

# Component<sup>®</sup> with Tylan<sup>®</sup> Research Brief 4

## Comparison of Component<sup>®</sup> TE-IS with Tylan<sup>®</sup> Followed by Component TE-S with Tylan vs. a Single Revalor<sup>®</sup>-XS or a Single Component TE-200 with Tylan Implant in Finishing Steers<sup>1</sup>



### Study overview

A finishing study was conducted to compare a reimplant program using Component<sup>®</sup> TE-IS with Tylan<sup>®</sup> followed by Component TE-S with Tylan to a single implant of Component TE-200 with Tylan or a single implant of Revalor<sup>®</sup>-XS. The study evaluated the effects on performance and carcass characteristics of feedlot steers in Nebraska.

### Key study results

- Cattle receiving a TE-IS/TE-S reimplant program had lower feed conversion ( $P < 0.05$ ) compared to cattle receiving one implant of Component TE-200 with Tylan when compared on a live basis
- Cattle receiving a TE-IS/TE-S reimplant program had heavier final live weights, greater average daily gains and lower feed conversion ( $P < 0.05$ ) when compared on a carcass-adjusted basis, and heavier hot carcass weights compared to cattle receiving one implant of TE-200
- Cattle receiving Revalor-XS performed similarly when compared to the other implant programs with the exception of having lower ( $P < 0.05$ ) feed conversion on a carcass-adjusted basis compared to a single Component TE-200 with Tylan implant

### Background information

#### TRIAL DESIGN

- Pens were assigned randomly to one of three treatments (15 hd/pen, 8 pens/treatment):
  - Reimplant: Component TE-IS with Tylan administered on day 1 followed by Component TE-S with Tylan on day 85
  - Single implant 1: Component TE-200 with Tylan administered on day 1
  - Single implant 2: Revalor-XS administered on day 1
- Studies were designed and executed under a common protocol to facilitate a combined analysis
- Pen used as the experimental unit

#### STATISTICS

- Pooled analysis using the MIXED procedure of SAS
- Initial weight used as a covariate when significant ( $P < 0.05$ )

#### MATERIALS AND METHODS

- Total head — 356
  - Days on feed — 167
  - Average initial weight — 711 lbs
- On day 85, steers receiving a reimplant of Component TE-S with Tylan were revaccinated and weighed; single-implant steers remained in their respective home pen
- Ration consisted of (100% dry-matter [DM] basis): 55.6% rolled corn, 30.0% wet distillers grain with solubles, 8.0% alfalfa hay and 6.4% supplement
- Carcass performance weights were adjusted using a standard dressing percentage of 63%
- Ear checks were conducted on 100% of the cattle

## Study results

- Feed conversion improved ( $P = 0.07$ ) when cattle were reimplanted compared to a single implant of Component TE-200 with Tylan when compared on a live basis (Table 1)
- On a carcass-adjusted basis, cattle that received a reimplant had greater ( $P > 0.05$ ) final weight and average daily gain and lower ( $P < 0.05$ ) feed conversion compared to cattle receiving a single Component TE-200 with Tylan. Revalor-XS cattle had lower ( $P < 0.05$ ) feed conversion compared to a single Component TE-200 with Tylan implant. There was no significant difference between Revalor XS and Component TE-200 for average daily gain. (Table 2)
- Hot carcass weights were greater ( $P < 0.05$ ) for cattle in the reimplant program compared to cattle receiving a single implant of TE-200, with carcasses from cattle implanted with Revalor-XS being intermediate and not different ( $P > 0.05$ ) compared to the reimplant and TE-200 treatments (Table 3)
- Other carcass measurements — dressing percent, percent USDA Choice and calculated USDA yield grade were — similar ( $P > 0.05$ ) between treatments (Table 3)

**Table 1. Live performance of single-implanted steers compared to reimplanted steers**

|                                | Component TE-IS/TE-S with Tylan | Component TE-200 with Tylan | Revalor-XS | SEM  | P-value |
|--------------------------------|---------------------------------|-----------------------------|------------|------|---------|
| Initial weight, lbs            | 711                             | 711                         | 711        | 17.6 | 0.99    |
| Final weight, lbs <sup>a</sup> | 1,407                           | 1,398                       | 1,395      | 23.5 | 0.93    |
| DM intake, lbs/d <sup>a</sup>  | 24.1                            | 24.6                        | 24.3       | 0.31 | 0.47    |
| Daily gain, lbs                | 4.17                            | 4.11                        | 4.09       | 0.05 | 0.66    |
| Feed conversion                | 5.78                            | 6.00                        | 5.92       | —    | 0.07    |

<sup>a</sup>Initial weight used as a covariate in the analysis.

