

the two areas would have said that at least four times as much cocksfoot had been used on one area as on the other. As the paddock had been grazed almost entirely with cattle, there were numerous patches on both plots marking droppings where the grass had not been eaten. In no case on the area where Italian was sown were there any seed-heads of cocksfoot in these patches. On the other hand, in all the ungrazed patches on the no-Italian areas the cocksfoot was seeding freely. At the time of writing (end of April), just twelve months from the date of seeding, the cocksfoot-no-Italian area is a splendid cocksfoot pasture, and in combination with crested dogstail, which was used at the rate of 4 lb. per acre on both blocks, forms an excellent even sward. The cocksfoot-plants in the Italian block, on the other hand, are still small, and under heavy grazing would never form a sufficiently compact sole to remain permanent.

It is probable that small seedings of Italian rye would exert no harmful effect on cocksfoot-establishment, but I am inclined to think that in no case should the amount exceed 4 lb. per acre. Again, on ground of only moderate fertility I should omit Italian altogether. On bush-burn country where perennial rye-grass does not hold longer than from two to three years, and where if possible cocksfoot should be the dominant grass, I should include Italian rye-grass rather than any perennial, using, say, about 4 lb. per acre. The depressing effect of Italian is not so marked on bush-burns, as in general the whole seeding is much lighter than on ploughed land, and competition is not so keen in the early stages of the development of the land into grass.

THE TOP-DRESSING OF COCKSFOOT.

As has been mentioned, on pastures that are continually grazed cocksfoot rarely produces any seed-stalks. This is in marked distinction to such grasses as the ryes and crested dogstail. Again, on soils of low fertility cocksfoot may not flower until two or three years after sowing, even if left unstocked. The same phenomenon also occurs on the short-rotation grassland of Canterbury, where small amounts of cocksfoot may be included. Much of this grassland in its first and second years is harvested for rye-grass seed, but cocksfoot is rarely found in any appreciable amount in farmers' dressed seed from such crops. In cocksfoot-establishment rapid growth from germination onwards is always a factor of intense importance. If the early growth is slow, unless the soil is of exceptional fertility, further development is unsatisfactory. On soils where cocksfoot appears naturally difficult to establish, top-dressing with a nitrogenous manure so as to stimulate growth seems to be necessary. The wonderful results of heavy seedings of clover with cocksfoot seem to point to this, and an experience at Weraroa appears to support such view. In the autumn of 1917 a block of 6 acres of pure cocksfoot was laid down on some very stony ground on the farm—so stony, in fact, that one end of the area is used as a gravel-pit. On this ground considerable extents of the cocksfoot did not produce any seed-heads even nearly two years after sowing, the plants remaining about 6 in. high. The area was stocked for a few days in the winter of 1918, and in January of this year it was noticeable that over all the area where the cocksfoot remained stunted there were vigorous patches of cocksfoot with seed-