

cent. increase in yield. This furnishes further evidence that raw ground rock phosphate when put on soil recently limed gives comparatively poor results. On the other hand, superphosphate applied to the soil which had been limed the previous season gave satisfactory results.

To value the action of the fertilizers in terms of weight of hay only is not satisfactory. Though great care is taken to get reliable results, there may be a considerable variation in the percentage of moisture contained in the hay at the time it is weighed. Apart from that, the improvement effected on the pasture by the fertilizer is a most important consideration, and cannot be estimated by the weight of hay produced. Shutting up and allowing the pasture to grow for hay does considerable harm to the pasture for grazing; also many weeds are favoured. Cocksfoot is induced to grow tufty, and white clover suffers through being shaded. These are often important constituents of a permanent pasture, and such is the case with the pasture on which these experiments are being conducted.

IMPROVEMENT IN PASTURE.

The plots considered from the point of view of improvement of the pasture show some important results. On inspection made before haying the areas on which superphosphate and lime had been applied stood out strikingly. The colour of the pasture was a rich healthy green, and the bottom growth dense, due principally to the large proportion of white clover and trefoil (suckling-clover) present. Cow-grass growth was strong also. Alongside the superphosphate-lime plots were those which had received raw ground rock phosphate and lime. On the latter the grasses and trefoil were pale in colour and starved-looking, while the general growth, as shown by the yield of hay, was poor. It had, however, improved a good deal since last season. On the unlimed area the plots which received superphosphate produced a vigorous growth. This fertilizer stimulated weeds as well as grasses and clovers. Yorkshire fog was abundant and luxuriant where super was applied, while alongside in marked contrast were slag plots with very little fog present. The line dividing the areas before the grass was cut could be distinguished by the presence of fog on the superphosphate and its comparative absence on the slag plots. There has been a decided general improvement on the slag plots. The areas which received raw ground rock phosphate but were not limed showed a good growth of grass, while cow-grass and white clover had also responded very well. Fog was not conspicuous as on the superphosphate plots. On the check plots, which received no manure, the clovers were hardly seen, while bracken-fern was well distributed over the areas. The general growth was poor. A considerable amount of sweet vernal and weeds were present.

The accompanying photos give a fair idea of the various features of growth. They were taken just prior to cutting the areas for hay.

GENERAL.

The results here recorded can be regarded only as progress results, and more definite conclusions cannot be drawn until after the trials have been continued over at least five years. Moreover, a summary of