POTASH TOP-DRESSING OF AUCKLAND PASTURES.

RESPONSE FROM POTASH AT WAIHI.

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(Concluded.)

RESPONSES IN OTHER DISTRICTS.

IN other districts responses to potash are not so consistent, and cannot be confined to one soil type or to one locality. Nevertheless, isolated striking responses have been obtained on all soils—on peat, on sand, loams, clays, and silts. There is little doubt that as experimental work progresses soil types in some localities will be recognized to be potash-deficient to some degree. In different localities and soils the pastures vary somewhat, but the method of improvement by potash is the same in principle.

On the gum-land soils of the northern parts of the province a common poor sward is brown-top dominant. Common clovers in such a sward are *Lotus* species and white clover. One observational trial at Waimauku, Waitemata County, on such a soil was laid down on a dominant-brown-top sward with much Chewings fescue and rib-grass and a scarcity of clovers. A casual inspection did not reveal the presence of better grass species in the sward which was improved in the following sequence by the use of superphosphate plus lime plus potash. First there was an increased growth of *Lotus hispidus*, *Lotus major*, subterranean clover, and white clover. The ascendancy of the subterranean clover was marked first, and later the white clover overtopped the subterranean clover and subdued it. Improvement in the better grasses did not occur until the white-clover dominant stage was reached, when many plants of rye-grass, paspalum, cocksfoot, and crested dogstail appeared prominently in the sward. The Chewings fescue has almost entirely disappeared from view, but the more virile brown-top is still there, although not prominent, and has changed in appearance from a dull hue to a healthier deeper green colour, after only two years. The difference between the superphosphate plus lime plus potash plot with its thick carpet of white clover and vigorous rye-grass and crested dogstail and paspalum, and the superphosphate plus lime plot with its less vigorous sward of clovers and inferior grasses is quite striking. Other plots included one treated with lime and potash, and at one of the early inspections it was noticed that this plot had arrived at a stage when subterranean clover was the dominant clover, while the superphosphate plus potash plus lime plot had arrived at the stage where white clover was in the ascendant. The lime plus potash plot did not get much beyond the subterranean-clover-dominant stage and white clover did not flourish through phosphate deficiency. Consequently there was not much further improvement in the lime plus potash plot beyond the brown-top - subterranean - clover stage. The vigorous white-clover - dominant stage could only be reached by the use of superphosphate plus potash plus lime. Without a thick vigorous sole of white clover the mat of brown-top remained unchallenged by better grasses. Superphosphate and lime alone or combined could not bring