

C. Helander<sup>1</sup>, R. Eilersen<sup>2</sup>, P. Nørgaard<sup>2</sup>, A. Arnesson<sup>1</sup> and E. Nadeau<sup>1</sup>

<sup>1</sup>Department of Animal Environment and Health, Swedish University of Agricultural Sciences, Skara, Sweden.

<sup>2</sup>Department of Basic Animal and Veterinary Sciences, Faculty of Life Sciences, University of Copenhagen, Frederiksberg C, Denmark.

Corresponding author: Carl.Helander@hnh.slu.se

## Introduction

Sheep can increase their voluntary feed intake as they are able to eat faster when fed chopped compared with long silage. The simultaneous feeding of silage and concentrate in a total mixed ration (TMR) can increase intake and improve rumen function.



## Materials and Methods

### Experimental design

Seven Finewool/Dorset ewes per treatment were studied during late gestation and lactation at Götala Research Centre, Sweden.

Three dietary treatments, with *ad libitum* feeding of grass silage containing *Lolium perenne* L., *Festuca pratensis* L. and *Phleum pratense* L. and 0.8 kg of concentrate, were given once daily.

LS	CS	TMR
Separate	Separate	Mixed
Long silage	Chopped silage	Chopped silage

### Measurements

Feed intake, chewing behaviour, body weight and condition.

Table 1. Particle size and chemical composition of grass silage.

	Late gestation		Lactation	
	Long silage	Chopped silage	Long Silage	Chopped silage
Particle size, mm	170	12	170	13
DM, g kg <sup>-1</sup>	528	600	611	551
CP, g kg <sup>-1</sup> DM	87	92	89	91
NDF, g kg <sup>-1</sup> DM	571	568	604	570
ME, MJ kg <sup>-1</sup> DM	11.0	11.1	10.9	10.6

## Aim

To investigate the effects of :

chopping of grass silage and mixing of grass silage and concentrate on feed intake and chewing activity in ewes around parturition.

## Conclusions

Mixing chopped grass silage with concentrate increased the feed intake in ewes.

Chopping of silage increased ruminating time per kg of DM intake and per kg of silage NDF intake.

Ewes had a higher DM intake and a shorter ruminating time in lactation than in gestation.



## Results

Table 2. Body weight (BW), body condition score (BCS), dry matter intake (DMI), ruminating time and chewing time per kg DMI.

	Late gestation			Lactation			P - value	
	LS	CS	TMR	LS	CS	TMR	M	D
BW, kg	92	95	94	91	90	92	**	NS
BCS	3.1	3.2	3.4	3.0	2.9	3.0	**	NS
DMI, kg per day	2.6	2.5	2.6	3.5	2.9	3.8	***	*
Ruminating time, min per kg DMI	139	192	170	86	137	112	***	***
Chewing time, min per kg DMI	272	289	264	198	253	210	***	NS

## Acknowledgements

We thank The Swedish Farmers' Foundation for Agricultural Research, AgroVäst, The Foundation for Swedish Sheep Research and SLU for funding. We also thank Jonas Dahl and David Johansson for animal care.