# OBSERVATIONS ON THE DEVELOPMENT OF PRIVATE SHEEP FARMS IN NORTHLAND

## 1. The Sheep Farmer's Viewpoint

D. K. MCKENZIE
*Farmer, Waihue*

THE aim in this paper is to describe grassland improvement work undertaken on my Waihue farm, with the emphasis on the development work that has been done, and the methods evolved. No attempt will be made to measure their success, as this aspect will be covered in J. D. Currie's paper.

### BACKGROUND

In the autumn of 1955, attracted by cheap land, I took over a Crown renewable lease section of 368 acres, in Waihue, 10 miles north of Dargaville. Its contour is rolling to steep and perhaps one-third could be cultivated by crawler tractor. The soil type is two-thirds Aponga and one-third Waiotira clay, formed from weathered mudstone and sandstone. At the time of my arrival, the cover was mostly fern which had been regularly burnt, interspersed with patches of grass, mostly browntop, ratstail, danthonia and paspalum. Out of sight, under the fern, there proved to be embarrassing quantities of timber — stumps and heads of trees, some up to 16 ft in girth, and mainly kauri.

The farm was carrying less than one ewe per acre and returning 12 bales of wool. In addition, there were about 60 cattle of mixed age and sex. Basic slag was said to have been applied to part of the farm about 1940. Lime was also said to have been spread, at ½ ton per acre on separate pieces of land, mostly small pieces of flat, and this completed the fertilizer history.

Rainfall at Waihue averages 57 in., varying from 45 to 70 in., and this, coupled with the particularly sticky clay, can produce conditions more suited to growing rice than farming sheep.

As my own capital was limited, the purchase of improvements was made possible by a loan from my father. All the stock was financed by a stock and station agency.

Brought up on a hill farm, and then fat lamb country, my experience was of the type a country lad picks up without realizing it -one winter of shepherding, a little fencing, sixteen months in a wool store, and work on the wharves at night.

### DEVELOPING FROM REVENUE

In the first year (1955–6), with youthful enthusiasm and little knowledge, a start was made by clearing the timber from 90 acres of the easiest land. Eighty of these acres were worked with a harrow built to withstand the timber. The remaining 10 acres, being flat, were suitable for conventional cultivation with giant discs. The seed was sown with a lime-superphosphate mix, to give 5 cwt of superphosphate and 1% tons of lime per acre. A vintage model seed-stripper was resurrected and used to collect most of the ryegrass and crested dogstail seed required from my father's South Auckland farm. Subterranean and white clover were added but not inoculated. By spring, the subterranean clover was flourishing, but white clover was almost non-existent. This was especially noticeable on the oversown areas where the grasses had been allowed to grow rank and smother the few clover seedlings that germinated. Rushes grew in great abundance; in fact. it was suggested that they be cut and treated for fence battens.

At this time, I was experimenting also with the control of ratstail and bracken-fern by using cattle. The first winter was spent propping and patching old fences to give six largish paddocks and two smaller holding paddocks. I was then ready to make a start with rotational grazing-the topical and fashionable practice of the day.

My father lent me some four-year-old steers he purchased from the Lands and Survey Department "Omamari Block" — steers which had probably lived largely on scrub, so that the shift to ratstail and fern gave them a higher standard of living. Together with my own steers, these constituted a mob of 130. With the breeding cows ahead, they were rotated, these poor unfortunates, through the summer and winter of 1956. By spring, there were 200 more acres ready for topdressing and oversowing. The job done, my father's steers were returned and my own were sold.

This procedure was a mistake, however, as there were no funds available to follow up with a topdressing programme, and I have since learned the use of the fire-stick. On the credit side, I did learn what could be done quickly with stock, but had done so without financial gain.

By the end of the second year, a further 27 acres had been stumped and sown. Lime was spread over all, and molybdate superphosphate over part of this area, as a trial. The difference in the virility of the white clover was immediately evident, and the use of molybdenum has proved a major factor in the development of the property. It certainly was a boost to my morale at that stage.

With all the easier land improving, the time had come to concentrate on the steeper country — those hills that had been thrashed so thoroughly earlier. It was too steep and stumpy for topdressing trucks, and aerial spreading seemed the logical answer. An airstrip was constructed during the summer of 1958, even though the capital cost after three years in business was very large when compared with the farm's gross income.

For the first two years, while baching, my living expenses had been very modest. After marriage, increased costs at a time of falling prices, and an overdraft "hangover" from the building of the airstrip the previous year, made 1959 a year for restraint. But enough money was made available to topdress the land previously improved, using the airstrip for the first time. This lack of funds for continuing capital work was another turning point.

### BORROWING FOR ESTABLISHMENT

The object had always been to improve the farm as quickly as possible, and by now it was clear that it could not be done out of income. An application made to the Marginal Lands Board for money to continue improvement was successful, and;in 1960, with finance available, a start was made on the development of the original, cattle-crushed blocks. One hundred and twenty acres were oversown and topdressed with lime and molybdate superphosphate and a further 30 acres were cultivated.

