

MY USE OF PERENNIAL RYEGRASS

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IN THIS PAPER I want to deal with how stock management and pasture management are fitted to the benefit of performance of both. These two aspects are not always easy to separate, hence both managements tend to be welded together with some degree of compromise for the maximizing of the end product—meat and wool. I have found perennial ryegrass associated with white clover to be the one grass able to fit these demanding requirements, under fairly heavy stocking rates.

My farm, which I have been farming since 1960, consists of 149 ha (of which 143 ha is effective) and is situated 40 km NE of Invercargill. Subdivision is into 27 permanently fenced paddocks, with mains electric reticulation for further subdivision when required. The contour is gently rolling to flat. Southdown soils, which are strongly leached yellow-brown earths developed on loess, occur on the rolling land, and Makarewa soils, which are poorly drained recent soils, are present on the flats.

The breed of sheep has been changed over the last 8 years from Romney to Coopworth. I keep my own replacement ewe hoggets, and Down rams are used with the small proportion of lower performing sheep.

Animal performance is summarized below and in Fig. 1.

Stocking rate: 19 s.u./ha on pasture (40 ha stubble) .

Lambing %: 140 to 150.

Body weight for 2T ewes at mating: 60 to 70 kg.

Lamb weights: 14 to 15 kg.

Well-grown replacement lambs.

Wool weights: 5.5 kg.

Stock and pasture management priorities have to be established at various times of the year if all these aims are to be met. These are:

1. Topping.
2. Winter.
3. Lambing.
4. Post-lambing to weaning.
5. Post-weaning to topping.

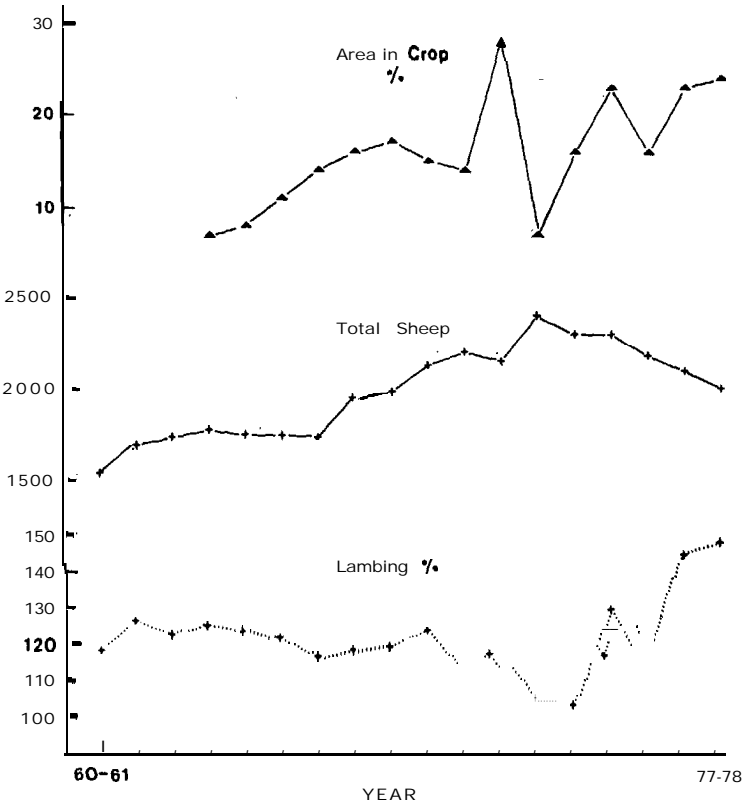


FIG. 1: Sheep numbers, lambing percentage and crop area, 1960-78.

