



## A Comparison of Four Implant Strategies on Yearling Heifers fed 138 Days in a Texas Panhandle Feedlot

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### ABSTRACT

A total of 1200 English- and Continental-cross heifers were used to compare four implant strategies on heifers fed for an average of 138 days. Animals were assigned to one of four treatment groups, each replicated three times. Treatments included:

1. Ralgro<sup>®</sup> followed by revalor<sup>®</sup>-h at day 51 with no MGA<sup>®</sup> supplementation (Z/REV),
2. Ralgro<sup>®</sup> followed by revalor<sup>®</sup>-h at day 51 with MGA<sup>®</sup> supplemented in the finishing ration (Z/REVMGA),
3. Ralgro<sup>®</sup> followed by finaplix<sup>®</sup>-h at day 51 with MGA<sup>®</sup> supplemented in the finishing ration (Z/FINMGA), or
4. Ralgro<sup>®</sup> followed by finaplix<sup>®</sup>-h and Synovex<sup>®</sup> H at day 51 with MGA<sup>®</sup> supplemented in the finishing ration (Z/SYNFINMGA).

Heifers (mean=679 lbs.) were obtained from a regional livestock auction. All heifers were slaughtered by replicate at a commercial packing plant on the same day. There were no treatment differences for any performance or carcass variables measured. For the trial, means for average daily gain (lb.), dry matter intake (lbs./day) and feed:gain were 3.11, 18.06 and 5.81, respectively. Hot carcass weights averaged 721 lbs. Dressing percentage averaged 64.99%, mean USDA yield grade was 2.23, and 67.1% of the heifers graded choice or better. Percentage of dark cutters and hard-boned carcasses averaged 2.04 and .17%, respectively, again with no treatment effects. The lack of any treatment effect on performance and carcass merit in this study indicates that a single implant of revalor-h is equal to concomitant use of estrogenic and androgenic implants, or use of androgenic implants in combination with a synthetic progestin, when used as a terminal program in heifers from 84 to 99 days prior to slaughter.

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### INTRODUCTION

revalor<sup>®</sup>-h is a new anabolic implant for feedlot heifers. Nichols (1994) reported in a 114-day feedlot study that heifers implanted once with revalor-h gained faster and more efficiently than heifers implanted with Synovex<sup>®</sup> H, and similar to heifers either implanted with finaplix<sup>®</sup>-h and supplemented with MGA<sup>®</sup>, or implanted concomitantly with Synovex H and finaplix-h. Heifers are frequently fed for longer periods of time in commercial feedlots, and therefore, anabolic strategies that include reimplant programs are often incorporated. Infor-

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mation regarding the performance of cattle implanted with revalor-h and supplemented with MGA is needed to better develop anabolic strategies. This trial was initiated to provide information regarding implant strategies that included an initial Ralgro® implant, followed by a terminal program of one of the following: revalor-h (either with or without MGA), finaplix-h and MGA, or finaplix-h plus Synovex H and MGA.

### MATERIALS AND METHODS

Twelve hundred (1200) English- and Continental-cross heifers were received from a regional sale barn, rested overnight and then assigned to one of four treatments across three replicates. Animals were randomized by assigning the first two heifers to treatment one, the next two to treatment two, and so on until each pen contained 100 heifers. Each pen was subsequently weighed and processed in a standard manner including:

- Vaccination with commercial vaccines containing IBR and Clostridial toxoids
- Dewormed with Safe-Guard® (fenbendazole) dewormer and Tiguvon® pour-on
- Horns tipped as needed
- Individually tagged
- Implanted with Ralgro (36 mg)

Supplemental MGA in treatments 2 and 3 was administered in the finishing ration at a rate of .5 mg/hd/day following a standard step-up procedure of 21 days. At 51 days, each pen was checked, weighed and reimplanted with the assigned implant (revalor-h, finaplix-h and/or Synovex H). The cattle were weighed off test with a 4% shrink and shipped to a local slaughter plant where plant and USDA personnel collected carcass information. The trial was conducted at a commercial feedlot in the Texas panhandle.

The finishing ration was based upon a 60:40 combination of flaked corn and milo and contained the following nutrient analysis (dry matter basis):

Crude Protein .....	14%
Calcium .....	0.7%
Phosphorus .....	0.35%
NEg .....	64.7 Mcal

The initial Ralgro implant sites were inspected at reimplant (51 days) for retention and abscesses by Hoechst-Roussel Agri-Vet Co. personnel. Similarly, the terminal implant sites were inspected approximately 21 days after placement by examining a random sample of 40% of each pen. As animals were railed off or died, the date and reasons were recorded. Average consumption was based upon the summation of product of actual daily amount fed divided by the daily pen population. Data were analyzed using the GLM procedure of SAS. Pen was the experimental unit. The data were analyzed as a complete random design, since cattle were all from a similar source and arrived at the feedlot within a 3-day period.

### RESULTS AND DISCUSSION

Evaluation of the implanting technique with all implants employed in this study was found to be acceptable. Fourteen (14) animals were removed from the trial because of reasons unrelated to treatment.

Heifers were administered their terminal implant treatments on day 51 of the study. Therefore, heifers were on their terminal treatment for 84 days (replicate 1) or 99 days (replicates 2 and 3) prior to slaughter. Treatment had no effect on average daily gain (ADG), dry matter (DM) intake or feed efficiency (F/G) in this study (Table 1). Mean ADG (lb.), D.M. intake (lbs./day) and F/G were 3.11, 18.06 and 5.81, respectively, for heifers in this study.