It will be noted that the policy was still one of expensive cultivation. My trusty veteran tractor, which had given such solid service for the original f90 invested, had been retired in favour of employing a contractor with a crawler-type machine. Although the contour was steep, it was thoroughly harrowed to prepare the type of seedbed that would minimize the rush problem. With a 10 in. rainfall the following December, the new grass shot away to produce clover growth as strong as any on the pumice country. Heavy liming, certified seed, a well-prepared seedbed and generous fertilizer had paid dividends. However, the oversowing did not receive the same sensible precautions. The

mistake was made of mixing the seed with the superphosphate, when it was sown by air. Heavy dews and fresh superphosphate, in combination, burned some of the seed and it was soon evident that the seed, fertilizer, and lime had fallen in strips, but not necessarily in the same strips, for, by the following wet summer, the hills had a striped appearance. It took five or six years for the clovers to spread all over those paddocks. The initial Marginal Lands Board programme was now completed.

In the summer and autumn of 1961, maintenance dressings of lime and superphosphate were applied to the areas previously improved. This annual maintenance dressing was an essential part of the development programme, as was the additional subdivision carried out. After six years, the number of paddocks had increased from eight to eighteen. Wool production, although modest, had doubled to 25 bales, but wool weight per ewe was still under 10 lb. Calving and lambing percentages had risen from the mid-seventies to the low-nineties. So, after six years, no dramatic increases in carrying capacity had been achieved. (It has since been realized that Aponga clay is slower maturing than Waiotira — it has no topsoil or humus.) But the stage was now set for a faster increase in production, by putting on more stock to utilize the increased growth that came as the developed land consolidated. To increase stock, all ewe lambs were wintered and lighter culling of the ewe flock and breeding herd was required. Income suffered and a continuing source of outside development finance was again needed.

## BORROWING TO CONSOLIDATE

Until the summer of 1962, the soil handled had been the handier, heavier Aponga clay. The balance, at the back of the farm, was kinder Waiotira hill country, still covered by heavy uncontrolled fern, with a few patches of grass. It was to a hill farm what a hay paddock is to a flat farm.

The Marginal Lands Board, approached again, advanced sufficient finance to lime at 1 ton per acre, topdress at 6 cwt of superphosphate per acre (half molybdate), and provide seed for oversowing the back 80 acres. Additional money was found to add 4 cwt of superphosphate, making a total dressing of 10 cwt, sown in two applications of 5 cwt each, one on. the fern before burning, and the follow-up at seed sowing in April. This was my first experience of burning, and in some areas the damp layer of debris under the fern did not burn. The result was a patchy strike, but this time

the seed was successfully and evenly sown by air with the new swathmaster seed-sower.

The area had been hard stocked at the time of sowing and the grasses were short. Even though I had not yet learned to tramp the seed in with stock, the pasture establishment was startling. For the money, time, and effort involved, this piece of development was the best yet. Some credit must be given to the soil type, Waiotira, which is easier to handle.

After nine years of continuous maintenance topdressing, at about 3 cwt, plus lime, wool production reached 40 bales, which was 3½ times the original figure. Lambing had reached 100% with about half the wether lambs away prime, but, with fewer than 1,000 ewes, the farm was still in the marginal category.

### ADDITIONAL LAND PURCHASE

When an opportunity to buy an adjoining Crown lease section of 323 acres arose in 1964, through force of habit it seems, the Marginal Lands Board was approached for finance to buy the improvements. The Board approved, and the additional stock needed were financed by bank overdraft. This new land had been stocked with dairy cattle, but mainly on the 30 acres of flats. On the hills, fern, fescue, tea-tree, blackberry and patches of totara bush come to mind.

By pulling old fences down, patching others, and with some new fences, mob-stocking was possible. Three years later, the front half of this new block is well on the way to growing good grass. Patches of blackberry and scrub remain today, but tidying only is needed. More important, the back half received "the treatment" last summer ( 1967).

### THE TREATMENT

The treatment started with the chainsaw, bulldozer, and fire clearing to ground level the rubbish that stock could not deal with. Small isolated patches were ignored. Access roads were built to allow normal stock and vehicle traffic, and these were supplemented with additional tracks to allow the use of blower trucks for spreading lime. This may appear an extravagance with a good airstrip available, but the difference in spreading costs between blower and aerial application pays for the tracks with the first ton of lime sown. The first ton of lime was sown as soon as the tracks were completed — about Christmas. Molybdate superphosphate was aerial sown at 4 cwt in February — ahead of the

seed to avoid the risk of seedling damage. Over the summer, the ewe flock kept the original cover extremely short, and after weaning in March the run cows were added to the work force. All rubbish was eaten as a matter of course, though the cows did not appear to eat the totara.

Because 150 acres was considered too much to handle with the available stock, half the area was sown with seed, by air, in late April, and the balance was delayed three weeks, into May. The stock were still grazing on these areas at the time of initial seed sowing, and were then concentrated on the first 75 acres to tramp the seed. Once germination began, the stock returned to the balance of the block before being removed for a well-earned rest. The new area has been kept short through the winter and the clover was well established when it received its second dressing of superphosphate this spring. Being Aponga clay, it will receive another ton of lime before the end of its second year.

