new pen, with new pen mates and re-establish the social hierarchy within the pen at a critical time in the finishing period. Effects of feed intake due to this changing social structure are unknown. This study was designed to evaluate and demonstrate these two management options for feeding Optaflexx in feedlots where cattle are topped out or sorted out of pens prior to harvest.

Materials and Methods

One hundred and thirty five steers from the ISU McNay research farm were used in a study to compare strategies for managing Optaflexx in farm feedlots that sort cattle just prior to market. The calves were received at the Armstrong Research Farm in Lewis Iowa in October, 2003. The steers were fed a 60% concentrate receiving ration on arrival and stepped up to a finishing diet (Table 1) over a 28-35 day period. The ration used in this study averaged 12.97% crude protein, .44% Ca, .37% P, .61% K and 63 Mcal/cwt NEg on a dry matter basis. The cattle had been weaned and started on feed at the farm of origin. On November 5, the cattle were stratified by weight and implant treatment and randomly assigned to one of four pens. The implant treatments were Synovex-S initially followed by either Synovex Choice or Revalor-IS as a terminal implant. All cattle were reimplanted with their respective implant on February 24. The pens were assigned to one of two Optaflexx management treatments. Two pens were each assigned to each treatment. The Optaflexx management treatments were: 1) Topped Out (TO), where half the cattle in each pen were sorted without being fed Optaflexx. The remaining cattle were fed Optaflexx for 28 days, or 2) Sorted Early (SE), where market timing decisions were made more than 28 days prior to the first marketing so that Optaflexx could be fed to all of the cattle. In the SE treatment cattle were evaluated by ultrasound on March 23. Cattle were then sorted into new pen assignments based on an early or late marketing on March 31. Optaflexx feeding began on the earlier market pen in the SE treatment on April 1. This pen plus half of both pens in the TO treatment were marketed on April 26. Optaflexx was fed to all remaining cattle from April 27th until harvest on May 23rd. Marketing decisions in this study were based on ultrasound fat thickness estimates from the March 23 scan. The effect of implant treatment was evaluated in this study, however there were no implant or implant by treatment interactions. The effect

of implant treatment was subsequently dropped from the model. The analyses presented here was conducted using SAS GLM procedure with the effects of Optaflexx management treatment, harvest date (early vs. late) and the treatment by harvest date interaction. This analysis

was conducted for performance and carcass measurements with individual animal as the experimental unit. Pen was the experimental unit for dry matter intake and feed conversion and only Optaflexx management treatment could be used as a main effect.

Table 1. Finishing Diet.^a

<u>Ingredient</u>	<u>% of Dry Matter</u>
Corn	78.6
Ground alfalfa hay	16.5
Protein supplement ^{bc}	4.9

^a Water was added at 7.9% as a conditioner before mixing.

^b Supplement providing 45% CP, 22% from NPN, 3.9% Ca, 1% Dam, 1% k and 600 g/ton on a dry matter basis.

