
PUWERA FARM VISIT

Commentary by P. W. SMALLFIELD, Director,
Extension Division, Department of Agriculture,
Wellington.

Few now realise the problems of marginal land development which confronted land improvers 30 years ago. Now we are only half satisfied if we can establish productive pastures of perennial ryegrass and white clover; we look for something better. Then the problem was whether perennial ryegrass was worth trying for or should pastures on gumland be confined to species which appeared likely to thrive, such as browntop, chewings fescue, paspalum, kikuyu, and *Lotus major* and white clover. If the pastures were confined to this latter group of species, there was little chance of economic, large-scale development, for production costs would not be matched by revenue.

Work at Puwera Farm (Otaika as it was then known) started in 1912 under the direction of J. Duncan, then inspector in charge of the Auckland district, and it is probable that the actual work was supervised by J. T. Stone, Stock-Inspector, Whangarei. The general idea of the first work was to find out what grasses, clovers, and fodder crops and cereals would grow on gumland, and the first work was on garden lines in which the growth of individual plants or rows of plants was studied. In 1917 R. Rowan took over the supervision of the plots and expanded the nursery and land development work.

In 1920 T. H. Patterson and W. Dibble set about developing sufficient land to establish a dairy herd. They worked to raise soil fertility by liming, heavy phosphating, and drainage. The main problem, as I have mentioned, was the efficiency of perennial ryegrass. There was then no Certified seed; false perennial ryegrass, which dominated the commercial market, hardly lasted a season. Patterson tried paspalum, cocksfoot, and white clover mixtures and special pastures of kikuyu and *Lotus major*, both of which were successful but did not solve the problem of winter and spring feed. Dibble secured a truly perennial strain of ryegrass from the east coast and succeeded in estab-

lishing pastures of perennial ryegrass, paspalum, and white clover, It took several years to demonstrate that perennial **ryegrass** could be relied on to form an important and permanent constituent of pastures on gumland. After the demonstration of the successful use of perennial **ryegrass** further land was developed and a dairy farm established. The Department of Agriculture handed over the farm to the Lands Department for settlement during the depression years of the early 1930's.

The most important lessons learned at Puwera concerning marginal land development in general and **gumland** in particular were :

The necessity for thorough and timely cultivation to prepare a seed-bed for grass.

The value of drainage.

The necessity for adequate liming and top dressing, and

Finally, the value of truly perennial strains of ryegrass.

The use of these methods demonstrated that **gumland** could be developed into productive dairying land without a long initial period of fertility building through the use of temporary pastures and initiated most of our present conceptions of marginal land development.