INFLUENCE OF AMAFERM® AND BARLEY SUPPLEMENTATION ON IN SITU NUTRIENT DEGRADABILITY AND RUMINAL pH IN STEERS FED LOW-QUALITY HAY

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AMAFERM increased digestibility of low quality forage and lowered rumen pH.

SUMMARY

DOSE OF AMAFERM USED
2g per head, per day

Feeding AMAFERM resulted in higher DM, NDF and CP degradabilities of low-quality prairie grass hay at 16 hours post-supplementation, and improved rumen pH at 1 hour and 24 hours post-supplementation.

VALUE

Increasing the digestibility of a low-quality forage and stabilizing the rumen environment will allow for improved performance through increased nutrient absorption.

PROTOCOL

Type of Animals/Experimental Units

- Ruminally cannulated Hereford steers

Number of Animals/Experimental Units

- Four

Trial Design

- 4 x 4 Latin Square, 2 x 2 factorial

PROTOCOL (CONTINUED)

Treatments

1. Control
2. Control + barley (2.73 kg/h/d)
3. Control + AMAFERM (2 g/h/d)
4. Control + barley (2.73 kg/h/d) + AMAFERM (2 g/h/d)

Diet Information

- Prairie grass hay ad-libitum + isonitrogenous supplements to achieve 0.9 kg ADG

Data Collection

- In situ degradabilities of DM, CP and NDF at 0, 4, 8, 12, 16, 24, 36, 48 and 72 hours of incubation
- Ruminal pH at -2, 0, 1, 3, 6, 9, 12, 15 and 24 hours post supplementation

DISCUSSION OF RESULTS

- Barley supplementation had no effect on in situ CP degradability, but decreased ($P < 0.05$) forage DM and NDF degradability at 16, 36, 48 and 72 hours after feeding (data not shown)
- Steers fed AMAFERM had higher ($P < 0.1$) in situ DM, CP and NDF degradabilities at 16 hours compared with non-AMAFERM supplemented steers (Tables 1 and 2)
- AMAFERM supplementation tended ($P < 0.16$) to enhance in situ DM and NDF degradabilities more than the Controls at 8 and 36 hours of incubation (Table 2)
- Steers fed barley had lower ($P < 0.1$) ruminal pH at 3, 6 and 9 hours post-supplementation (data not shown)
- AMAFERM supplementation increased ($P < 0.1$) ruminal pH above the non-AMAFERM supplemented steers at 1 and 24 hours after feeding
- Supplementation of AMAFERM tended ($P < 0.16$) to increase ruminal pH at 9 hours after supplementation (Table 3)

Table 1
In situ DM degradability of prairie grass hay incubated in the rumen of steers

	% InSitu Degradability	
Time (hours)	**Control**	**AMAFERM**
0	20.88	21.17
4	22.59	22.80
8	25.32	26.53
12	29.03	30.67
16	31.76[b]	35.11[a]
24	40.28	42.46
36	49.13	53.42
48	56.43	58.58
72	66.06	66.13

[a, b] Significantly different $P < 0.01$

Table 2
In situ NDF degradability of prairie grass hay incubated in the rumen of steers

	% NDF Degradability	
Time (hours)	**Control**	**AMAFERM**
0	8.09	7.06
4	8.23	8.28
8	11.88	13.35
12	16.28	18.71
16	19.42[b]	24.40[a]
24	30.29	33.70
36	41.60	47.73
48	50.89	54.06
72	63.29	63.42

[a, b] Significantly different $P < 0.01$

Table 3
Influence of AMAFERM supplementation on ruminal pH of steers

	Rumen pH	
Time (hours)	**Control**	**AMAFERM**
-2	6.53	6.58
0	6.44	6.50
1	6.36[b]	6.47[a]
3	5.97	6.06
6	5.84	5.88
9	5.73	5.97
12	5.94	6.17
15	6.08	6.12
24	6.28[b]	6.46[a]

[a, b] Significantly different $P < 0.01$

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