Improving Yield in Alfalfa Seed Stands with Balanced Fertilization

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Field experiments and survey trials were conducted from 2000 to 2007 in northeastern Saskatchewan. The objective of field experiments was to determine the influence of balanced fertilization on yield and longevity of alfalfa seed stands. In all experiments, blends of fertilizers (P, S, K or B) in different combination at different sites (depending on the nutrient deficiency in soil) were surface-broadcast in mid to late April (early spring) in every year. The purpose of field survey trials was to determine the reasons for low alfalfa seed yields on farm fields. Alfalfa at maturity was harvested for seed yield in October. In a few experiments, alfalfa dry matter yield (DMY) was also taken in mid August. The results of field experiments in different years (with the exception of years with drought and/or early autumn frost) indicated that there was generally an increase in alfalfa seed and/or DMY from fertilization in some fields when soil had low levels of available nutrients. The results of survey trials suggest that in some alfalfa seed fields, poor seed yields may be due to nutrient deficiencies and/or a soil fertility imbalance. If a soil is testing low (or deficient) in a nutrient and alfalfa growth is reduced, then it is suggested that alfalfa seed producers should plan to use fertilizer to apply an adequate amount of that nutrient lacking in the soil. However, even after conducting soil and plant tissue analyses, it is still difficult to predict accurately if a profitable alfalfa seed yield response to fertilization will occur, particularly when the soils are testing marginal in some nutrient levels. Therefore, if it is suspected that a nutrient is deficient in soil, that nutrient should be applied to a portion of the affected area of the field in marked test strip. Visual observations, along with measurements of yield from treated and untreated areas, should be undertaken to determine if a measurable yield response had occurred. In order to save money and optimize the use of fertilizers, alfalfa seed producers can use the following suggestions: Apply fertilizers in test strips to find out if there is any increase in alfalfa seed yield and only then consider fertilization of the whole field on a regular basis. If there is a plan in place to use fertilizers on the alfalfa seed field, leave some strips without fertilizers in the field to compare alfalfa seed yields with and without applied fertilizer.