

## PASTURE ESTABLISHMENT ON A REPOROA SHEEP FARM

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Twenty-six miles south of Rotorua on the Taupo Main Highway you pass through the Mihi Farm' Settlement Scheme where pumice land has been developed by the Department of Lands and Survey. The stunted manuka, fern, and areas of larger manuka and tussock were crushed early in 1952, cultivated, and sown in grass in spring 1952.

The area this paper concerns is the higher rolling hill country to the east of the main road, where mostly sheep and mixed farming is practised.

The soil type is 18 b and 18 H Taupo silty sand derived from rhyolitic pumice with a small layer of fertility on the top. Good growth of clover and grasses can be expected if the right treatment is given them. Elevation ranges from 1,150 up to 1,550 ft above sea level, with most of the area around the 1,450 ft contour. A third of the area is flat or gently sloping; the remainder is rolling to steep and divided by steep-sided, scrub-covered gullies.

When I took over this property of approximately 360 acres in June 1957 the pastures were predominantly cocksfoot, white clover, and cowgrass. The cocksfoot had tufted badly with the result that when it was chewed off large areas of dead matter and bare patches showed up, the other grasses having been choked out due to this tufting and the lack of consolidation. I could see that one of my first jobs on the place was to plough and sow swedes with the idea of renewing and consolidating the pastures.

The first area of 10 acres to go under the plough we will call **No. 1 paddock**; this was sown in swedes during the first week of November 1957 through a shuffle type manure sower and gave quite a good yield of approximately 25 to 30 tons to the acre. These swedes were break-fed to the sheep in June, July, and August; then a light **discing** was given plus a harrowing and the grass seed for this paddock was run through a grass seed box and allowed to drop on the ground at the rate of 10 lb of Italian ryegrass and 5 lb of Montgomery red clover to the acre. The reason for using this temporary pasture mixture was to give a hay paddock in the first year. This paddock was sown on 15 September 1958. It was chewed off hard at the end of five weeks with about 300 hoggets for approximately three days and was then given

a dressing of 2 cwt of cobaltised superphosphate. After being closed up for two weeks it was set stocked with about 30 ewes and lambs until the first week in November and then closed for hay and cut in 'mid January 1959. Eight acres were cut for hay and yielded 720 bales. Two acres were put into silage as a trial for sheep feed. The aftermath carried approximately 50 lambs till the end of March and was then closed till the winter. It was then used as a run-off for the adjoining 10 acre paddock (No. 2) which had been sown in swedes in November. -This area had to carry 1,000 ewes from June till August. Hay was 'fed out on No. 1 paddock for the sheep at night.

This treatment I maintain is the best way to build up and consolidate a pasture, as the following year I had the pleasure of cutting 1,500 bales of hay off the 10 acres of Italian ryegrass and red clover, which takes a lot of beating even with lucerne in this area.

It was given 2 cwt of cobaltised superphosphate in the autumn with the rest of the farm, and this area after its hard winter treatment came away well in the spring. After a period of set stocking with approximately 70 ewes and lambs it was closed for hay for the 1959-60 season in the first week of November and cut in mid January to give the record yield of 1,500 bales. Approximately 50 lambs were grazed on the aftermath, after which the area was closed for spring feed in March.

**Paddock** No. 2 was laid down in permanent pasture in mid September 1959. This was 12 lb of perennial ryegrass, 5 lb of cocksfoot (Grasslands), 1 lb of crested dogstail, 2 lb of Montgomery red, 2 lb of cowgrass, 2 lb of white clover, giving 29 lb in the mixture, which was sown at the rate of only 20 lb to the acre through a Grassland seed box and allowed to drop on to the ground over a spreading board after a light **discing** and harrowing. The area was rolled after seeding.

After approximately six weeks the area was grazed with 30 ewes and lambs until December and then given a spell till early January; when it was stocked with 30 lambs and 10 18-month steers till the end of March, when it was closed for spring feed after a dressing of 2 cwt of cobaltised superphosphate.

In the spring paddocks Nos. 1 and 2 were used to lamb on and they had a mob of approximately 800 ewes running on them for just on three weeks. These ewes were shifted from one paddock to the other' each day and the ewes that had lambed were run off into adjoining paddocks. They were then set stocked with 70 ewes and lambs each day until the first week in November, and then

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given 2 cwt of DDT superphosphate and closed for hay and cut the first week in January 1961. In spite of a dry season and cutting two weeks earlier than in the previous year, paddock No. 1 cut 1,330 bales and paddock No. 2 1,000 bales, both paddocks being of 10 acres.

In the meantime a further 14 acres had been ploughed and sown in swedes, but this area was too far away and inconvenient for the 1959 new grass to be used as a run-off.

This 14 acres was sown to permanent pasture with the same mixture and sowing rate as those used previously, but it was not given the hard treatment the previous year's newly grassed area got, as the season was very dry. It had only one chewing off with 360 ewe hoggets for three to four days and was then allowed to come away before set stocking with 32 rams and two house cows until March. It was then used in April and May with paddock Nos. 1 and 2 to tup 360 two-tooth ewes and was then closed for spring feed. In July it carried 11 heifers with calves at foot plus, since the beginning of September, 73 ewes and lambs. The sward on this area has not closed up to the same extent as that on paddock No. 2, and I put this down to dry weather and insufficient stocking in its early stages.

Stocking new pastures in their early stage is, I think, the main factor in pasture establishment on our light pumice soil, as stock manure and consolidation are essential. High and reliable production from my earliest regrassed areas makes me confident that the correct technique is being used.

