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

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.

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/licenses/by-nc-nd/4.0/
Differences in animal production on New Zealand pasture species cannot be fully accounted for by intake of feed alone (Ulyatt, 1969), and utilization by the animal of ingested feed must play an important role. Variations in volatile fatty acids (VFA) produced in the rumen have been cited as a possible reason for differences between pastures species. A preliminary investigation of this role of VFA is reported here.

Nine wether sheep were caged indoors and three fed on each of, 'Grasslands 4700' white clover (C), 'Grasslands Manawa' ryegrass (S), and 'Grasslands Ruanui' perennial ryegrass (P), freshly cut. Ruminal VFA production was measured by the isotope infusion and sampling technique of Gray et al. (1967). Digestibility determinations were carried out concurrently. The results are summarized in Table 1.

There were no significant differences in intake of the three feeds but the VFA production rates from P and C were significantly higher than from S. The proportion of digestible energy accounted for by VFA production was significantly higher for P than for S.

These results are lower than published estimates of VFA production measured by the isotope dilution method for dry feeds (Gray et al., 1967). The possibility that these low results were due to errors in the sampling technique cannot be overlooked. However, it is suggested that the

| Table 1: Summary of Data for Intake and VFA Production Relative to Type of Pasture |
|-------------------------------------------|----------------|----------------|----------------|
| GE digestibility (%)                     | Clover (C)     | Ryegrass (S)   | Ryegrass (P)   |
|                                         | 81.0           | 77.5           | 77.7           |
| DE intake (kcal/day)                     | 3,328          | 3,005          | 2,757          |
| VFA production (moles/day)               | 2.99           | 1.78           | 3.33           |
| VFA as % DE intake                       | 25.1           | 16.5           | 33.9           |

90
differences between the present results and published estimates, and between the pasture species used, can be explained by differences in rumen retention times.

Further work is in progress to follow up these results both indoors and in the grazing situation.

REFERENCES