Similarly, there were no treatment effects on any carcass variables measured (Table 2). Mean carcass weights, dressing percentage, percent choice and prime, and USDA yield grade were 721

lbs., 64.99%, 67.1% and 2.23, respectively. Further, the incidence of dark cutters (mean of 2.04%) or hard-boned carcasses (mean of .17%) were unaffected by treatment.

Z/SYNFINMGA resulted in slightly lower ADG and F/G compared to treatment Z/FINMGA, indicating that no performance benefit was attained with addition of Synovex H (Table 1). Conversely, the highest average USDA yield grade was observed in Z/FINMGA and the lowest average USDA yield grade was Z/SYNFINMGA. There were no USDA Standards reported, as all carcasses which graded Standard or dark cutting were identified as "no roll" or "no grade." Although not significant, Z/REVMGA had the highest percent USDA choice (Table 2).

Economic analyses were not performed on these data due to the lack of statistical differences between treatment groups.

The lack of any treatment effect on performance and carcass merit in this study indicated that a single implant of revalor-h was equal to concomitant use of estrogenic and androgenic implants, or use of androgenic implants in combination with a synthetic progestin, when used as a terminal program in heifers from 84 to 99 days prior to slaughter.

**Table 1. Performance Data by Replicate**

	Rep	Rev-h	Rev-h + MGA	Fin-h + MGA	Syn/Fin +MGA	P =
Days on Feed	1	135	135	135	135	
	2	140	140	140	140	
	3	140	140	140	140	
	<b>Mean=</b>	<b>138.33</b>	<b>138.33</b>	<b>138.33</b>	<b>138.33</b>	
In Weight	1	669	668	661	669	
	2	696	689	681	681	
	3	683	685	683	685	
	<b>Mean=</b>	<b>682.67</b>	<b>680.67</b>	<b>675.00</b>	<b>678.33</b>	<b>0.8602</b>
Out Weight	1	1108	1098	1095	1110	
	2	1116	1123	1117	1105	
		1108	1110	1115	1103	
	<b>Mean=</b>	<b>1110.67</b>	<b>1110.33</b>	<b>1109.00</b>	<b>1106.00</b>	<b>0.9202</b>
ADG	1	3.25	3.19	3.21	3.27	
	2	3.00	3.10	3.11	3.03	
	3	3.04	3.04	3.09	2.99	
	<b>Mean=</b>	<b>3.10</b>	<b>3.11</b>	<b>3.14</b>	<b>3.09</b>	<b>0.9669</b>
DMI	1	18.03	17.70	18.46	18.29	
	2	17.85	18.05	17.39	17.64	
	3	18.54	17.90	19.79	17.09	
	<b>Mean=</b>	<b>18.14</b>	<b>17.89</b>	<b>18.54</b>	<b>17.67</b>	<b>0.4987</b>
F/G	1	5.55	5.56	5.74	5.60	
	2	5.95	5.82	5.58	5.83	
	3	6.11	5.90	6.41	5.72	
	<b>Mean=</b>	<b>5.87</b>	<b>5.76</b>	<b>5.91</b>	<b>5.72</b>	<b>0.8196</b>

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Table 2. Carcass Data by Replicate

	Rep	Rev-h	Rev-h + MGA	Fin-h + MGA	Syn/Fin +MGA	P =
HCW	1	718.24	708.35	703.30	715.17	
	2	730.17	734.78	723.41	724.39	
	3	725.72	721.45	724.74	718.89	
	Mean=	724.71	721.53	717.15	719.48	0.8058
Dressing %	1	64.82	64.51	64.23	64.43	
	2	65.43	65.43	64.76	65.56	
	3	65.50	65.00	65.00	65.18	
	Mean=	65.25	64.98	64.66	65.05	0.5028
Average YG	1	2.20	2.39	2.30	2.01	
	2	2.30	2.30	2.73	2.22	
	3	2.06	2.10	2.12	2.03	
	Mean=	2.19	2.26	2.38	2.09	0.35
% YG 4's & 5's	1	1.01	4.12	4.12	1.02	
	2	8.08	5.15	12.24	1.00	
	3	2.04	0.00	3.00	0.00	
	Mean=	3.71	3.09	6.45	0.67	0.31
% Choice & Prime	1	71.72	66.31	70.10	62.24	
	2	53.54	65.98	60.20	58.00	
	3	70.41	81.00	65.00	80.21	
	Mean=	65.22	71.10	65.10	66.82	0.88
% Dark Cutters	1	0.00	2.06	0.00	6.12	
	2	5.05	3.09	0.00	2.00	
	3	3.06	1.00	1.00	1.04	
	Mean=	2.70	2.05	0.33	3.05	0.3851
% Hard Bone	1	1.01	0.00	0.00	0.00	
	2	0.00	0.00	0.00	1.00	
	3	0.00	0.00	0.00	0.00	
	Mean=	0.34	0.00	0.00	0.33	0.5957

### RELEVANT LITERATURE

Nichols, W.T., R. Hale, T.H. Montgomery. 1994. Effects of varying forms and dosage levels of trenbolone acetate in combination with an estrogen source on feedyard heifer performance and profitability. Hoechst-Roussel Agri-Vet Co., Somerville, NJ Study No. 4667-01-03-94.

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