I feel sure that this area of approximately 360 acres by the time I have regrassed most of it will carry in the vicinity of at least 1,500 ewes, 200 ewe hoggets, and 60 breeding cows and replacements under the regrassing and management programme so far carried out and that production of meat and wool per acre will continue to rise.

#### **Paddock No. 1 (10 acres)**

##### **QUICK-PRODUCING PASTURE:**

Italian ryegrass ....	lb per acre
Ccwgrass	10
	5
	15

Broadcast at 15 lb per acre September 1958.

##### **YIELD OF HAY:**

90 bales per acre 1st year, cut January 1959  
1.50 bales per acre 2nd year, cut January 1960  
133 bales per acre 3rd year, cut January 1961

GRAZING RECORDS FOR FIELD OF 10 ACRES:

1st Year (1958-59):

	Ewe equiv. days
October	1,000
February   ...   ...   ...	1,050
March	14,000
	16,050

Used as winter run-off for 1,000 ewes mid-May until late July.

2nd Year (1959-60):

	Ewe equiv. days
July/November   ...   ...	8,400
February   ...   ...   ...   ...	2,100
March   ...   ...	14,000
	24,500

Used as winter run-off for 1,000 ewes May until July

3rd Year (1960-61):

	Ewe equiv. days
August   ...   ...   ...	8,400
February/March   ...   ...	5,880
	14,280

Used as winter run-off for 1,000 ewes May until July

4th Year (1961-62, start only):

	Ewe equiv. days
August   ...   ...   ...   ...	1,960
September   ...   ...   ...   ...	3,500
	5,460

**Paddock No. 2 (10 acres)**

PERMANENT PASTURE:

	lb per acre
Perennial ryegrass   ...   ...   ...   ...	12
Italian ryegrass   ...   ...   ...   ...	5
Cocksfoot (Grasslands)   ...   ...   ...   ...	5
Crested dogstail   ...   ...   ...   ...	1
Montgomery red clover   ...   ...   ...   ...	2
Cowgrass   ...   ...   ...   ...	2
White clover   ...   ...   ...   ...	2
	29

Broadcast at 20 lb per acre September 1959

YIELD OF HAY:

100 bales per acre 2nd year January 1961

GRAZING RECORD FOR FIELD OF 10 ACRES:

1st Year (1959-60):

	Ewe equiv. days
October/November	1,200
December/March	6,350
April/May	3,900
	11,450

**2nd Year (1960-61):**

August/September	Ewe equiv. days
February/March ....	8,400
April/ August	600
	14,000
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	23,000

**3rd Year (1961-62, start only):**

September ....	Ewe equiv. days
	3,500

**Paddock No. 3 (14 acres)**

Permanent pasture mixture as for No. 2.  
Broadcast at 20 lb per acre September 1960

GRAZING RECORD:

**1st Year (1960-61):**

October	Ewe equiv. days
January	2,200
February/March	1,200
March/May	2,100
July/September	10,080
	6,500
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	22,080

STOCKING RATE FOR FARM:

Season	Ewes	Hoggets	Heifers	Cows	Weaners	Two-year Steers
1957-58	900	—	40	7		
1958-59	1,000	150	25	70		
1959-60	1,150	350	25	70	62	10
1960-61	1,150	250	25	70	59	10

WINTER FEED AVAILABLE:

Season	Bales	Crop
1957-58	500	
1958-59	2,000	10 acres swedes
1959-60	4,000	10 acres swedes
1960-61	3,700	14 acres swedes + 4½ acres choumoellier

TOPDRESSING APPLIED:

Season	Grass areas	Crops per acre
1957-58	35 tons cobaltised superphosphate	2 cwt superphosphate
1958-59	35 tons cobaltised superphosphate	1 cwt potash
1959-60	40 tons cobaltised superphosphate	1 cwt blood and bone
1960-61	15 tons cobaltised superphosphate	
	20 tons DDT cobaltised superphosphate	

WOOL CLIP:

Season	Total yield (lb)
1957-58	10,671
1958-59	11,079
1959-60	13,226
1960-61	15,357

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## DISCUSSION

- Q. (J. Holden): When the pastures have been completely renewed would it still be necessary to crop.
- A. I hope I can avoid cropping because of the improved winter growth of the new strains of grasses and clovers.
- Q. (N. Cullen): Would Mr Carrington make greater use of temporary pasture in future in view of his experience with the one mentioned in his talk.
- A. I've been pleased with the temporary pasture but don't know yet whether it will last. I will be putting down another one this year.
- Q. (I. Elliott): Mr Carrington, have you used much DDT for grass grub control and are you getting satisfactory results?
- A. DDT prills have been used at  $2\frac{1}{2}$  lb per acre and DDT super at 2 cwt per acre last year. The young pastures receive 2 cwt of DDT super in the second year. The results have not been particularly good and there is still some grub in the pastures.
- Q. Does Mr Carrington apply only 2 cwt of fertiliser to his pastures?
- A.-Yes. I do not apply any manure when sowing down pastures as I consider there is sufficient fertility.
- Q. (J. Tripp): Was the clover seed sown by Mr Carrington, Montgomery red or broad red?
- A. Sows whatever seed the merchant supplies. If the ticket says the seed is Montgomery red he has no reason to think otherwise.
- Q. (J. Tripp): Mr Carrington's seeding rates are delightfully low. Would he outline his method of preparing the seedbed?
- A. Following the swede crop I disc the ground and then harrow. I sow the grass seed through a Grasslands seed box with a spreading board. I don't plough the ground after swedes because I would lose consolidation.
- Q. (A. H. Flay): Does Mr Carrington feed out solely on his new grass paddock?
- A. Yes. My main object is to get the fertility and consolidation onto the ground that has just been sown down.