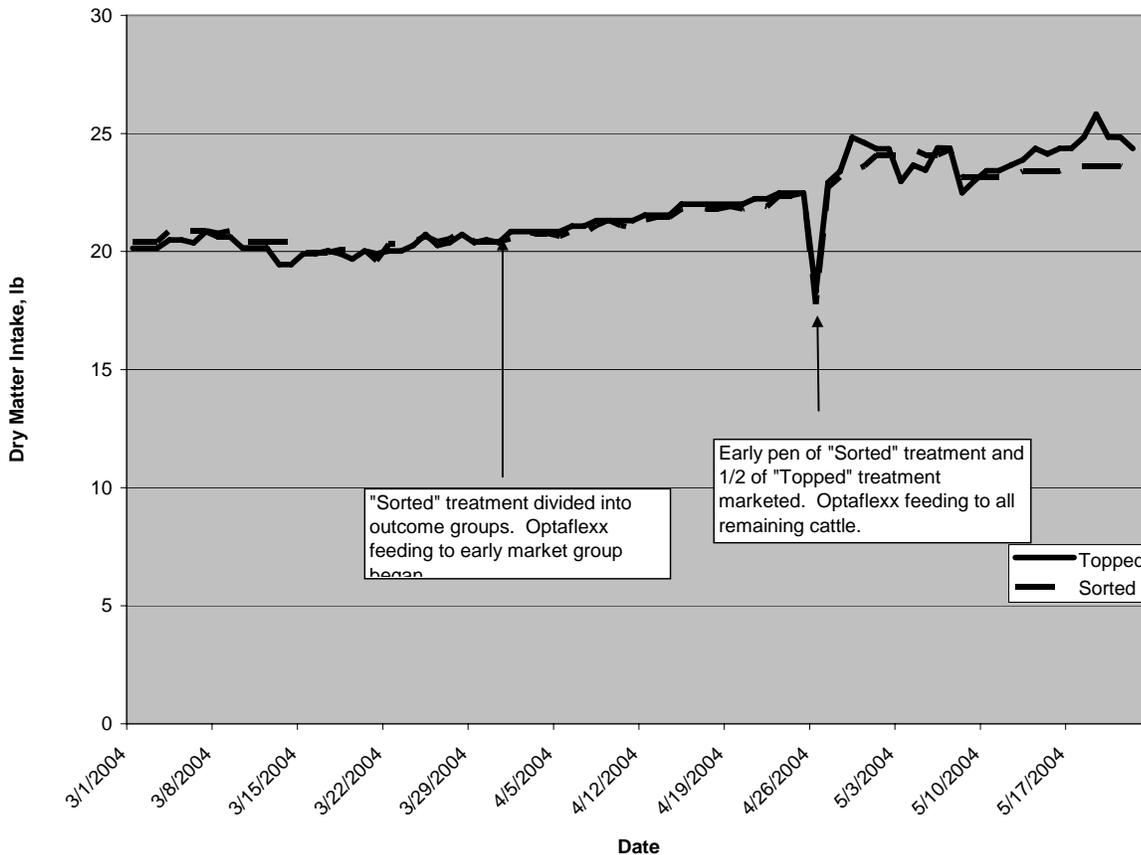
^c Optaflexx added in a separate supplement to provide 200 mg/head/day when fed.

Results and Discussion

Of particular interest in this study were any behavioral effects of sorting and remixing cattle that are 28 to 56 days from harvest. Reestablishment of the social order and stress of a new environment may negatively

effect feed intake and thereby cattle performance. Daily intake patterns of the TO and SE treatments are shown in Figure 1. This is daily dry matter intake, by treatment, for the last three months of the study. Each point represents the mean of two pens until April 26, the date of the first

Figure 1. Daily dry matter intake of topped and sorted pens.



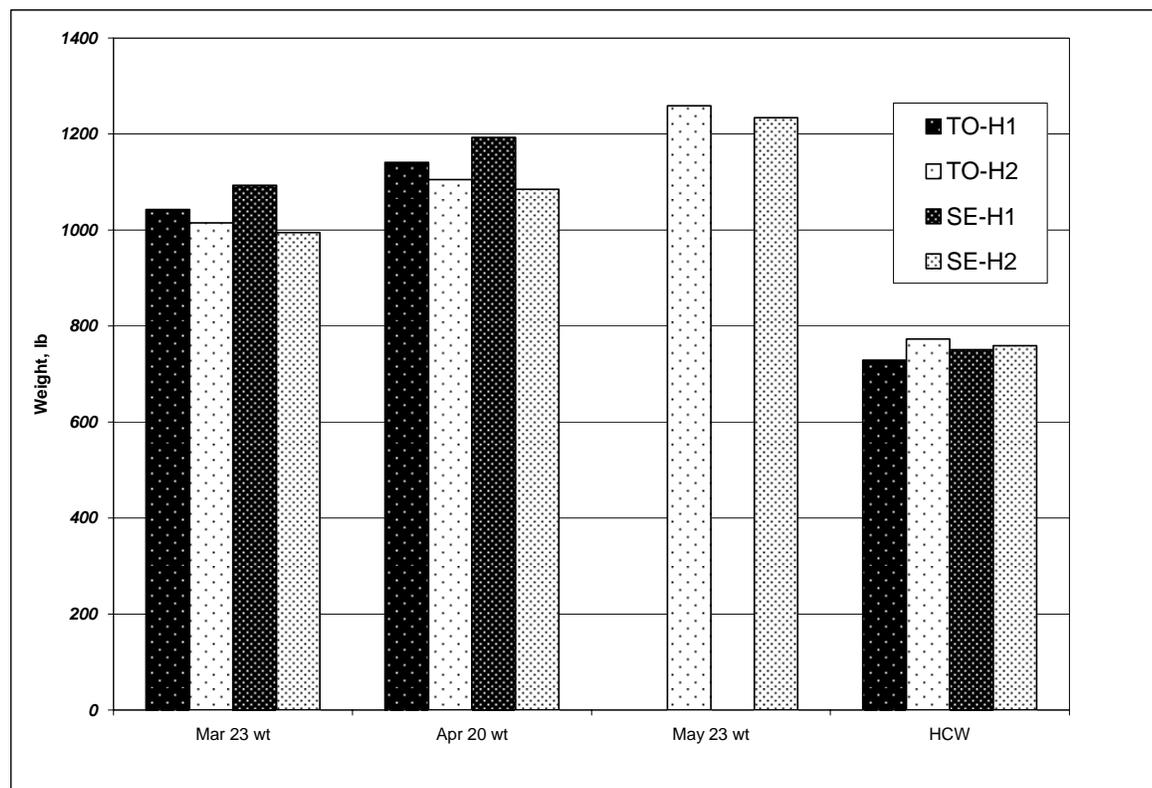
harvest. After that date only one pen of the SE treatment remained, and the TO pens were ½ occupied. There was no discernable change in feed intake during or after the SE cattle were reassigned to new pens on April 1. The dip in feed intake on April 26 represents a ½ days feeding for cattle marketed that day. Cattle in the TO pens appeared to have more daily intake variation during the month of May than the one remaining SE pen, but this was due to a single pen that seemed to have higher and more variable feed intake throughout.

