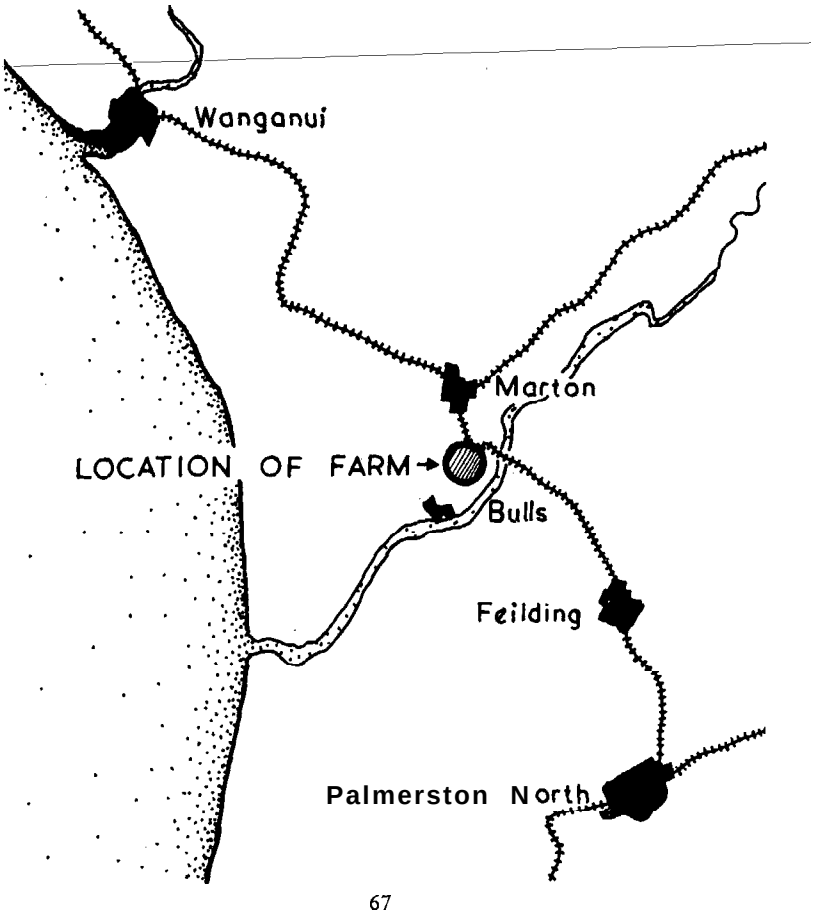
THE USE OF SHORT-ROTATION RYEGRASS ON A MANAWATU FAT LAMB FARM

By D. R. WILLIS, Woodendean, Greatford

It is necessary when a farmer like myself is giving a paper such as this that he should first acquaint you not only with the location and type of his farm, but also with a brief history of his farming experience so as to enable you to get some perspective as to the value of what is said.



My property is situated a few miles north of Ohakea aerodrome at an altitude of a little over 100ft. and is very typical both in size and type of many downland farms throughout Rangitikei and Manawatu. The annual rainfall is about 37in. The unusual feature of the farm is that half is the typical Marton loam with 9in. to 12in. of dark loam over heavy clay, which is very suitable for mole draining, whereas the other half is river silt adjoining the Rangitikei River. The latter varies from a rich, mellow, free-draining silt of great depth to a lighter, sandy, rather harsh silt over shingle.

After having a hill country property in the Kiwitea County from the middle thirties till after the war, I have been farming the present property for the past 11 or 12 years, The present property is, of course, used primarily for fat-lamb production, but in addition the climate permits grain and small seeds production. In fact from the time of settlement in the fifties of last century until the middle twenties of this, these cash crops were of vital importance to the area and went out of favour only when labour costs made them impractical. Power farming and mechanisation of harvesting have restored the profit to cash cropping, so the pendulum is swinging back again.

When I took over the farm it was, of course, all in permanent pasture, but one season's experience was enough to make me dissatisfied. I therefore decided to attempt a management policy suitable to the then comparatively new short-rotation type of ryegrass and see if it was practical and profitable to use this grass on my land under the climate of the area.

From the first experimental sowing of some 20 acres, the area under short-rotation ryegrass-white clover pasture has proved satisfactory enough to increase to its present level of 80 per cent. of the total area in grass.

