# Effects of Optaflexx and Terminal Implant Window on Growth Performance and Carcass Characteristics in Heifers Fed to Harvest

Elanco Study No. T4VUS100011

## Study overview

The trial was conducted to evaluate the interaction of Optaflexx® (ractopamine hydrochloride) and terminal implant window on growth performance and carcass characteristics in heifers fed in confinement to harvest.

## Key study results

- No significant interaction between Optaflexx and terminal implant window on growth performance and carcass characteristics
- Feeding Optaflexx (200 mg/hd/d ractopamine) during the final 28 days on feed:
  - Increased daily gain by 9.9% ($P = 0.04$) and increased carcass gain by 15.2 lbs ($P < 0.01$)
  - Tended to increase ribeye area (13.69 vs. 13.31 in$^2$, $P < 0.09$) and decrease marbling score (407 vs. 425, $P = 0.10$)
- Terminal implant window
  - In this study, timing of administration of the terminal implant had no effect on growth ($P \geq 0.74$) or carcass parameters ($P \geq 0.20$)

## Experimental design

- Study conducted at Burnett Research Center at Texas Tech University
- 216 heifers — arrival weight 682 lbs
- Study length averaged 141 days
- 2 x 3 factorial arrangement of treatments with 9 replications
  - Optaflexx level
    - 0 mg/hd/d
    - 200 mg/hd/d fed final 28 days
  - Terminal implant window
    - 140 days — Heifers implanted with Component® TE-200 with Tylan® (tylosin) on day 1
    - 100 days — Heifers implanted with Component TE-IH with Tylan on day 1 followed by Component TE-200 with Tylan on day 40
    - 60 days — Heifers implanted with Component TE-IH with Tylan on day 1 followed by Component TE-200 with Tylan on day 80

## Study results

**Table 1. Main effect of Optaflexx on feedlot performance and carcass characteristics of beef heifers during the final 28 days on feed***

| | Optaflexx, mg/hd/d | | SEM | *P*-value | |
|---|---|---|---|---|---|
| | 0 | 200 | | Optaflexx | Opt x TI |
| **Live performance (d 112-140)** | | | | | |
| Initial weight, lbs | 1,125.6 | 1,115.6 | 6.92 | 0.31 | 0.98 |
| Final weight, lbs | 1,208.5 | 1,206.7 | 8.12 | 0.88 | 0.77 |
| Live weight gain, lbs | 82.9 | 91.1 | — | — | — |
| Daily gain, lbs | 2.92[a] | 3.21[b] | 0.10 | 0.04 | 0.29 |
| DM intake, lbs/d | 19.17 | 19.29 | 0.27 | 0.75 | 0.33 |
| Feed conversion | 7.05 | 6.27 | 0.30 | 0.08 | 0.14 |
| **Carcass-based performance and carcass characteristics** | | | | | |
| Estimated d 112 HCW, lbs[x] | 669.7 | 666.7 | 4.66 | 0.66 | 0.98 |
| HCW, lbs | 722.5[a] | 734.8[b] | 3.60 | 0.02 | 0.61 |
| Carcass gain, lbs | 52.8[a] | 68.0[b] | 3.85 | <0.01 | 0.66 |
| Carcass daily gain, lbs | 1.89[a] | 2.43[b] | 0.06 | 0.01 | 0.66 |
| Dress, %[y] | 62.39 | 62.69 | 0.23 | 0.35 | 0.71 |
| Ribeye area, in$^2$ | 13.31 | 13.69 | 0.15 | 0.09 | 0.99 |
| 12th rib fat thickness, in | 0.57 | 0.53 | 0.02 | 0.19 | 0.64 |
| Calculated USDA yield grade | 3.04 | 2.86 | 0.08 | 0.14 | 0.82 |
| Marbling score[z] | 425.2 | 407.2 | 7.75 | 0.10 | 0.47 |
| KPH, % | 3.17 | 3.05 | 0.08 | 0.27 | 0.37 |

*Optaflexx fed at 0 or 200 mg/hd/d during the final 28 days of the experimental period; cattle implanted with Component TE-200 with Tylan to achieve a terminal implant window (TI) of 140, 100 or 60 days.
[x]Interim HCW = Body weight shrunk by 4% then multiplied by a common DP of 51.46522 + 0.02468 x DOF + 0.43775 x DMI.
[y]Dressing percentage = HCW/ Final weight shrunk an industry standard 4%.
[z]Slight[0] = 300, Small[0] = 400.
[ab]Means differ ($P < 0.05$).

**Table 2. Main effect of terminal implant window on feedlot performance and carcass characteristics and carcass attributes of beef heifers during the finishing period***

| | Terminal implant window (TI), d | | | SEM | *P*-value | |
|---|---|---|---|---|---|---|
| | 140 | 100 | 60 | | TI | Opt x TI |
| **Live performance (d 1-140)** | | | | | | |
| Initial weight, lbs | 750.4 | 750.3 | 756.9 | 3.04 | 0.23 | 0.63 |
| Final weight, lbs | 1,206.9 | 1,213.0 | 1,203.0 | 9.95 | 0.77 | 0.77 |
| Live weight gain, lbs | 456.5 | 462.7 | 446.1 | — | — | — |
| Daily gain, lbs | 3.25 | 3.30 | 3.28 | 0.06 | 0.83 | 0.82 |
| DM intake, lbs/d | 18.23 | 18.41 | 18.14 | 0.25 | 0.74 | 0.71 |
| Feed conversion | 5.66 | 5.60 | 5.55 | 0.10 | 0.76 | 0.82 |
| **Carcass-based performance and carcass characteristics** | | | | | | |
| Estimated d 1 HCW, lbs[x] | 417.8 | 417.8 | 421.4 | 1.69 | 0.23 | 0.63 |
| HCW, lbs | 724.6 | 732.5 | 728.8 | 4.41 | 0.46 | 0.61 |
| Carcass gain, lbs | 306.7 | 314.7 | 307.4 | 4.80 | 0.44 | 0.54 |
| Carcass daily gain, lbs | 2.18 | 2.24 | 2.19 | 0.03 | 0.43 | 0.56 |
| Dress, %[y] | 62.19 | 62.73 | 62.69 | 0.28 | 0.32 | 0.71 |
| Ribeye area, in$^2$ | 13.28 | 13.76 | 13.47 | 0.19 | 0.20 | 0.99 |
| 12th rib fat thickness, in | 0.54 | 0.57 | 0.55 | 0.02 | 0.59 | 0.64 |
| Calculated USDA yield grade | 2.97 | 2.92 | 2.95 | 0.10 | 0.95 | 0.82 |
| Marbling score[z] | 424.6 | 415.3 | 408.7 | 9.49 | 0.50 | 0.47 |
| KPH, % | 3.09 | 3.13 | 3.07 | 0.10 | 0.94 | 0.37 |

*Optaflexx fed at 0 or 200 mg/hd/d during the final 28 days of the experimental period; cattle implanted with Component TE-200 with Tylan to achieve a terminal implant window (TI) of 140, 100 or 60 days.
[x]Interim HCW = Body weight shrunk by 4% then multiplied by a common DP of 51.46522 + 0.02468 x DOF + 0.43775 x DMI.
[y]Dressing percentage = HCW/Final weight shrunk an industry standard 4%.
[z]Slight$^0$ = 300, Small$^0$ = 400.

## Key findings

- Results from this study suggest that Optaflexx is an effective method to increase animal performance and carcass weight with minimal effects on beef quality in heifers
- The response to feeding Optaflexx does not appear to be affected by the timing of terminal implant administration

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.

### Implants

Administer one dose in the ear subcutaneously according to label directions.