

EFFECTS OF ERGOTS FROM CLAVICEPS PURPUREA ON PRODUCTIVITY OF SHEEP

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Field cases of 'bovine hyperthermia', in which reduced growth and milk production were observed in several herds of beef and dairy cattle from New South Wales (Burgess et al. 1986), subsequently were shown to be due to ingestion of ergots from Claviceps purpurea which contaminated feed grains (Jang et al. 1987). Recent observations indicate that significant infestation of pasture ryegrass with Claviceps purpurea may occur (L.W. Burgess, personal communication) raising the possibility of reduced productivity of ruminants grazing infected pastures. To date there is little information on the effects of ingestion of ergots of Claviceps purpurea in sheep so the purpose of the present study was to evaluate effects of the ergots on productivity of growing and lactating sheep.

Lactating crossbred ewes (n=4) and weaned crossbred lambs (n=4) were kept in metabolism cages. Ewes were fed chopped lucerne:rolled barley grain (60:40), to meet requirements whereas lambs were fed chopped lucerne to support growth of ≤ 150 g/d. Ewes were milked by hand twice daily. Measurements were made before (period 1; 10 days) during (period 2; 4 days for ewes, 10 days for lambs) and after (period 3; 10 days) oral administration of a suspension of ground ergots. The ergots were administered at the daily rate of 6g/kg feed consumed per day during period 1. Results are summarised in the Table.

Lactating ewes ϕ				Growing lambs			
Period	1	2	3	Period	1	2	3
Feed intake(g/d)	2088 ^a	1036 ^b	1655 ^c	Feed intake	1356 ^a	624 ^b	1097 ^c
Liveweight (kg)	56.3 ^a	55.6 ^b	53.8 ^c	Liveweight	36.6	35.3	35.1
Milk yield (g/d)	1341 ^a	811 ^b	694 ^b	Wool mass-greasy	5.53 ^a	4.52 ^b	5.40 ^a
Milk fat (g/kg)	51.0 ^a	84.6 ^b	81.3 ^b	(mg/cm ²)-clean	4.69 ^a	3.53 ^b	4.05 ^c
				Fibre			
				diameter (u)	29.6 ^a	26.3 ^b	28.3 ^c

a,b,c - values differing significantly have different superscripts, $P < 0.05$

ϕ data for one ewe are excluded.

It is clear that ingestion of ergots had significant effects on productivity of both lactating and growing sheep. Responses of individual sheep varied, with severe effects being observed in two lactating ewes and one lamb. In the latter, a gangrenous effect was seen - the tip of the tongue sloughed off. All lambs and three of the ewes recovered feed intake after withdrawal of ergots; the fourth ewe did not regain appetite and was removed from the experiment. Further studies should be conducted to establish the significance of ergotism in sheep in grazing situations.

BURGESS, L.W., BRYDEN, W.L., JESSUP, T.M., SCRIVENER, C.J. and BARROW, K.D. (1986). Proc.Nutr.Soc.Aust. 11: 120.

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