LAND DEVELOPMENT ON THE WEST COAST

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Abstract

With the aid of finance from the Rural Bank and various government incentive schemes, a four-year development programme of a 400 ha block of largely undeveloped land in a high rainfall area at Awatuna, **14** km from Hokitika, was undertaken in 1976. The area consisted of a mixture of alluvial flats, river terraces, mining tailings and pakihi, each with its own characteristics and problems. Development techniques for each of these areas are described, and the management policy which makes use of these particular soil types to form the basis of a successful beef fattening enterprise is outlined.

INTRODUCTION

Aratuna Farms Ltd was formed in 1972, the shareholders being my father, my brother and myself. For the next four years, as well as farming, we operated a contracting business with two bulldozers and one hydraulic excavator until my brother, who was not interested in farming, took over the contracting business and I bought his interests in the company.

The farm consists of two blocks, one situated in the Arahura Valley 8 km from Hokitika, and the other a further 6 km away at Awatuna. The Arahura block of 81 ha has been in permanent pasture for 45 years and was originally my father's dairy unit, but is now used to finish 600 cattle per year. The Awatuna block of 400 ha is made up of alluvial flats, pakihi and goldmine tailings. My father first bought 140 ha of this block in 1949 as a run-off for his dairy unit.

At that stage it was overgrown with second growth, bush and blackberry and much of it had reverted back to swamp. Since 1972 we have freeholded from the Crown a further 260 ha in four adjacent areas. Two hundred hectares of this block, in a small valley about 700 m wide, formed from washings from gold-

mining further up the valley, has very deep alluvial soil with no underlying gravels and consequently had largely reverted to swamp. The other 200 ha is a mixture of mined tailings, terrace soils and pakihi. It is on this block that my father and I undertook a major development programme in 1976.

DEVELOPMENT OF THE AWATUNA BLOCK

ALLUVIAL BLOCK

We initially concentrated on the 140 ha freehold block of alluvial soil in the valley. Over the previous 15 years, a large area had been developed to a reasonable pasture by my father, and to a lesser extent my brother and myself, using our own equipment when available to dig approximately 5 km of large drains and clear the bush and scrub.

At the beginning of the development in 1976, we obtained a development loan of $8000 from the Rural Bank, and erected 9 km of two-wire electric fence to subdivide the area into 22 paddocks varying in size from 5 to 8 ha, In addition, we built a hay and implement shed, and constructed an airstrip and adjacent fertilizer bin. Out of farm income, lime was applied at 3.75 t/ha and Flowmaster superphosphate at 500 kg/ha (10% serpentine-superphosphate) . At that time we were wintering 1900 stock units, but with the advent of the Livestock Incentive Scheme we undertook a three-year programme, to increase our stock units by 800 in the first year and 320 in both the second and third years. However, we progressed so well that in the second year we increased 640 instead of 320 stock units with the result that we almost doubled our carrying capacity in three years.

PAKIHI BLOCK

In 1977 we borrowed a further $8000 from the Rural Bank for land development on two pakihi blocks, of 6 ha and 16 ha respectively.

Seed and Ferfilizer

The 6 ha block consisted of 4 ha of stunted gorse which was sprayed with 2,4,5-T in November 1977 using a fixed-wing aircraft before aerial oversowing with 3.75 t/ha of lime, 500 kg/ha of "Westland Pakihi Starter" (10% serpentine sulphur superphosphate + Cu, Mo, B, Co) and a seed mixture of 5 kg/ha of inoculated and pelleted 'Grassland ***4703' Lotus pedunculatus*** and

20 kg/ha of Manawa ryegrass. Lotus was included instead of white clover at the suggestion of the district scientist of the Ministry of Agriculture and Fisheries.

As the 16 ha block was not sprayed, it was otherwise treated the same as the smaller block except that Huia white clover was substituted for lotus. Both blocks were oversown in February 1978. Also, a further 400 kg/ha of 28% potash, 4% sulphur superphosphate was applied in spring 1978.

Grazing Management

Following one light grazing in the winter, both pastures were grazed approximately every four to six weeks. On pakihi soils positive management is essential. To establish and maintain a good sward, management should include a rotation length of grazing of at least 4 weeks to allow regrowth to approximately 8 to 10 cm followed by as quick a grazing as possible. From observation it appeared that the lotus pasture has outyielded the clover pasture by 30 to 40%.

