

New Zealand Society of Animal Production online archive

This paper is from the New Zealand Society for Animal Production online archive. NZSAP holds a regular annual conference in June or July each year for the presentation of technical and applied topics in animal production. NZSAP plays an important role as a forum fostering research in all areas of animal production including production systems, nutrition, meat science, animal welfare, wool science, animal breeding and genetics.

An invitation is extended to all those involved in the field of animal production to apply for membership of the New Zealand Society of Animal Production at our website www.nzsap.org.nz

[View All Proceedings](#)

[Next Conference](#)

[Join NZSAP](#)

The New Zealand Society of Animal Production in publishing the conference proceedings is engaged in disseminating information, not rendering professional advice or services. The views expressed herein do not necessarily represent the views of the New Zealand Society of Animal Production and the New Zealand Society of Animal Production expressly disclaims any form of liability with respect to anything done or omitted to be done in reliance upon the contents of these proceedings.

This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](http://creativecommons.org/licenses/by-nc-nd/4.0/).



You are free to:

Share— copy and redistribute the material in any medium or format

Under the following terms:

Attribution — You must give [appropriate credit](#), provide a link to the license, and [indicate if changes were made](#). You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

NonCommercial — You may not use the material for [commercial purposes](#).

NoDerivatives — If you [remix, transform, or build upon](#) the material, you may not distribute the modified material.

<http://creativecommons.org.nz/licences/licences-explained/>

Summary only

THE NUTRITIVE VALUE OF SNOW TUSSOCK
(*CHIONOCHLOA* ZOTOV)

J. C. MACRAE

Plant Chemistry Division, DSIR, Palmerston North

FOUR SPECIES of snow tussock (*Chionochloa flavescens*, *Chionochloa rigida*, *Chionochloa rubra* and *Chionochloa Q*) were collected from central South Island. Chemical analysis showed that, although the structural carbohydrate levels of these grasses were reasonably high (cellulose 25 to 35%, hemicellulose 21 to 27%) and the lignin levels reasonably low (8 to 11%), thus suggesting that ruminants could probably utilize them successfully, the nitrogen levels of all four grasses were very low (0.43 to 0.75%).

After drying, single-species digestibility trials were performed on each grass using three sheep. A summary of the results obtained is given in Table 1.

TABLE 1: A SUMMARY OF DIGESTIBILITY DATA

	<i>Chionochloa</i> species			Q
	<i>flavescens</i>	<i>rigida</i>	<i>rubra</i>	
<i>Ad lib.</i> dry matter intake (g/day)*	340	340	430	400
Digestibility coefficients:				
Dry matter†	57	54	45	43
Organic matter	59	54	44	44
Nitrogen	17	39	— ve	— ve
Cellulose	62	55	50	54
Hemicellulose	74	64	62	56

*All values are average of 3 sheep.

†Includes mineral supplement measured as *ad lib.* lick.

It can be seen that, although the daily intakes of *C. flavescens* and *C. rigida* were not as high as *C. rubra* and *C. Q*, the digestibility coefficients were much higher and are in fact not dissimilar to ones expected from a medium to poor quality hay. However, with all species the coefficients for nitrogen digestibility were very low; with *C. rubra* and *C. Q* the sheep were in a negative nitrogen balance.

It was thought that the voluntary feed intake and the overall utilization of all these tussocks by sheep was probably limited by the lack of nitrogen available for microbial growth in the rumen. An investigation is under way to see if a small nitrogen supplementation will improve the utilization of these snow tussocks by sheep.