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The effects of leafy spurge hay on sheep

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A winter feeding trial was conducted in 1981 at the Montana Experiment Station at Fort Ellis, Bozeman, Montana to determine if leafy spurge hay had deleterious effects upon sheep.

Three groups, each containing 5 ewes, were feed different rations of hay. Group I received grass hay, group II, an increasing level of a leafy spurge hay and group III received leafy spurge hay. Each animal received 4 pounds of hay per day. Weights were taken weekly and blood was analyzed every 3 weeks to determine the effect of leafy spurge hay on internal organs of the test animals.

Table 1. The results of the hay analysis.

Hay	Protein	Ash	Phosphorus	Calcium	Ether extractable	fiber	Net energy [a] (Mcal/kg)
	%						
Leafy spurge	9.1	6.9	0.22	0.85	2.8	32	1.09
Grass	11.4	6.9	0.23	0.30	0.8	39	1.25

[a]Estimated from NE = 1.991 - 0.023 (%CF).

Table 2. Weight change and average total blood protein for-3 groups of sheep during the 3-month feeding trial.

Group - Hay source	Body weight change (lb)[a]	Total blood protein (GM/DL)[a]
I Control - grass hay	+5.4 b	7.04 b
II Increasing level of leafy spurge hay	-5.4 c	6.60 c
III All leafy spurge hay	-9.2 d	6.2 d

[a] Means within a column followed by a different letter are significantly different at the 5% level according to the l.s.d. test of significance.

The results of the hay analysis indicates that while the 3 experiment groups were receiving equal amounts of hay, they were not obtaining an equal quantity of energy for maintenance (Table 1). The 9.1% protein in the leafy spurge is considered adequate for mature, non-pregnant ewes. There was a correlation between the amount of leafy spurge hay fed and amount of weight gain (Table 2).

The total blood protein levels indicate that group I received more dietary protein than the other groups. Although the blood protein differences were significant among groups, all protein levels were in the “normal” range for sheep, therefore the leafy spurge hay did not injure the animals tested.