I think that at this point it would be of value to review the objects and requirements of pasture in general so as to be able to keep a sense of proportion on the subject.

The most important point is to get the maximum production per acre per annum that can be used with profit. I would like to stress that point. Grass that cannot be used with profit is of no interest to any farmer and in fact is more of a liability than an asset.

An aspect of the profit angle not without importance is that net profit is far more interesting than gross and it should be borne in mind that the farmer is in a very different position now from what he was 2.5 years ago. Produce prices then were so low that

no costs could be accepted and power and mechanisation were not as advanced as they are today.

Owing to the fact that any pasture plant thrives best if maximum demands are made on it during its period of maximum growth and only modest requirements are made during its period of dormancy or semi-dormancy, the plant that has an annual growth cycle most nearly corresponding to the stock's yearly demand cycle is likely to be the most satisfactory type to grow.

Finally, as the perfect pasture plant would have to live for ever and yet perpetually retain its youthful vigour and sweetness, it is unlikely that we will ever attain it, so we must choose that which has the fewest faults.

Now, weighing the two main ryegrass types one against the other, it appears to me that it is impractical to get the best results from mixtures of the two owing to the great difference in their growth cycle. The one with its very high late spring and early summer growth, which necessitates vigorous grazing regardless of cost; and the other with its more modest late spring and early summer production, which owing to its habit of more open growth and retained palatability neither suppresses the white clover nor comes to any harm if allowed to develop.

The one with its poor August and September growth, with all its attendant difficulties for in-lamb and milking ewes, and the other, with its good August and September production, which is so beneficial at that time. The one with its vigorous autumn growth, which may or may not be of benefit, and the other, with its modest autumn recovery that is replaced by white clover, which is easier to handle.

There is no doubt that each ryegrass has its virtues and failings and it remains to choose the one that can be most easily and profitably used.

The biggest failings of perennial ryegrass are to my mind the necessity of vigorous control in late spring regardless of cost, to keep palatability and avoid clover suppression, and its slow growth in early spring.

Short-rotation ryegrass-white clover pastures, on the other hand, grow so much earlier with resultant beneficial effects on ewes and lambs, in addition to which it need not be controlled, so that September's well-known ability to vary from full spring to full winter is provided against. Also in December and January the soil is insulated from the hot sun and drying winds by a dense, deep foliage cover.

The two types of ryegrass do not differ markedly in their total annual production per acre, but differ in their time of growth and their retaining or loss of palatability.

TO my mind the overriding virtue that short-rotation-white clover pastures possess for the fat lamb farmer is the remarkable resemblance the production cycle bears to the annual requirement of the fat lamb farm. The high winter and early spring growth continued into full spring and changing into a lower volume of feed of higher quality in summer, with the accompanying ability to permit reserves of palatable feed to be saved in situ against September's cold snaps or dry conditions in December, simplifies the growing of fat lambs from their mothers. Also the growth of, what is to the eye, almost pure white clover for summer and autumn use is very satisfactory for lamb fattening.

It is necessary to make only one basic change in previously accepted farm practice to interlock the stock requirement into the short-rotation-white clover production pattern; this is earlier weaning of lambs. That is to say, lambs born in August need to be weaned by I December at the latest instead of the previously accepted January onward. In any case it is more than possible that this practice is desirable regardless of the species used. Apart from earlier weaning the sheep management follows the normal practice of mob stocking from weaning to lambing and set stocking from lambing to weaning. The lambs that do not go off at the first draft and weaning date, which is the same day, are grazed on mature clover, which is a very satisfactory fattening feed that does not cause many of the ill thrift troubles which are an increasing problem on some types of pasture. In fact it has been possible on my farm to eliminate lamb drenching for the past 5 years and losses from weaning onward have fallen to negligible proportions. Most of the losses that have occurred have been due to injury or fly strike, but since the advent of dieldrin sprays the latter trouble has caused little concern.

You will, of course, want to know what the production picture is now compared to that of l 1 years ago. This is very satisfactory. Ewes per acre have risen some 50 per cent. from just under 4 to a full 6. The first lamb draft has increased from 40 per cent. just before Christmas to 70 per cent. on I December, both based on lamb numbers at time of drafting. Also the total clearance of tail-end lambs born on the property has come forward from June to March. In addition to this, grain and small seeds production has risen to quite a worthwhile figure, averaging some 20 per cent. of the property each year in one or other of these cash crops; this, of course, being in addition to the stock carried. Up to the present it has been found more profitable to harvest surplus pasture for small seeds than to buy store lambs for fattening, so that comparatively little lamb buying has been done. No doubt

with the present drop in grass and clover seed prices more lamb fattening will be done.