When I first took over the farm, pastures consisted of brown-top, Yorkshire fog, and crested dogstail which could maintain an acceptable production per sheep only at low stocking rates of about 10/ha. White clover content was low and plants were small-leaved. Large amounts of supplementary winter feed consisting of swedes and hay were required. The worst aspect of these pastures was that they lacked production in the lambing to weaning period. This is a most important time and lack of pasture growth has effects throughout the rest of the year, e.g., poor lamb growth, few lambs fat off mothers, more lambs to feed through summer with consequent competition with replacement stock, lower body weights of two-tooths, and lower lambing percentage. Great difficulty was experienced at this time in matching the

feed requirements of stock with the available supply, and at the same time increasing stock numbers. Young breeding stock were not being grown out to full potential, with consequent poorer lifetime performance.

After one or two years trying multiple mixtures of ryegrass, timothy, dogstail, cocksfoot, white clover, and red clover, I could see that it was impossible to manage such a pasture to get any benefit from it.

At this time ryegrass was being lost from pastures in the second and third year. This was due, I considered, to low nutrient supply (especially phosphate), sowing too late in spring, and poor management of young establishing pasture.

I decided that perennial ryegrass was the grass to fit my ideas of lifting sheep numbers and performance, and I used a simple mixture of 20 kg/ha 'Grasslands Ruanui' and 3 kg/ha 'Grasslands Huia' white clover sown October-November. I increased topdressing at sowing to 600 to 700 kg/ha superphosphate and stocked with large mobs of ewes for short periods. Pasture established better and produced more.

Establishment of young pasture is critical to its life and productivity. I do not use heavy seeding rates, and I time grazing to avoid any smothering effect of ryegrass on the white clover. A large mob of sheep, preferably ewes, graze in as short a period as possible to avoid unnecessary treading on the young establishing clover. If large numbers of young stock are used, these are unable to be concentrated for long periods, and frequently they have to be shifted before ryegrass is adequately grazed. Under these conditions there is treading damage, too, and loss of the young white clover.

The aim is to create a balance between ryegrass and clover in the early establishment period, and the young pasture is given preferential treatment until, by autumn usually, it is well established. It is then most likely used in the hogget winter grazing programme, again to avoid pugging.

An extra 250 kg/ha of superphosphate above the normal topdressing level of 450 kg/ha of 25% potassic superphosphate is sown in establishing new pasture. By using mob stocking effectively in the early stages of the pasture I find that I can control many weeds, including thistles, and a more weed-free dense pasture is established. Most of my pastures now are relatively free from thistles, which I attribute largely to the care taken in the first 6 months.

With thoughts on greater spring production, Ariki was introduced to the mixture, first in a 50:50 ratio with Ruanui. Ariki has now replaced Ruanui, as I consider it superior in its winter and spring production *provided good fertility is maintained*.

Pasture management has developed from a mainly set-stocked, all-year system to one of rotational grazing, except from lambing to weaning. I have a strong wish to shorten this period of set stocking.

To try to explain my efforts to marry pasture and stock management together, I will deal with the five previously mentioned periods.

MANAGEMENT PERIODS

TUPPING

This commences on 6 April, being preceded by a programme of flushing by grazing ewes on best quality grass in a quick rotation. At tugging, ewes are sorted into mating mobs, two-tooths, breeding replacement ewes, and a mob not used for breeding replacement stock. To reduce the time ewes are in separate mobs and enable a one-mob rotation to start as quickly as possible, rams are harnessed. After the first week, all marked ewes from all mobs are drafted out and put into one mob with chaser rams. They then start a slower rotation behind the tugging mobs. By the end of the first cycle most ewes are back to a one-mob rotation and are commencing their winter rotation. At this stage important decisions on feed for winter can be made, body weight checked, and the rotation slowed down to fit the estimated feed supply. These are decisions which are more easily made earlier in a situation, than later on in winter when alternatives are not always available. The marked ewes will be re-formed into three main groups at lambing. This system of mating, I feel, suits both animal and pasture.

WINTER

Ewes are allocated an 85-day rotation with a 2- to 3-week period in June on crop stubble feeding hay. Then, length of time is determined by feed supply, weather, and body weight of the ewes, I have been using a 2-day shift for ewes and feeding hay when required on the second day. With electric fences, 1.5 -ha blocks are readily made for 1500 ewes. By late June, or when winter weather becomes extremely wet, I use stubble. This is valuable relief to pasture at this time, as although perennial rye-

grass can stand considerable treading for short periods, some Southland winters are detrimental to both sheep and pasture.

