

RESIDUAL EFFECTS OF FERTILIZER ON NATIVE GRASS

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The residual effects of fertilizer on native grass have been measured during the past 5 years at several locations in southwestern Saskatchewan. They were measured for the three factors, yield, chemical composition of forage, and the available nutrients in the soil. The yield and chemical composition of the forage have been determined each year and soils from the plot areas were collected and analyzed in 1967.

The difference in total yield from the fertilized plots and from the unfertilized plots after two years residual effect was usually enough to more than pay for the fertilizer.

At all locations the percent phosphorus in the forage was increased from the use of phosphatic fertilizers, alone or with nitrogen. This increase persisted at all locations in 1967. There was no residual effect on the nitrogen content of forage after the second year, and generally very little effect in the second year.

There was no difference from fertilizer treatment on the nitrogen content of the soil one year after applying fertilizer. The sodium bicarbonate extractable phosphorous content was measurably increased by the application of any rate of phosphatic fertilizer. Even applications of 25 pounds per acre of 16-20-0 in 1963 increased the P content of the soil in 1967. Higher rate of applications gave larger increases.

The initial benefit from the use of fertilizer depends on the level of soil nutrients. The persistence of this benefit also depends on the initial level of soil nutrients.