As I said before, the object of all farming is profit, so it is necessary that a pasture must be able to persist long enough to pay for the cost of renewal or renovation, if required. I am of the opinion that the ancient principle of building up soil fertility by stock concentration followed by cashing in with grain or small seeds is sound husbandry. Undoubtedly it is profitable under today's conditions; that is, of course, when land and climate permit this to be done. Bear in mind that I am talking about land that has a cash crop potential and that the profit from a grain or small seeds crop is in direct relation to the soil fertility level.

A pasture that can be maintained for 10 years and leave the soil in good heart is very satisfactory. The present model or strain of short-rotation ryegrass is quite capable of doing this; in fact, I would go so far as to say that, owing to the hybrid vigour of the seed, a pasture of short-rotation ryegrass-white clover can be easily and satisfactorily maintained for an indefinite period provided the correct management and renovation practices are followed. The management required to get the best results from short-rotation ryegrass pasture is simply fitting the demand to the production, which does not present any very great problem in a normal season. There are far fewer problems in the short-rotation ryegrass-white clover pasture than face the light-land farmer who uses dominant subterranean clover pasture. Yet to say that subterranean clover under certain conditions is not worthwhile would hardly be correct. Those people have simply worked out a demand cycle consistent with the supply; nothing more, nothing less.

Short-rotation ryegrass's greatest failing or weakness is the tendency to disappear if it is subjected to over-grazing in summer or severe summer drought. If correct management has been practised so that a certain amount of reseeding can occur, recovery is rapid and satisfactory. If it has been impossible to permit this, then oversowing or sod-seeding is practical.

It is neither difficult nor expensive to renovate pasture by this means. Disc drills are certainly attractive implements, but are not necessary to renovate a short-rotation ryegrass pasture cheaply and effectively. I find that it is necessary only to clean the paddock up with stock and then run over the area with the discs with a minimum of cut. Seed at 1 bushel down to ½ bushel per acre is then broadcast on the ground in front of the chain harrows and this is followed with either the Cambridge roller or a large mob of sheep driven to and fro across the paddock

and the pasture is completely restored to balance. The cost of this probably does not exceed an application of superphosphate at the normal rate of application. I have one paddock 10 years old which after suffering from the combined effect of being an early model and having my inexperienced early management, together with a variety of seasons, is still producing well and has had only one oversowing, 2 years ago.

The methods used for pasture establishment are two. One method is the normal sowing of 1½ bushels of short-rotation ryegrass plus 3lb. of pedigree white clover in the autumn. This is mob stocked in the normal young grass manner throughout autumn and winter and given normal full carrying capacity from August on.

The second method is to add 1½ bushels of N.I.A.B. ryecorn as a cover crop when sowing. Provided this is sown early while the weather is warm, the results are spectacular. With this mixture up to 20 sheep per acre can be carried during the first winter and set stocking at 8 ewes per acre can be done from August to weaning. The chief difficulty with this method is that the soil must be well drained, as stocking with 40 sheep per acre week on, week off is apt to cause pugging if drainage is not good and grazing must be done carefully to avoid suppression of the young clover plants. I used this method a lot when the total percentage of short-rotation ryegrass on the property was lower, but do not use it much now, as firstly, the winter feed supply is not now a problem and secondly, the ryecorn does not give such good results when following a cereal crop, which is now the standard practice of pasture renewal on my property.

To summarise: The farm practise now is to winter 6 ewes per acre on grass, using mob stocking till August. Set stocking starts immediately before lambing with the grass holding the sheep without difficulty. In September the pasture is slowly getting ahead of the sheep and during this month some 10 per cent. of the farm is put under the plough for grain growing. These paddocks incidentally are far more easily worked owing to the clover-rich pasture being ploughed in. By October another 10 per cent. is shut up for small seed production and the stock from then on are fairly concentrated. On 1 December the first draft of some 70 per cent. of the lambs are dispatched and the remainder weaned on the same day. At this point the ewes lose importance and the stock feed requirement falls drastically.