## STOCK POLICY

An all-breeding policy has been followed: virtually all ewe lambs and the best heifer calves have been retained. Young stock always receive the best possible treatment with the result that the two-tooths often return higher lambing percentages than their mothers. Open-faced rams have always been a first preference.

Both ewes and cows are made to work, in rotated mobs whenever possible. I learnt a lesson when I rotationally bogged a large number of steers through my second wet winter (1956). The herd is now set-stocked over the winter, on the basis of one beast to four acres of grazing. This has meant a similar approach with the ewes, to prevent the cattle harvesting sheep-quality pastures. The reasonal rainfall dictates the timing of the autumn change from rotational grazing to set-stocking- the heavy soils call the tune.

The stock management policy can best be described as farming the country rather than the animals.

## WEED CONTROL

So far, weed control has been left. to the stock in the firm belief that the most important thing is to develop a strong sward on which to build up the fertility required to support greater numbers of stock. Inkweed is continually stripped of leaves and broken down by cattle. Ewes strip the blackberry leaves. Patches of scrub are contained. Fern is rio

problem. Rushes die out and are replaced by grass. All this at no direct cost and without work.

### EROSION

The sight of countless eroding gutters and underground holes all spilling muddy water when it rained, and even when it just showered, as Northland can do, set me to experimenting with the planting of trees. It is my firm belief that the ultimate carrying capacity of hill country will not be reached by grass alone. Details or reasons cannot be discussed here, except to say that it is my aim to achieve an average of ten trees per acre on these Crown leasehold hills-this is in the best interest of the land.

### BUDGETARY AND FINANCIAL CONTROL

Without finance from the Marginal Lands Board, the development would not have been possible. There is a limit to the extent that hard work can make up for capital. My policy has been to put as much surplus revenue as possible into development and stock, and then to borrow the balance to ensure that the programme was not starved of necessary funds. This is a policy of circumstances.

Having a mortgage to a stock and station agency proved a blessing in disguise, for, without the help of its staff, a start could never have been made. They taught me how to prepare an annual budget, a financial exercise that I have continued, even since the company has been repaid. This has been valuable not only for planning but also as an asset during the annual tussle for seasonal bank finance.

Latterly, with falling prices, it has been necessary to regularly revise accounts, and a recent change has been made to a June balance year.

### WORK FORCE

Contractors have done all the topdressing, bulldozing. and shearing. Accidents on the farm put me in hospital three times — they made me unpopular with my insurance company, but also very conscious of the vulnerability of the one-man farm. Permanent married labour has been employed for nearly two years now, to provide some continuity of management.

### THE FUTURE

After **12** years, the farm is carrying 2,100 ewes and 900 sheep, producing 8.5 bales of wool. One hundred and fifty

cattle, mostly breeding cows, are also run on the 690 acres. With the nitrogen cycle firmly established, and the steady build-up of soil fertility and humus, the look of maturity associated with older improved farms is beginning to appear. I do not know the ultimate carrying capacity of these hills, but I hope to see the present stock numbers doubled in my time.

Good management and hard physical toil do not mix well, and my aim is for something larger than a one-man unit. One man farming on his own account tends to be a jack of all trades and master of only some. His farm, as a business, is very vulnerable in times of illness or accident. This, coupled with the growing capital requirements of farming, leads to the belief that, although the one-man family farm will probably always have its place, farming in New Zealand will develop along the lines of larger units and limited liability companies. This would give the average urban dweller a chance, if he wished, of having a stake in farming — a chance in the weekend to get his feet muddy, to give the fox terrier a walk (firmly on a leash), and to give the manager the latest in advice. Certainly farming as a whole would benefit from some of the wealth so evident in city areas. We know what is needed, we know what can be done and we know how to do it. Is New Zealand ignoring her greatest potential?

## DISCUSSION

***What stock concentration was used to control the fern?***

Everything on the farm. Last summer, on 75 acres, 2,000 ewes and about 160 cows were used. At present, I have about 13 dry ewes per acre, virtually set-stocked on a small area, controlling fern, blackberry, scrub, inkweed, rushes and fireweed.

***Could Mr McKenzie describe his fertilizer policy, especially in regard to liming?***

Because of a shortage of money this year, I put no fertilizer on the original 368 acres which have received development and maintenance topdressing for up to ten years. I was interested to see how this would affect the pasture. However, the more-recently purchased block received 60 tons of molybdate superphosphate. My policy is flexible.

Unlimed areas receive two tons of lime per acre as quickly as possible, certainly within two years of beginning development. Therafter, one ton is applied every four years by blower, or ½ ton every four years by air where the trucks have no access.

***What seed mixture is used?***

Light seedings of perennial ryegrass, cocksfoot, and 3 lb of white clover. The main object is to get the clover established. I have dispensed with subterranean clovers.