

## USING ALFALFA AS A SUPPLEMENTAL PROTEIN FOR FINISHING STEERS ON COMPLETE MIXED RATIONS SELF FED

Complete mixed rations which include alfalfa as 5% of the ration have performed well in trials at this station in the past. However, performance on higher levels of alfalfa had not been determined at this station prior to the beginning of these trials in 1973.

There is concern about the problem of bloat, and its relationship to the level of alfalfa in the ration. Some producers have plenty of alfalfa and would like to use as much as is practicable. Others have limited amounts and want to use it to the best possible advantage, in combination with other hay. The value of soybean oilmeal as an additional protein in self-fed rations is also being determined.

Self-fed rations containing no alfalfa, and alfalfa in the amount of 5%, 15% and 25% of the total ration, and a 5% alfalfa ration which included soybean oilmeal as a supplemental protein were fed to steer calves, from an average starting weight of 420 pounds to slaughter weights of about 1050 pounds.

The feeding period in 1973 extended from February 2 until November 19, a total of 308 days. In 1974 the 340 day feeding period was from November 1, 1973 to October 7, 1974, and in 1975 the 314 day period was from November 19, 1974 to September 29, 1975.

Summary: Neither the level of alfalfa in the ration nor the addition of soybean oilmeal protein supplement affected gains significantly. Feed costs were highest for the ration supplemented with soybean oilmeal, but gains were no better with this ration than with the rations not supplemented.

**Table 12 - Composition of self-fed rations by weight for the feeding period November 19, 1974 to September 29, 1975<sup>1</sup>**

Lot 4 - 5% alfalfa, 20% tame hay Lot 6 - 15% alfalfa, 10% tame hay Lot 8 - 25% alfalfa, no tame hay Lot 5 - no alfalfa, 25% tame hay	
November 19 - November 30	25% oats, 75% hay
December 1 - January 6	50% oats, 50% hay
January 7 - February 24	65% oats, 10% barley, 25% hay
February 25 - April 7	50% oats, 25% barley, 25% hay
April 8 - June 2	40% oats, 35% barley, 25% hay
June 3 - September 29	30% oats, 45% barley, 25% hay
Lot 7 - 5% alfalfa, 20% tame hay, 7.4% soybean oilmeal	
Nov. 19 - Nov. 30	25% oats, 75% hay
Dec. 1 - Jan. 6	50% oats, 50% hay
Jan. 7 - Feb. 24	65% oats, 25% hay, 2.6% barley, 7.4% SBOM
Feb. 25 - April 7	50% oats, 25% hay, 17.6% barley, 7.4% SBOM
April 8 - June 2	40% oats, 25% hay, 27.6% barley, 7.4% SBOM
June 3 - Sept. 29	30% oats, 25% hay, 37.6% barley, 7.4% SBOM
<sup>1</sup> All lots received minerals at the rate of 10 pounds di-calcium phosphate and 20 pounds granulated salt, added to 1000 pounds of mixed feed for the first two months, after which the di-calcium phosphate was reduced to 5 pounds.	

**Table 13 - Weights, gains and feed costs in the 1975 trial comparing alfalfa and soybean oilmeal as a protein supplement, fed to Hereford steers**

	Self-fed rations including:				
	No alfalfa	5% alfalfa	15% alfalfa	25% alfalfa	Soybean oilmeal
Initial wt., lbs.	471	472	469	474	477
Final wt., lbs.	1069	1104	1049	1076	1113
Gain/hd., lbs	598	632	579	602	636
Days fed	314	314	314	314	314
Avg. daily gain	1.90	2.01	1.84	1.91	2.02
Lbs. feed/hd./day	19.0	20.0	19.1	17.7	17.4
Feed cost/100 lbs. gain, \$	43.98	43.04	46.31	41.75	39.73
Feed cost/hd./day, $\frac{\$}{\text{hd}}$	0.835	0.865	0.852	0.797	0.803

**Table 14 - Three year average weights, gains and feed costs in the trial comparing alfalfa and soybean oilmeal as a protein supplement, fed to Hereford steers**

	Self-fed rations including:				
	No alfalfa	5% alfalfa	15% alfalfa	25% alfalfa	Soybean oilmeal
Initial wt., lbs.	436	437	436	438	439
Final wt., lbs.	1059	1100	1058	1074	1069

Gain/hd., lbs	623	663	622	636	630
Days fed	321	321	321	321	321
Avg. daily gain, lbs.	1.94	2.07	1.94	1.98	1.96
Lbs. feed/hd./day	17.7	18.8	19.3	18.0	18.0
Feed cost/100 lbs. gain, \$	32.59	32.60	35.66	33.31	35.91
Feed cost/hd./day, $\frac{\$}{\text{hd}}$	0.63	0.67	0.68	0.64	0.71

**Table 15 - Average daily consumption in the 1975 trial comparing alfalfa and soybean oilmeal as protein supplements**

Ingredients	Self-fed rations including:				
	No alfalfa	5% alfalfa	15% alfalfa	25% alfalfa	Soybean oilmeal
Oats, lbs.	7.80	8.39	7.91	7.14	7.02
Barley, lbs.	5.30	5.44	5.27	5.03	3.82
Soybean oilmeal, lbs.	---	---	---	---	1.16
Tame hay, lbs.	5.43	4.73	2.76	0.96	4.18
Alfalfa, lbs.	---	0.94	2.69	4.15	0.80
Di-cal, lbs.	0.09	0.10	0.09	0.09	0.09
Trace mineral salt, lb.	0.37	0.39	0.37	0.35	0.33

<b>Table 16 - Carcass data - Hereford steers, 1973 protein supplement trial</b>					
	Self-fed rations including:				
	No alfalfa	5% alfalfa	15% alfalfa	25% alfalfa	Soybean oilmeal
Final wt., lbs.	1059	1106	1091	1098	1015
Hot carcass wt., lbs.	643	671	644	654	610
Dressing %	61	61	59	60	60
Grades - Choice	4	4	4	2	5
Good	3	2	2	5	2
Carcass value, \$	373	397	390	391	365
Net \$ <sup>1</sup>	265	284	257	273	207
<sup>1</sup> Net \$ = carcass value minus feed cost.					

<b>Table 17 - Carcass data - Hereford steers, 1974 protein supplement trial</b>					
	Self-fed rations including:				
	No alfalfa	5% alfalfa	15% alfalfa	25% alfalfa	Soybean oilmeal
Final wt., lbs.	1049	1090	1035	1049	1078

Hot carcass wt., lbs.	621	643	619	632	648
Dressing %	59	59	60	60	60
Grades - Choice	6	4	6	5	5
Good	1	3	1	2	2
Carcass value, \$	383	385	382	385	394
Net \$ <sup>1</sup>	148	127	128	126	121
<sup>1</sup> Net \$ = carcass value minus feed cost.					

<b>Table 18 - Carcass data - Hereford steers, 1975 protein supplement trial</b>					
	Self-fed rations including:				
	No alfalfa	5% alfalfa	15% alfalfa	25% alfalfa	Soybean oilmeal
Final wt., lbs.	1059	1100	1058	1074	1069
Hot carcass wt., lbs.	636	658	627	637	661
Dressing %	59	60	60	59	59
Grades - Prime	2	1	---	---	---
Choice	4	5	7	7	5
Good	1	1	---	---	1
Carcass value, \$	466	484	463	472	482

Net \$ <sup>1</sup>	203	212	195	221	229
<sup>1</sup> Net \$ = carcass value minus feed cost.					

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