

The evaluation of *Sericea Lespedeza* in a partial total mixed ration for dairy cows

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Sericea Lespedeza (*Lespedeza cuneata*), also known as “armmans-lusern”, is a perennial erect growing, deep-rooted drought tolerant non-bloating legume. It is very tolerant of acid soils high in aluminium and grows well on low-fertility soils where most other legumes do not thrive.

Sericea hay was evaluated as a replacement for *Eragrostis* hay in a total mixed ration (TMR) fed to high producing multi-parous Holstein cows in early lactation as a part of their diet. The cows received 15 kg (*ca.* 13 kg DM) of the TMR daily, formulated for 150 g CP/kg DM. Urea (0.5%) was used in the control diet to ensure the diets were iso-nitrogenous. The TMR comprised 31.7% dried brewers grains, 22.4% hay, 16.4% of a molasses mineral mixture, 25.3% maize, 2.6 % cotton oilcake and 0.1% flavomycin. The TMR was split into two feeds daily following milking. The remainder of their diet comprised irrigated perennial ryegrass-clover grazing with the cows grazing together as a group.

The treatment group received the same ration with mature *Sericea* hay replacing the 22.4% *Eragrostis* hay in the ration. The *Eragrostis* hay lands were fertilized with 300 kg LAN per ha per annum. The cows were adapted to the diets for two weeks prior to a six week recording period. Thirty eight lactating cows, 6 to 12 weeks into lactation, were randomly allocated to the treatments according to calving dates on Grootvlei farm, Cedarville in East Griqualand.

The chemical composition of *Sericea* and *Eragrostis* hay is presented in Table 1 and milk yield data in Table 2.

Table 1 The chemical composition of *Sericea* and *Eragrostis* hay (DM basis)

Species	CP (g/kg)	Fat (g/kg)	ADF (g/kg)	NDF (g/kg)	Ca (g/kg)	P (g/kg)	Mg (g/kg)	K (g/kg)	Na (g/kg)
<i>Sericea</i> - young	200.5	22.4	336.9	602.0	8.7	2.0	2.0	13.2	0.2
- mature	125.0	19.2	523.4	733.8	9.8	1.3	2.1	8.8	0.2
<i>Eragrostis</i>	64.9	36.2	469.1	854.5	2.4	2.0	0.9	9.4	0.2

The cost of production of the *Eragrostis* hay was R 316 per ton and that of *Sericea* R 134 per ton, a saving of 61 c/cow /day.

Table 2 The milk yield and composition of cows fed either *Sericea* or *Eragrostis* hay as their roughage source in a partial TMR

Treatment	Initial yield				Final yield			
	Milk kg/d	BF %	Prot %	FCM kg/d	Milk kg/d	BF %	Prot %	FCM kg/d
<i>Eragrostis</i>	28.2	3.39	2.95	26.16	27.25	3.50	2.95	25.2
<i>Sericea</i>	25.8	3.55	3.06	24.04	25.66	3.73	3.13	24.6

No significant differences were recorded for milk production over the trial period. The *Eragrostis* group inadvertently started out with a higher milk yield, but with a lower BF content. When converted to 4% fat-corrected milk there was a minimal difference between the treatments. It is concluded that *Sericea* hay was successful in substituting *Eragrostis* hay in the diet of high producing dairy cows.