Technical White Paper

Growth performance and carcass characteristics of feedlot heifers fed ClariFly® Larvicide.

ClariFly® Larvicide is a feed additive that disrupts the development of fly larvae growing in the manure of treated animals. The active ingredient in ClariFly® Larvicide is diflubenzuron, which is a chitin synthesis inhibitor. Chitin is a key component that makes up the exoskeleton of insects. Fly larvae developing in diflubenzuron treated manure are unable to properly form their exoskeleton during molting and die before they can become adult flies.

A feedlot study was conducted at West Texas A&M University to evaluate the growth performance and carcass characteristics of feedlot heifers when fed ClariFly® Larvicide. The objectives were to determine whether the inclusion of ClariFly® Larvicide in a feedlot ration would impact palatability, feed intake, average daily gain, and/or feed efficiency. Additionly, carcass data was collected to determine whether the inclusion of ClariFly® Larvicide would impact carcass characteristics, such as, carcass weight, dressing percentage, ribeye area, yield grade fat thickness and/or marbling scores. Being that the main focus of this study was to evaluate performance and carcass characteristics as opposed to fly control, it was conducted for 164 days beginning in September 2007 and concluding in February of 2008 when flies are typically not present.

A total of 180 crossbred heifers obtained from auction barns and grown for approximately 60 days were weighed, blocked by weight and assigned to one of two treatment groups receiving either untreated or treated rations. Each treatment group received a 91% concentrate finishing ration that included Rumensin, Tylan and MGA. The treated ration included ClariFly® Larvicide added to deliver 0.10 mg of diflubenzuron/kg of body weight /day.

Treatments were randomly assigned to pens and heifers were randomly placed within each block after weights were taken. Heifers were housed in 18 pens (10 head/pen) that allowed 12 inches of bunk space per animal. Diets were prepared twice daily and bunks were managed to contain traces of refused feed each morning which was collected and recorded to obtain accurate daily consumption records per pen.

No heifers died or were removed during the study period. The results in the table on the next page show that the inclusion of ClariFly® Larvicide did not alter growth performance or carcass characteristics.

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Table 1. Effect of ClariFly® Larvicide on growth performance and carcass characteristics of finishing heifers.

	Treatment[a]			
Item	**Control**	**ClariFly® Larvicide**	**SE[b]**	**Observed Significance Level**
Pens	9	9	-	-
Animals	90	90	-	-
Days on feed	164	164	-	-
Initial weight, lb	723	724	22	-
Final live weight, lb	1154	1154	28	-
Final carcass-adjusted wt, lb[c]	1154	1155	31	-
Day 1 to end				
Dry matter intake, lb/d	17.27	17.20	0.47	0.84
Daily gain, lb/d, live basis	2.62	2.63	0.06	0.90
Feed efficiency, live basis	6.59	6.55	0.09	0.48
Daily gain, lb/d, carcass basis[c]	2.62	2.63	0.07	0.84
Feed efficiency, carcass basis[c]	6.60	6.54	0.09	0.62
Hot carcass weight, lb	757	757	21	0.94
Dressing percent	65.50	65.60	0.30	0.82
Ribeye area, sq.in.	14.00	14.10	0.20	0.89
Yield grade	2.95	2.83	0.12	0.49
12th rib fat thickness, in	0.66	0.63	0.02	0.36
Marbling score[d]	484	493	9	0.44

[a] Control = 91% concentrate diet, ClariFly = 91% concentrate diet containing 716 g of ClariFly/ton of DM

[b] Standard error of the least squares mean, n=9.

[c] Adjusted weight was calculated as actual final live weight with 4% shrink divided by the overall average dressing percentage (65.55). Carcass-adjusted daily feed efficiency were calculated using carcass-adjusted final weight.

[d] Select = 300 to 399, low Choice = 400 to 499, etc.