Drainage

All drainage on the blocks was undertaken after oversowing, which I now think was a mistake, and should be done in all main hollows before oversowing. All drains were made with a hydraulic excavator which appears to drain the pakihi soils far better than the V-blades. The V-blade, although cheaper, leaves the spoil on the side of the drain which tends to prevent surface water entering the drain.

Weed Control

Within a year of sowing we had a gorse problem on both the pakihi and tailings, requiring spot spraying with 2,4,5-T by tractor spray unit. From our experience, a heavy grazing before spraying reduces spray damage to the pasture. In addition, a rush problem is developing which will be controlled by spot spraying with 2,4-D.

TAILINGS

In February 1979, we commenced developing 52 ha of dredge and sluice outwash tailings under the Land Development Encouragement Scheme.

Some 20 ha was covered in second growth, native scrub and gorse. Clearing was with International T.D. 20 and T.D. 15 bulldozers, and as it was very rough ground required all the $250/

ha loan money allocation. Before sowing, heavy hydraulic land levellers mounted on a wheel tractor were needed. Fertilizer application at sowing was 500 kg/ha of Flowmaster superphosphate with lime and seed as for the 16 ha pakihi block but applied by ground equipment. It has taken twelve months to get a reasonable pasture established. Our practice of feeding hay and silage over the winter should build up fertility and thicken the pasture,

It is essential to develop as much of these stony tailings as possible, as this allows us to take the cattle off the heavier land to prevent pugging during wet weather. We intend to develop a further 20 ha this year,

At present we have developed approximately 325 ha to a reasonable standard of pasture although there is still room for improvement in pasture growth and thus stock production. Currently we have a stocking rate of 10 SU/ha wintered, rising higher in the summer.

FARM MANAGEMENT

This is a very important part of land development. On the Awatuna block we are currently running 410 1- to 2-year-old heifers and steers and 250 yearlings. These are in three mobs of over 200 each, one of rising 1- to 2-year-old heifers, one of rising 1- to 2-year-old steers and the other mixed-sex yearlmgs. These large mobs enable the paddocks to be grazed in 2 or 3 days, any longer being detrimental to pasture growth.

In the winter 220 calves are block-grazed on 52 ha, almost half the area being drier tailings which is used in wet weather. The calves receive approximately 0.6 ha of pasture a day plus between 10 and 16 bales of hay, depending on the amount of grass available. The rotation commences early in May and ends approximately in the middle of September. At this time the 1- to 2-year-old cattle are on two rotations of between 40 and 50 days each with silage fed out during the second round.

Over the 1979-80 season; we fattened over 800 head of cattle, 600 going to the local butchery trade which we supply all year round.

SUPPLEMENTARY FEED

We are changing our system away from all-hay to mainly silage as it is cheaper and much easier to make in our high rainfall climate. Last winter we fed 3000 bales of hay and 600 tonnes of silage.

MAINTENANCE FERTILIZER AND LIME

I believe that to maintain the high production necessary for successful farming, it is necessary to feed the soil through an adequate maintenance programme. In the past most of the fertilizer was applied by plane but now we are doing as much as possible ourselves by ground equipment to try to cut costs. Future maintenance fertilizer applications will consist of 500 kg/ha of 22% potash sulphur superphosphate in early February with hay and silage paddocks getting the same dressing also in the spring. This will cost approximately $65/ha. The current plan is to apply 2.5 t/ha of lime to a third of the farm each year. All lime is supplied by road from Ross, 50 km to the south, and fertilizer from Canterbury.

Apart from drainage and bulldozing work and a small amount of casual labour at busy times, all work on the farm is undertaken by my father and me. We have our own truck and trailer unit and carry all stock, and carry and apply all our own fertilizer and lime except for that which is aerially applied on the pakihi block.

Finally, although I have always considered myself an optimist as far as farming is concerned, the way costs have risen in the last two years farming will soon become unprofitable.

In conclusion I would like to pay tribute to my father who has always loved farming and seeing land developed. He has given me great encouragement and advice as well as working with me throughout the years. Also, we would never have been able to achieve what we have without the Livestock Incentive Scheme, the Land Development Encouragement Scheme, the subsidy on gorse spray, and the officers of the 'Ministry of Agriculture and Fisheries for advice. The Rural Bank has been a great help, not only to us, but to many other farmers on the West Coast.