

Fertilizer Management for Seed Production of Perennial Forages in Saskatchewan

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Forage seed crops are frequently produced on infertile soils which increase the importance of nutrient management on these crops. This report summarizes research information on fertilizer management for improving seed production of perennial grasses and legumes mostly in Saskatchewan. Nitrogen management produces the greatest grass seed yield increases but will not increase yield if P, K, and S are limiting, or out of balance. The best N source for surface-broadcast application is ammonium nitrate (34-0-0), because it is highly soluble in water and readily moves with soil moisture to roots for rapid uptake (but it may not be widely available in the market). Although urea (46-0-0) is highly soluble in water, it is vulnerable to N loss through ammonia volatilization when surface applied and thus less N may be available to the crop. So, time of application in relation to rainfall and placement method is important for urea fertilizer. All N sources can be equally effective when applied properly (e.g., just prior to rainfall or placed below the soil surface). Because grasses efficiently absorb water from soil, the risk of N leaching or gaseous N loss by denitrification is usually minimal. Time of N application is critical because many grass species require cold period before they will flower. Therefore, fall application is recommended for many grass species. Inoculation of seed with correct strain of *Rhizobium* is critical for producing a healthy stand for legume forage seed production. For legumes, focus on correcting P, K and S deficiencies for legumes (as N fertilizer is not needed). Whenever possible, band the fertilizers (particularly P, K and urea for N) into the soil for most efficient use of the nutrients. Alternatively, higher rates of P and K may be broadcast and incorporated into the soil prior to seedbed preparation. Soil testing to 60 cm depth for N and S, and to 15 cm depth for P and K to find if any nutrients are lacking in the soil and then apply fertilizes accordingly.