

formaldehyde-treated corn. Ammonia addition increased feed intake and rate of gain slightly, possibly because of the extra protein supplied since this was a low-protein ration.

## **Trial 2**

With the high level of ammoniation, HMC had a strong ammonia odor. Rate of gain was not influenced by ammoniation of high moisture corn or milo (Table 3). Efficiency of feed use tended to decrease with ammoniation of the grain. Calculated net energy for gain was decreased a mean of 4 percent by the low level and 6 percent by the high level of ammonia addition. With the higher protein and higher ammonia level, rib eye area and yield grade were reduced (Table 4) although live and carcass weights were unchanged.

Results show no promise of enhancing the nutritive value of high moisture grains by ammonia addition. Odors made handling of 0.5 percent ammoniated corn distasteful, but did not reduce acceptability by steers.

## **Literature Cited**

Thornton, J.H., F.N. Owens and M. Arnold 1977. Okla. Agr. Exp. Sta. Res. Rep. MP-101, p. 173.

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# **Ronnel or Monensin for Feedlot Heifers**

**F. N. Owens, D. R. Gill and R. W. Fent**

## **Story in Brief**

Ronnel was fed with an 89 percent whole shelled corn ration to 140 growing heifers in a 137 day trial. Ronnel at 64 g per ton of feed tended to increase rate of gain (3.6 percent). No effects on carcass composition were apparent. Monensin at 30 g per ton of feed improved rate of gain (7.2 percent) and feed efficiency (11.1 percent).

## **Introduction**

Ronnel<sup>1</sup> has been used for many years as a heel fly, horn fly and lice control agent for cattle. Trials from Kansas and Montana suggest that feeding of Ronnel at 64 to 96 g per ton may enhance rate of gain and feed efficiency of feedlot steers by 3 to 8 percent. This trial was designed to determine the influence of Ronnel on growth rate and feed efficiency of feedlot heifers. Three levels of Ronnel and one level of monensin were tested in the feeding study.

## **Experimental Procedures**

One hundred-forty charolais by black badly heifers, mean initial weight of 679 lbs, were stratified by weight and randomly allotted, seven per pen, to 20 pens. Four pens

<sup>1</sup>Trade mark of Dow Chemical Co., Midland, MI.

were randomly assigned to each treatment. Treatments consisted of a negative control, three levels of supplemental Ronnel (64, 80 and 96 g per ton) sprayed onto the feed during the final mixing, and one level of monensin (30 g per ton) incorporated into the pelleted supplement. Ration composition is presented in Table 1.

At the start of the trial, heifers were vaccinated for bovine rhinotracheitis, leptospira pomona, bovine virus diarrhea, parainfluenza 3, blackleg, malignant edema and were dewormed with thiabendazole paste following trucking from Arnette, Okla.

Feed was available *ad libitum* from self-feeders which were filled every four to seven days. On weigh-days, all feed was removed manually, weighed and re-fed. Feed samples were taken at each feeding and composited for analysis.

Cattle were weighed initially following 20 hr with neither feed nor water. Cattle were weighed full at subsequent 28-day intervals. On day 136, heifers were trucked to Oklahoma City for slaughter and carcass data were obtained. Final weights were calculated from hot carcass weight assuming a dressing percentage of 62 percent.

**Table 1. Ration composition.**

Ingredient	%
Whole shelled corn	89
Cottonseed hulls	5
Urea supplement	6

**Table 2. Animal performance.**

	Ronnel				Monensin
	0	64	80	96	30
Animals, no.	28	28	28	28	28
Pens, no.	4	4	4	4	4
Weight					
Initial	678	682	681	678	678
56 day	873	897	878	884	879
112 day	1052	1084	1064	1062	1082
135 day	1135	1154	1146	1136	1167
Adj. final	1091	1107	1093	1096	1117
Daily gain, lb					
0-56	3.49	3.83	3.51	3.68	3.58
56-137	3.23 <sup>a</sup>	3.18 <sup>a</sup>	3.31 <sup>ab</sup>	3.11 <sup>a</sup>	3.57 <sup>b</sup>
0-137	3.33	3.45	3.42	3.34	3.57
Feed intake, lb					
0-56	21.56 <sup>b</sup>	21.43 <sup>b</sup>	21.48 <sup>b</sup>	21.31 <sup>b</sup>	19.58 <sup>a</sup>
56-137	23.93	23.96	23.68	23.06	23.16
0-137	22.96 <sup>b</sup>	22.93 <sup>b</sup>	22.78 <sup>ab</sup>	22.34 <sup>ab</sup>	21.70 <sup>a</sup>
Feed/gain					
0-56	6.23	5.61	6.16	5.80	5.51
56-137	8.94	9.31	9.04	8.84	7.91
0-137	7.64 <sup>b</sup>	7.40 <sup>ab</sup>	7.62 <sup>b</sup>	7.33 <sup>ab</sup>	6.79 <sup>a</sup>

<sup>ab</sup> Means with different superscripts differ statistically ( $P < .05$ ).



## Results and Discussion

Daily gain and feed/gain for the first 56 days were improved slightly 5.3 and 6.0 percent) by Ronnel ( $P>.10$ ) (Table 2). Feed intake was not changed with Ronnel addition. In the last half of the trial, Ronnel had little effect on performance so that for the 137 days, averaged across concentrations, Ronnel improved daily gain by 2.2 percent, improved feed/gain by 2.5 percent and decreased intake by 1.2 percent. Intake tended to decline as Ronnel level increased. The most effective concentration of Ronnel was 64 g per ton with which overall rate of gain and feed efficiency were enhanced by 3.6 and 3.1 percent, respectively.

Carcass characteristics were not altered statistically by Ronnel feeding (Table 3) although with Ronnel feeding tendencies for decreased rib eye area and increased marbling score and federal grade were apparent. Performance response to Ronnel was less than expected based on results cited earlier.

Overall rate of gain and feed efficiency response to added monensin (7.2 and 11.1 percent) were considerably higher than we have obtained previously in four feedlot trials. Monensin reduced feed intake by 9.2 percent the first 56 days and 3.2 percent thereafter, for an overall reduction of 5.5 percent. Statistically, monensin had no effect on carcass characteristics.

**Table 3. Carcass characteristics.**

g/ton	Ronnel				Monensin	
	0	64	80	96	30	SE
Carcass wt., #	677	687	677	680	693	9.1
Dressing percentage	59.6	59.5	59.1	59.8	59.3	.36
Liver score	.07	0	0	.04	0	.036
Rib eye area						
Sq. in.	13.03	12.91	12.85	12.80	13.30	.187
Sq. in/cwt	1.93	1.88	1.90	1.89	1.93	.026
KHP, %	2.45	2.45	2.30	2.36	2.32	.105
Fat thickness, in.	.44	.48	.42	.42	.42	.018
Marbling	11.14	11.82	11.32	11.57	10.95	.272
Federal grade	11.1	11.5	11.2	11.4	10.9	.23
Cutability	51.01	50.60	51.08	50.94	51.25	.166