



## Effects of Optaflexx® on Performance and Carcass Characteristics in Finishing Steers: 32-trial Summary

Elanco Study No. T4VUS120012

### Study overview

A meta-analysis of 32 trials was conducted to quantify the effects of Optaflexx dose level on performance and carcass characteristics in finishing steers.

### Key study results

- Compared to the control, Optaflexx fed at 200 mg/hd/d:
  - Improved feed efficiency by 14.5%
  - Increased live weight gain by 15.0 lbs
  - Increased hot carcass weight (HCW) by 13.5 lbs
  - Increased dressing percent by 0.5 units
- Compared to the control, Optaflexx fed at 300 mg/hd/d:
  - Improved feed efficiency by 16.4%
  - Increased live weight gain by 22.5 lbs
  - Increased HCW by 20.3 lbs
  - Increased dressing percent by 0.7 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 (last 28 to 42 days on feed)
- A total of 32 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 — 26,483
  - Control: 10,401 head
  - 100 mg/hd/d Optaflexx: 5,160 head
  - 200 mg/hd/d Optaflexx: 9,278 head
  - 300 mg/hd/d Optaflexx: 1,644 head
- Research conducted in 12 states and three countries
- Initial weight ranged from 1,055 to 1,323 lbs
- Final weight ranged from 1,147 to 1,423 lbs
- HCW ranged from 670 to 904 lbs

### Study results

**Table 1. Live performance of steers comparing multiple Optaflexx doses**

	Optaflexx treatment, mg/hd/d				SEM	P-Value	
	0	100	200	300		Linear	Quadratic
<b>Live weight gain, lbs<sup>a</sup></b>	81.0	88.5	96.0	103.5	4.14	< 0.01	0.14
Response over control, lbs	—	7.5	15.0	22.5	—	—	—
<b>Average daily gain, lbs<sup>b</sup></b>	2.97	3.28	3.48	3.58	0.06	< 0.01	0.01
Response over control, %	—	10.4	17.2	20.5	—	—	—
<b>DM intake, lbs/d</b>	21.45	21.34	21.36	21.16	0.42	0.29	—
<b>Feed conversion<sup>b</sup></b>	7.48	6.81	6.40	6.26	0.21	< 0.01	0.01
Response over control, % Improvement	—	9.0	14.5	16.4	—	—	—

<sup>a</sup> Model includes adjustment to account for differences in trial duration.

<sup>b</sup> Model includes adjustments for linear and quadratic Optaflexx intake (mg/hd/d).

## Study results

**Table 2. Carcass characteristics of steers comparing multiple Optaflexx doses**

	Optaflexx treatment, mg/hd/d				SEM	P-Value	
	0	100	200	300		Linear	Quadratic
<b>Dressing percent</b>	63.00	63.24	63.47	63.71	0.26	< 0.01	—
Response over control, %	—	0.24	0.47	0.71	—	—	—
<b>Hot carcass weight, lbs</b>	804.9	811.7	818.4	825.2	6.76	< 0.01	0.31
Response over control, lbs	—	6.8	13.5	20.3	—	—	—
<b>12<sup>th</sup> Rib fat thickness, in</b>	0.52	0.51	0.51	0.51	0.013	0.60	0.70
<b>Ribeye area, in<sup>2</sup></b>	13.26	13.42	13.57	13.73	0.132	< 0.01	0.96
Response over controls, in <sup>2</sup>	—	0.16	0.31	0.47	—	—	—
<b>Kidney, pelvic &amp; heart fat, %</b>	2.00	1.99	1.98	1.97	0.036	0.01	0.41
<b>Calculated yield grade</b>	3.02	2.98	2.94	2.90	0.045	< 0.01	0.26
<b>Marbling score<sup>a</sup></b>	519	516	513	510	5.8	< 0.01	0.41

<sup>a</sup>Marbling score — 500=Small<sup>00</sup>, 600=Modest<sup>00</sup>.

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

	Optaflexx treatment, mg/hd/d				SEM	P-Value Linear
	0	100	200	300		
<b>Prime, %</b>	0.42	0.39	0.37	0.34	0.22	< 0.01
<b>Choice, %</b>	58.38	56.84	55.26	53.69	0.19	< 0.01
<b>Select, %</b>	38.61	40.01	41.43	42.84	0.19	< 0.01
<b>Standard/No roll, %</b>	2.59	2.76	2.94	3.13	0.20	< 0.01

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

	Optaflexx treatment, mg/hd/d				SEM	P-Value Linear
	0	100	200	300		
<b>Yield grade 1, %</b>	8.43	8.95	9.50	10.07	0.14	< 0.01
<b>Yield grade 2, %</b>	37.23	38.34	39.42	39.98	0.14	< 0.01
<b>Yield grade 3, %</b>	44.96	43.88	42.76	41.61	0.15	< 0.01
<b>Yield grade 4, %</b>	8.56	8.06	7.60	7.16	0.17	< 0.01
<b>Yield grade 5, %</b>	0.82	0.77	0.72	0.68	0.17	< 0.01

## 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.

Product labels vary by country.

### 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.

Optaflexx<sup>®</sup> is a trademark for Elanco's brand of ractopamine hydrochloride.

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