SUMMARY

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Different rates of N and P were applied for the second year to a mixture of brome and alfalfa at Moosomin, Peebles, Ryerson and Theodore. The response to N and P both years was similar. There was a good response at all locations except Moosomin. The most economical rate was 20 to 30 lb/A of N and P_2O_5. The soil was very low in avail-P and very low to low in NO_3-N. The alfalfa in the mixture approached 45% at Moosomin and 35% at all the other locations in 1969.

A severe hailstorm, just prior to cutting, damaged the alfalfa in a test on Waitville soil. The alfalfa responded to the application of S but very little to N and P.

In a sweet clover test sown in 1969, nitrogen alone or in combination with P, even at low rates, reduced the number of plants. The reduction was more severe with the higher rates of N. Less damage occurred when N was broadcast on the surface.

Different rates of N and P were applied to potatoes grown under irrigation in the Qu'Appelle Valley. The soil tested high in avail-P and medium in NO_3-N. Yields were increased by rates of N up to 150 lb/A and were increased further when N was applied in combination with P. The optimum rate appeared to be 50 lb/A of N and 100 to 150 lb/A of P_2O_5.