

Effects of Optaflexx® on Performance and Carcass Characteristics in Finishing Heifers: 16-trial Summary

Elanco Study No. T4VUS130001

Elanco

Optaflexx®

Study overview

A meta-analysis of 16 trials was conducted to quantify the effects of Optaflexx dose level on performance and carcass characteristics in finishing heifers.

Key study results

- Compared to the control, Optaflexx fed at 200 mg/hd/d:
 - Improved feed efficiency by 12.5%
 - Increased live weight gain by 11.9 lbs
 - Increased hot carcass weight (HCW) by 9.4 lbs
 - Increased dressing percent by 0.2 units
- Compared to the control, Optaflexx fed at 300 mg/hd/d:
 - Improved feed efficiency by 18.8%
 - Increased live weight gain by 17.8 lbs
 - Increased HCW by 14.1 lbs
 - Increased dressing percent by 0.3 units

Background information

TRIAL DESIGN

- Trial selection criteria
 - Experimental unit was pen or lot
 - Negative control and at least one Optaflexx treatment
 - On-label use for dose and duration
 - Period performance data (28 to 42 days)
- A total of 16 studies met selection criteria

STATISTICS

- Data were analyzed in SAS using mixed effects regression models with Optaflexx intake (mg/hd/d) as the primary predictor
- The meta-analysis used a regression model that inversely weighted each study to its variation — the more variation there was in a study, the less weight the study was given in the analysis
- Differences were deemed statistically significant if $P < 0.05$

MATERIALS AND METHODS

- Total head — 12,342
 - Control: 5,387 hd
 - 100 mg/hd/d Optaflexx: 172 hd
 - 200 mg/hd/d Optaflexx: 5,139 hd
 - 300 mg/hd/d Optaflexx: 1,644 hd
- Research conducted in 8 states
- Initial weight ranged from 1,015 to 1,267 lbs
- Final weight ranged from 1,097 to 1,362 lbs
- Hot carcass weight ranged from 638 to 813 lbs
- Average duration of Optaflexx feeding was 32.3 days

Study results

Table 1. Live performance of heifers comparing multiple Optaflexx doses

	Optaflexx treatment, mg/hd/d				SEM	P-value	
	0	100	200	300		Linear	Quadratic
Live weight gain, lbs	72.8	78.7	84.6	90.6	3.62	< 0.01	0.62
Response over controls, lbs	—	5.9	11.9	17.8	—	—	—
Daily gain, lbs	2.56	2.76	2.96	3.16	0.10	< 0.01	0.92
Response over controls, %	—	7.8	15.7	23.5	—	—	—
DM intake, lbs/d	20.30	20.18	20.36	20.14	0.63	0.97	0.23
Feed conversion	7.78	7.30	6.81	6.32	0.21	< 0.01	0.39
Response over control, % improvement	—	6.3	12.5	18.8	—	—	—

Table 2. Carcass characteristics of heifers comparing multiple Optaflexx doses

	Optaflexx treatment, mg/hd/d				SEM	P-value	
	0	100	200	300		Linear	Quadratic
Dress, %	62.54	62.64	62.74	62.84	0.46	0.03	0.98
Response over controls, units	—	0.1	0.2	0.3	—	—	—
HCW, lbs	739.2	743.9	748.6	753.3	8.59	< 0.01	0.07
Response over controls, lbs	—	4.7	9.4	14.1	—	—	—
12th rib back fat thickness, in	0.59	0.60	0.61	0.62	0.023	0.42	0.51
Ribeye area, in²	13.28	13.42	13.57	13.72	0.187	< 0.01	0.91
Response over controls, in ²	—	0.14	0.29	0.44	—	—	—
Calculated USDA yield grade	2.94	2.92	2.90	2.88	0.098	0.38	0.12
Marbling score^a	540	538	537	536	7.3	0.32	0.84

^aMarbling score — 500=Small⁰⁰, 600=Modest⁰⁰.

Table 3. USDA quality-grade distribution of heifers comparing multiple Optaflexx doses

	Optaflexx treatment, mg/hd/d ^a				SEM	P-value
	0	100	200	300		Linear
Prime, %	1.59	1.46	1.35	1.24	0.20	< 0.01
Choice, %	68.84	67.15	65.39	63.56	0.18	< 0.01
Select, %	28.10	29.79	31.52	33.30	0.19	< 0.01
Standard/No roll, %	1.47	1.61	1.75	1.90	0.03	0.01

^aDegrees of freedom (DF) = 17; Treatment x duration interaction P = 0.56.

Table 4. USDA yield-grade distribution of heifers comparing multiple Optaflexx doses

	Optaflexx treatment, mg/hd/d ^a				SEM	P-value
	0	100	200	300		Linear
Yield grade 1, %	11.30	11.92	12.58	13.27	0.23	< 0.01
Yield grade 2, %	39.55	40.44	41.31	42.13	0.23	< 0.01
Yield grade 3, %	38.50	37.55	36.57	35.57	0.23	< 0.01
Yield grade 4, %	9.73	9.22	8.73	8.27	0.25	< 0.01
Yield grade 5, %	0.92	0.86	0.81	0.76	0.03	0.02

^aDF = 15; Treatment x duration interaction P = 0.31.

Key findings

- Live and carcass weight gain increased as the dose of Optaflexx increased
- Effects on carcass characteristics and USDA quality and yield grades changed with increasing doses of Optaflexx, resulting in slight shifts in yield- and quality-grade distributions
- In a highly dynamic marketplace, Optaflexx is the only beta-agonist that gives cattle feeders more management options,* allowing them to respond to changes in the market while optimizing both live and carcass performance

*Based on zero-day withdrawal and dose range.

The label contains complete use information, including cautions and warnings. Always read, understand and follow the label and use directions.

Optaflexx: Complete feed

For increased rate of weight gain and improved feed efficiency: Feed 8.2 to 24.6 g/ton of ractopamine hydrochloride (90% DM basis) continuously in a complete feed to provide 70 to 430 mg/hd/d for the last 28 to 42 days on feed.

For increased rate of weight gain, improved feed efficiency and increased carcass leanness: Feed 9.8 to 24.6 g/ton of ractopamine hydrochloride (90% DM basis) continuously in a complete feed to provide 90 to 430 mg/hd/d for the last 28 to 42 days on feed.

Optaflexx: Top dress

For increased rate of weight gain and improved feed efficiency: Feed 70 to 400 mg/hd/d of ractopamine hydrochloride (90% DM basis) continuously in a minimum of 1.0 lb/hd/d top dress Type C medicated feed (maximum 800 g/ton ractopamine hydrochloride) during the last 28 to 42 days on feed.