**Table 2. Carcass-adjusted performance of single-implanted steers compared to reimplanted steers**

|                                 | Component TE-IS/TE-S with Tylan | Component TE-200 with Tylan | Revalor-XS         | SEM  | P-value           |
|---------------------------------|---------------------------------|-----------------------------|--------------------|------|-------------------|
| Initial weight, lbs             | 711                             | 711                         | 711                | 17.6 | 0.99              |
| Final weight, lbs <sup>ab</sup> | 1,409                           | 1,384                       | 1,387              | 24.8 | 0.75              |
| DM intake, lbs/d                | 24.1                            | 24.6                        | 24.3               | 0.31 | 0.47              |
| Daily gain, lbs                 | 4.18                            | 4.03                        | 4.05               | 0.06 | 0.26              |
| Feed conversion                 | 5.75 <sup>c</sup>               | 6.10 <sup>d</sup>           | 6.00 <sup>bd</sup> | —    | 0.01 <sup>e</sup> |

<sup>a</sup>Final weight calculated by dividing hot carcass weight by a common dressing percent (0.63).

<sup>b</sup>Initial weight used as a covariate in the analysis.

<sup>ab</sup>Within a row, means without a common superscript differ ( $P < 0.05$ ).

<sup>e</sup>P-value calculated from G:F.

**Table 3. Carcass data of single-implanted steers compared to reimplanted steers**

|                                      | Component TE-IS/TE-S with Tylan | Component TE-200 with Tylan | Revalor-XS | SEM  | P-value |
|--------------------------------------|---------------------------------|-----------------------------|------------|------|---------|
| Dressing %                           | 63.1                            | 62.4                        | 62.7       | 0.30 | 0.09    |
| Hot carcass weight, lbs <sup>a</sup> | 888                             | 872                         | 874        | 15.6 | 0.75    |
| USDA Choice, %                       | 77.2                            | 80.0                        | 87.4       | 3.77 | 0.16    |
| USDA yield grade <sup>b</sup>        | 3.56                            | 3.70                        | 3.71       | 0.08 | 0.41    |

<sup>a</sup>Initial weight used as a covariate in the analysis.

<sup>b</sup>Calculated as  $2.5 + (2.5 \times \text{fat depth}) - (0.32 \times \text{REA}) + (0.2 \times 2.0 \text{ KPH}^c) + (0.0038 \times \text{HCW})$ .

<sup>c</sup>KPH = kidney, pelvic and heart fat weight.

**Table 4. Quality assurance implant checks for Nebraska trial\***

|              | Component TE-IS/TE-S with Tylan | Component TE-200 with Tylan | Revalor-XS        |
|--------------|---------------------------------|-----------------------------|-------------------|
| Proper, %    | 97.5 <sup>a</sup>               | 98.3 <sup>a</sup>           | 85.6 <sup>b</sup> |
| Abscessed, % | 2.5 <sup>ab</sup>               | 1.7 <sup>a</sup>            | 8.5 <sup>b</sup>  |
| Missing, %   | 0.3                             | 0.0                         | 5.9               |

\*Implant checks were conducted by personnel on the final day of the study at the feedyard. Ear checks were conducted on terminal implants, Component TE-S with Tylan, Component TE-200 with Tylan and Revalor-XS.

<sup>abc</sup>Means within row with uncommon superscripts differ ( $P < 0.05$ ).

## Summary

- Carcasses from steers receiving Component TE-IS with Tylan/Component TE-S with Tylan were numerically heavier than steers implanted with Component TE-200 with Tylan or Revalor-XS (15.4 lbs and 13.9 lbs heavier, respectively)
- TE-IS/TE-S reimplant program had heavier ( $P < 0.05$ ) final weights, greater ( $P < 0.05$ ) daily gains and lower ( $P < 0.05$ ) feed conversion when compared on a carcass-adjusted basis and heavier ( $P < 0.05$ ) hot carcass weights than cattle receiving one implant of Component TE-200 with Tylan
- Cattle receiving Revalor-XS performed similarly ( $P > 0.05$ ) when compared to the other implant programs, with the exception of lower ( $P < 0.05$ ) feed conversion on a carcass-adjusted basis than a single implant of Component TE-200 with Tylan
- Reimplanting improved efficiency over single-implant programs

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

### Component with Tylan

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

<sup>1</sup>Comparison of Component TE-IS with Tylan followed by Component TE-S with Tylan vs. a single Revalor<sup>®</sup>-XS or a single Component TE-200 with Tylan implant in finishing steers.

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