

Fertility Needs for Forage Production

Nutrient deficiency in soil is an important factor that limits forage productivity in Western Canada. Often forages are seeded on marginal land that limits yield success from low soil nutrient levels after 3-5 years. Forages remove more nutrients from the soil than many other crops due to the large amount of biomass that is harvested yearly.

Management systems will affect the long term nutrient status of forage fields. A fertility program is usually implemented when seeding a tame forage or legume in the year of establishment. The concern is the replenishment of the soil nutrients that are being extracted from the soil profile over time to sustain the desired yield. Hay production removes a large amount of nutrients from the soil profile and there is a requirement to replace those nutrients each year to maintain the yield response.

Nutrients Removed in Hay Production (in lbs./acre)

NUTRIENT	2.5 TONS/ACRE ALFALFA	1.5 TONS/ACRE GRASS
Nitrogen (N)	145 lb/acre	51 lb/acre
Phosphorus (P ₂ O ₅)	35	15
Potassium (K ₂ O)	150	65
Sulphur (S)	15	6

Multiply lbs./acre by 1.121 to convert to kg/ha
Source: Nutrient uptake and removal by field crops (Fertilizer Canada)



Livestock grazing removes fewer nutrients than a physical haying operation as the biomass is not removed from the land under a grazing scenario. The majority of the Nitrogen, Phosphorus, Potassium and Sulphur that are consumed by the livestock are excreted as urine and feces and the nutrient cycle continues.



The goal of a fertility program is to decrease the per unit cost of production and optimize sustainable biomass production. It is important to soil test yearly to determine the nutrient status of the forage stand and to plan for the production requirements.

Take the time to visit with your Northstar Seed sales agronomist regarding forage production planning and visit with your fertilizer dealer to evaluate your soil nutrient profile. Employ the correct fertility program for your operation to improve the bottom line and remain a sustainable forage producer.



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