A longer, more elaborate rotation is set out at this time for 500 hoggets, with 35 to 40 ha set aside for them for about a 100-day rotation. Using electric fencing, each paddock is broken into 0.3 to 0.4 ha squares, depending on paddock shape and size. After the first rotation the area is reduced to approximately 25 ha; then later, in spring, as growth increases and as ewes with lambs require more, the area is further reduced and break sizes increased. By October, stocking rate can be up to 37/ha in a 3-week rotation. Hoggets have a controlled feed programme which can be altered to suit their requirements and maximize their growth over the spring period, while working in well with other sheep requirements. It is in this system that I have seen the real potential of Ariki ryegrass, both in stock health and in pasture growth. The high concentration of sheep, and the short period the grass is grazed and the length of time it is left to recover, all seem to allow it to grow much more through this winter period. By spring, when hoggets on most other systems are rather neglected and grass is in short supply, the feed is growing rapidly for them. I have found no other grass able to do this as well as Ariki.

By late July the ewes have finished their winter rotation and have started on their second round. This is now a 1-day grazing, and with the extra area being made available from the hoggets' block there is sufficient grass to take them right into lambing.

LAMBING

At the start of lambing, ewes are reassembled into three mobs based on time of lambing. With the early mob set-stocked, the other two can rotate approximately 1 week longer. I have found it impracticable from a stock point of view to rotate through lambing, so I set-stock at this point.

POST-LAMBING TO WEANING

At present ewes and lambs are set-stocked until weaning. This is most convenient for stock management, but heavy stocking does cause some problems. Ryegrass, however, does grow well over this period, and it is important that a too lax grazing pattern is not adopted. If growth is getting away, stock should always be tightened up; otherwise palatability and quality fall and growth rate of lambs declines. It is more difficult to control pasture in a set-stocked situation, and I find it always easier to manage pas-

ture for maximum growth under a rotational system, for instant alterations can be made as changing weather and growth situations occur. This is not as easy to do in a set-stocked situation, and considerable juggling of numbers of ewes and lambs around various paddocks has to be done at this time to control pasture efficiently.

To gain the advantages I see in both systems, for animal management and pasture growth respectively, I wean early at the end of November. This allows a return to rotational grazing with all stock. Young stock require predominantly white clover pastures with short palatable ryegrass. Older stock are useful in producing this type of pasture by heavy mob stocking of pastures to reduce rank ryegrass. At this time of the year after this treatment, when clovers are approaching the maximum growing period, ideal lamb feed can be produced. Once again, 1 or 2 weeks earlier in weaning can give valuable time in making these decisions.

A decision is made at this time on the number of lambs to be sold fat off mothers in relation to the feed situation. Old ewes are sold on the place, and I am prepared to lose money on them if necessary. I consider old ewes redundant once lambs are weaned and wool is shorn. They have produced to this point a large number of lambs and wool in their lifetime, and as I do not cull on mouths or age necessarily, but rather on constitution, I am prepared to take whatever is offered in order to reduce grazing pressures at a vital stage in my grass management,

POST-WEANING TO TUPPING

With weaning completed, a reduction in lamb numbers and, hopefully, old ewes, a situation is created for starting a rotation again at a time when pasture growth is still high. Priorities for different stock can be worked out and pasture management can be aimed to produce the best end results. Ewe lambs are allocated to the hogget block, and stores rotated ahead of two-tooths. Ewes clean up surplus or lower quality pasture in a large mob to produce conditions for maximum growth later. Sufficient area to provide the winter hay requirement is closed at this time.

By controlling Arika well up to this time, good fattening feed is produced through the summer period. With mob stocking from then on, pasture can be controlled to produce good feed through autumn. Fattening stock can respond well on this feed, and I aim to have them sold by March. Young breeding stock can be brought out to very good body weight.