Performance data through 139 days (sorting and reassignment of SE pens), final 28-day performance and overall ADG is shown in Table 2. There were no differences in any of the performance measurements by sorting treatment. There were, however, some interactions in weights which made an assessment of the Optaflexx response difficult. This interaction is shown in Figure 2. Only the topped out first harvest (TO-H1, not Optaflexx) AND the sorted early first harvest (SE-H1, fed Optaflexx) directly compare cattle fed with and without Optaflexx. Differences in final weights (Apr 20 weights)

Table 2. Performance by sorting treatment.

	<u>Topped</u>	<u>Sorted</u>	<u>SE</u>	<u>Significance</u>
Initial weight	525	538	8	NS
139-d weight	1029	1044	12	NS
139-d ADG	3.63	3.65	.05	NS
Final weight	1200	1213	14	NS
Final 28-d ADG	4.49	4.42	.13	NS
Overall ADG	3.59	3.60	.05	NS

Figure 2. Cattle weights by sorting treatment and harvest date.



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and carcass weights between these two treatments would suggest a nice response. However these differences also existed in March. Cattle in the second harvest group were just the opposite. This suggests that more variation existed in the SE treatment than the TO treatment, making direct comparisons within a harvest group difficult. Overall differences by main effect should still be valid, however.

Carcass information is given in Table 3. Cattle in the SE treatment tended to have more carcass weight, muscle and yield grade, and value per head. Only ribeye area was significantly higher in the SE vs. the TO treatment, however.

Feed efficiency and overall intake for the last 56 days, starting just after the first sort, is shown in Table 4. There were no statistical differences in feed intake or feed efficiency over that time period.

Table 3. Carcass characteristics by sorting treatment.

	<u>Topped</u>	<u>Sorted</u>	<u>SE</u>	<u>Significance</u>
Hot carcass weight, lb.	746	755	8	NS
Dressing Percent, %	62.2	62.2	.3	NS
Fat KHP thickness, in	.38	.38	.01	NS
Ribeye area, sq in	12.50	12.81	.11	< .05
Marbling Score ^a	1045	1057	9	NS
Called YG ^b	2.20	2.20	.05	NS
Calculated YG ^c	2.66	2.57	.05	NS
Total value, \$	\$1037.58	\$1047.27	\$12.70	NS

^a 900 = Slight⁰⁰, 1000 = Small⁰⁰

Table 4. Intake and efficiency the last 55 days by sorting treatment.

	<u>Topped Out</u>	<u>Sorted Early</u>	<u>SE</u>	<u>Significance</u>
Dry matter intake, lb.	22.1	21.8	.3	NS
ADG, lb.	3.15	3.13	.10	NS
Feed/Gain	7.03	6.98	.28	NS

Conclusion

This study was designed to evaluate two methods of managing Optaflexx when sorting of market ready cattle is a normal management process. The use of larger pens (40 head capacity) allowed an evaluation of feed intake changes when cattle are sorted and remixed into pens. This study was not designed to accurately measure the

Optaflexx response. Larger studies with more replication would be required for that. Based on the results of this study sorting cattle into market outcome groups prior to the last 28 days of feeding of the first group to be marketed so that Optaflexx can be fed to all of the cattle in the pen is a viable alternative to only feeding Optaflexx to the "last draft" to be marketed.