Growth from 1 December onward is left to await a decision about its use. This dominantly white clover growth can bc left without deteriorating for lamb fattening, ordinary stock use, small

seed production, or flushing ewes before tupping, the important point being that there is time to await developments without feed deterioration.

A final word about the present model of short-rotation ryegrass and the future of this strain: Obviously further selection and breeding should be of great value, but it will be a thousand pities if some of its present good points are sacrificed for illusionary benefits. It is sometimes hard to assess what is a virtue and what is a vice. The perennial ryegrass pasture has been of great benefit to this country in some ways, but was a child of its time and times are changing. There is very good authority for condemning attempts to gild the lily.

DISCUSSION ON SYMPOSIUM ON SHORT-ROTATION RYEGRASS

Mr Seifert: Mr Scott asked for comments on the usefulness of the survey on short-rotation ryegrass. [think the survey was very worthwhile and much information has come out of it.

Q. Could Mr Scott repeat the survey with a different set of farmers? There was a need for more factual information about the performance of short-rotation ryegrass.

A. If Instructors in Agriculture were agreeable, it was likely that another survey would be undertaken.

Q. Did Mr Titterton alter his topdressing programme while he was increasing the amount of short-rotation ryegrass in his pastures.

A. No. My reason for using short-rotation ryegrass was because its winter production enabled the herd to be calved down earlier. I rely on the winter production from short-rotation ryegrass rather than saving hay and silage.

Q. What would be the effect of adding 5lb. of perennial ryegrass with the short-rotation ryegrass seed mixtures on the Lincoln College farm.

A. The addition of 5lb of perennial ryegrass would have advantages under high stocking where there was sufficient fertility to make it succulent and palatable to stock. Where perennial ryegrass was added to the short rotation ryegrass mixture in earlier years, it tended to take charge of the pasture.

Q. To what extent did Mr Willis use hay or silage.

A. I harvest short-rotation ryegrass for seed and then press the straw which is kept in reserve for possible outbreaks of facial eczema. [do not make any hay or silage.

Q. The short-rotation ryegrass survey was not very satisfactory because (a) some farmers who had been using it for several years could not recognise it in the pastures and (b) some farmers sowed it in the poorer fertility paddocks of the farm at 2-3lb. per acre. It would have been better if it had been left to Instructors to select the farms.

A The question of selecting farms was a tricky one. If Instructors were asked to select 10 farms they would go to the farmers they knew and this would not be a random selection. Instructors did a very good job -they got returns from 439 farms out of 440.

Mr. Hamblyn: The Extension Division required more information on the performance of short-rotation ryegrass. More extensive use would be

made of pure short-rotation ryegrass mixtures on the Manaia and Stratford demonstration farms over the next 10 years. Present indications were that it would persist satisfactorily if allowed to reseed. Essential feature of management was that the short-rotation ryegrass be spelled in the summer and to do this crops of soft turnips or chou moellier had to be grown.

Dr Corkill: The discussion has highlighted the good and bad points of short-rotation ryegrass. Its good points were (1) High winter and spring production. (2) Palatability. (3) Ability to reseed itself. Its bad feature was that it lacked persistency in dry summers under hard grazing. This necessitated special management.

Mr Willis: The winter and spring production from short-rotation ryegrass fitted in well with stock requirements and its low summer production is of no real concern to me.

Mr Titterton: Short-rotation ryegrass tended to die out in the summer and this led to clover dominance and bloat trouble.

Dr Corkill: A glance at the seed production figures showed that farmers were using much more short-rotation ryegrass. Production of short-rotation ryegrass seed increased from 6000 bushels in 1945 to 540,000 bushels in 1955.

An attempt has been made to breed more persistency into the plant without losing palatability. The early production and reseeding strain now available is considered superior to the old strain. No strain of short-rotation ryegrass, however, would stand abuse to the same extent as perennial ryegrass. The question of breeding strains for different environments was one that frequently cropped up. There was probably something to be said for breeding regional strains but there were difficulties concerned with seed production. Seed for North Auckland would have to be grown in Canterbury and would have to be paid a premium because the North Auckland strain would not carry as much stock in Canterbury as the Canterbury strain. The North Auckland farmer might not be willing to pay this premium. There was also the question of cross pollination. Strains of ryegrass cross pollinated very readily and it would be a big job to keep the regional strains pure.