

INTRODUCTION

- Consumption by ruminants of forages such as Sericea lespedeza, high in condensed tannins, can have desirable effects such as increased ruminal escape of intact dietary protein and decreased ruminal methane emission.
- However, adverse effects have been observed as well, including decreased feed intake and digestibility.
- The occurrence and magnitude of these impacts vary with many factors, among which ruminant species is a notable one.
- Therefore, objectives were to determine effects of dietary levels of alfalfa and lespedeza hay on feed intake, ADG, and gain efficiency by growing Alpine doelings and Katahdin ewe lambs.

Effects of breed, diet, and period on DMI, ADG, gain efficiency

Item	Interaction		Breed		Diet			Period				
	Breed	Diet	ALP	KAT	ALF	ALF:LES	LES	1	2	3	4	
DMI												
g/d			1274 ^a	1817 ^b	1600	1584	1452	1242 ^a	1635 ^b	1682 ^b	1623 ^b	
	ALP							1063 ^c	1361 ^b	1372 ^b	1300 ^b	
	KAT							1420 ^b	1909 ^c	1992 ^c	1946 ^c	
% BW			3.84	4.14	3.97	4.10	3.89	4.14 ^b	4.45 ^c	3.94 ^b	3.43 ^a	
g/kg BW^{0.75}			91.9 ^a	105.9 ^b	99.3	101.7	95.8	95.6 ^b	109.2 ^c	100.3 ^b	89.6 ^a	
ADG (g)			88 ^a	180 ^b	159 ^c	132 ^b	111 ^a					
		ALF						167 ^e	204 ^f	137 ^{cde}	129 ^{cd}	
		ALF:LES						147 ^{de}	169 ^e	125 ^{cd}	88 ^{ab}	
		LES						149 ^{de}	103 ^{abc}	116 ^{bcd}	76 ^a	
ADG:DMI (g/kg)			72 ^a	104 ^b	101 ^b	84 ^a	79 ^a					
	ALP							93 ^{cd}	84 ^{bc}	73 ^b	38 ^a	
	KAT							147 ^e	108 ^d	86 ^{bc}	75 ^{bc}	

MATERIALS AND METHODS

- The study occurred from January to July of 2019 and consisted of 4 periods of 42, 42, 42, and 47 d.
- 24 Alpine doelings (ALP; initial BW and age of 25.3±0.55 kg and 10.4±0.11 mo, respectively) and 24 Katahdin ewe lambs (KAT; 28.3±1.02 kg and 9.6±0.04 mo, respectively)
- Animals were housed in pens fitted with Calan feeding gates.
- The treatment arrangement was a 2 × 3 factorial, with two animal species and three dietary treatments.
- Diets consumed were 75% coarsely ground hay and 25% concentrate.
- Forage was alfalfa (ALF), a 1:1 mixture of alfalfa and lespedeza (ALF:LES), and lespedeza (LES).
- Dietary concentration of condensed tannins - 0.8, 5.3 and 9.2% for ALF, ALF:LES, and LES, respectively.

RESULTS AND DISCUSSION

- DMI in g/d was greater for KAT vs. ALP, similar between animal types (AT) in % BW, but greater for KAT in g/kg BW^{0.75}.
- An interaction between AT and period in DMI in g/d was due to a smaller AT difference in period 1 than later.
- ADG decreased as the dietary level of LES increased, although change varied among periods.
- ADG in g/d of KAT was approximately twice that of ALP.
- In accordance with the difference in g/kg BW^{0.75} of DMI and presumably a slightly lower maintenance energy requirement for KAT vs. ALP, ADG:DMI was greater for KAT, although the magnitude of difference also varied among periods.
- ADG:DMI was greatest among diets for ALF.
- In conclusion, the AT responded similarly to dietary characteristics as impacted by the different forage levels.