
COMMENTS ON THE **GRAZING** MANAGEMENT SESSION

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This collection of papers does four significant things:

1. It concentrates on hill country.
2. Precisely defines the research environment in pasture levels and animal production terms. One can clearly see the consequences in animal production at different times of the year when pre-grazing and residual herbage levels are defined and varied and to see the effects of different grazing systems at these pasture levels. Much better than high vs low stocking rates.
3. Attempts to set pasture targets as well as animal production targets.
4. Defines critical pasture DM levels both below which pasture production is reduced, and above which control is lost. The proximity to these critical levels will, for a farmer, more precisely define the grazing management system he should adopt and the levels of animal production he should be able to achieve.

Each paper highlights several main points and in looking to see how these could be best used for the farmer, I will concentrate on three areas; production (pasture and animal), management flexibility and risks.

In comparing predominantly rotational grazed vs set stocked pastures, Chapman & Clark have found little difference between them in terms of pasture utilisation as the effects of defoliation severity and frequency tend to equalise each other. While there are small advantages in rotational grazing at certain times of the year, such as encouraging ryegrass providing greater management flexibility in rationing winter feed, they conclude that the best grazing management for hill country will include elements of both.

From Hodgson & Maxwell two very important points emerge. These are, that net herbage production and lamb output per hectare is maximised when herbage mass is maintained at 1200-1500 kg DM/ha during the main season of growth; and net herbage production is insensitive to herbage mass over the range of 1000 to 2500 kg DM/ha. Most importantly they define both pasture as well as livestock targets e.g. 1000 kg DM/ha at the start of lambing.

The modelling approach used by Bircham is one of the most significant management tools available to advisers. In setting the pasture target of 1000 kg DM/ha at lambing (rarely achieved in N.Z.) he defines the risks if it is not met, and integrates this with variation in seasonal pasture production patterns.

Both Bircham and Hodgson & Maxwell expressed concern that at 1000 kg DM/ha or above at lambing, pasture may get out of control, although under NZ conditions set stocking would help reduce this risk, or conservation of surpluses could be used to maintain targets. However in steep hill country where such measures are not easily carried out, Sheath *et al* indicated that it is best to control steep country first, then easy, setting pasture targets in the 1500-2200 kg/ha range, preferably by using rotational grazings of 20-25 day duration. One aspect not covered is the priority of sunny and shady faces.

Smeaton & Rattray concluded that grazing duration during winter had no effect on liveweight, but that long winter rotations gave more flexibility with a greater selection of pasture cover, an important factor if ram harnesses had been

used. If feed was going to be short at lambing, it was better to save it for lactation. With a pasture cover of 1030 kg/ha at lambing they found set stocking better than rotational grazing, in agreement with other authors.

Putting these results together into a farm management package would suggest the following plan, with respect to ewes only.

Autumn

Rotational graze to build feed banks and make easier planning for lambing pasture targets (1000 kg DM/ha). Use ram harnesses to increase management flexibility at lambing.

Winter

In order to aim for lambing pasture targets of 1000 kg/ha, and reduce the risks of a poor spring, rotational graze to ration feed at the expense of liveweight loss, or use N fertiliser supplements. Use long rotations rather than short for better management flexibility. Break rotation at the start of lambing (twins?) shedding early lambing ewes onto longest feed.

Spring

If the pasture target of 1000 kg DM/ha is met at the start of lambing — set stock. If not, rotational graze, until they are reached, then set stock. Keep pastures in 1200-1500 kg DM/ha range by adjusting stocking rate or using conservation as required.

Summer

Rotational graze (20-25 days) controlling steep country first. Keep control of areas once under control.

Finally, perhaps one mild criticism. In many of the papers there tends to be a comparison between set stocking and rotational grazing. In farmers' minds these comparisons are of little consequence. In fact, one could predict results of individual, usually short term trials, if three things were known.

- 1) The season of the year and therefore likely pasture growth rates.
- 2) Pre-grazing dry matter levels and
- 3) The stocking rate.

Generally if the first two are low and the third is high rotational grazing will win out. But very seldom on farms are these three things constant between seasons in different years.

This is why rotational grazing vs set stocking trials are not important as the farmer cannot develop a constant management system based on their results. What he needs to do is understand the principles involved and select the right management option depending on the three factors outlined above.

Of course this is what the Controlled Grazing Systems package attempts to do. CGS is NOT rotational grazing in spite of the way some people think, although rotational grazing is an important part of it. Rather it looks at the consequences of selecting different management options at different times of the year.

These five papers go a long way, I think, towards more precisely defining the on-farm conditions that should assist farmers to select the best management option.