

Kikuyu-grass (*Pennisetum clandestinum*).

An area of 1 acre was laid down in the spring of last year with kikuyu-grass, white clover, and *Lotus major*. Roots of kikuyu were planted, as the grass does not seed. The roots were spaced in rows 5 ft. apart and 3 ft. between the plants in the rows. Alongside was an acre plot of paspalum with *Lotus major* and white clover, and another plot of prairie-grass and red clover. The kikuyu grew vigorously, and with the clover and *Lotus major* produced a great quantity of feed. Cattle were turned in on the plots, and they fed off the kikuyu before going on to the other plots; they relish the grass. These kikuyu and paspalum plots were top-dressed last autumn with equal parts of slag and super mixed, and when the kikuyu was inspected on 29th September it was commencing to shoot.

At Albany the area on which kikuyu and *Lotus major* are growing together produced excellent herbage, while plots near-by where kikuyu and white clover were growing, and kikuyu alone, were not satisfactory. The growth was poor and the turf appeared to be sod-bound. The results on these plots illustrated most strikingly the advantage of growing kikuyu with *Lotus major* in addition to clovers.

As seed of kikuyu-grass cannot be procured its economic value in New Zealand farming must be thereby limited. Areas have to be planted with roots. The roots, of course, could be planted with the plough as in the case of young mangold-plants. Clover and *Lotus major* seed can be sown broadcast on the area after the kikuyu is planted.

MANURES FOR PASTURES.

Results show that phosphatic manures are essential on these soils. Their application is followed by an increase in clovers and other legumes, while the grasses also directly benefit. Stock at Puwera, as elsewhere, show a preference for pasture on which phosphates have been applied. Basic slag, basic slag with superphosphate mixed, and superphosphate with lime all give satisfactory results. Ground raw rock phosphate, though slower in producing growth than any of these fertilizers, has nevertheless promoted clovers and improved the pasture. From trials now in progress at Puwera the increase in the weight of hay produced on permanent pasture with a top-dressing of 3 cwt. per acre of ground raw rock phosphate has been approximately 30 per cent. That was very satisfactory for the first year. The pasture had been established five years and had received no fertilizer since being seeded. Ground raw rock phosphate, mixed with superphosphate, using equal weights of each, has, from eye inspections, given much better results so far than raw rock phosphate alone. The weights of hay will be taken at the end of this year when these plots are cut.

Where the areas have been top-dressed in Field 6, the pasture of plots 6 and 8, dressed with Nauru ground raw rock phosphate and lime, still remains poor, whereas plot 7, which lay between the two last-mentioned plots, and which received pure ground rock phosphate only, has a good mixture of clovers and grasses. This is the third season that this trial of ground raw rock phosphate with and without lime has been continued.

It has been well demonstrated that a pasture at Puwera cannot be satisfactorily maintained without regular top-dressings with some kind of phosphatic manure.