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### POTASSIUM IS KEY TO ALFALFA QUALITY AND YIELD

**Alfalfa is a long-lived, deeply rooted perennial that requires proper management to reach its full potential.** Maintaining an adequate supply of nutrients in the soil is the first step in proper management. However, all the plant and soil factors need to be well managed in order to gain the maximum benefit from the applied nutrients.

**There is no substitute for maintaining an adequate plant nutrient supply** for the production of high-yielding and high-quality alfalfa. Alfalfa (and all forages) will remove large amounts of potassium (50 to 60 pounds of K<sub>2</sub>O per ton of forage) from the soil that **must** be eventually replaced to remain sustainable. Potassium has an essential role for maintaining both yield and quality in alfalfa.

**Potassium is vital for producing high-quality alfalfa.** It has been repeatedly shown that potassium will improve stand persistence and yield, as well as hastening plant recovery after harvest. Adequate potassium nutrition also reduces leaf drop, leaf spot, and improves the leaf to stem ratio in the hay, resulting in higher quality hay. Higher levels of nitrogen fixation are observed in alfalfa that receives adequate levels of potassium fertilization. Potassium is also beneficial for improving winterhardiness, stand persistence, and longevity.

**There are several methods to diagnose potassium deficiency.** Once visual symptoms become evident, there has already been considerable plant stress and loss of yield. Testing the soil before planting the crop is the best way to avoid nutrient deficiencies. Follow-up plant sampling and tissue analysis should be done on an annual basis to make sure that deficiencies do not gradually creep in to depress yield and quality.

**Luxury consumption of potassium can result from heavy fertilizer application.** Soil cations compete with each other for uptake by the plant, so high rates of potassium addition may result in decreased tissue concentrations of calcium and magnesium. If high rates of potassium are called for by the soil test, it may be useful to split the fertilizer addition into two or three smaller applications. In some cases, supplementation with additional magnesium may be desirable too.

**There are many excellent sources of potassium.** The potassium in fertilizer provides the same form of nutrient, regardless of the source. Since the major decision when selecting a potassium fertilizer source should be based on the need for the accompanying nutrients (such as sulfate, magnesium, chloride, phosphate, etc), price is not the only consideration. The application equipment available for adding the nutrients may also be a consideration.

**It may be time to take another look at potassium for your alfalfa.** Release of potassium from soil minerals may provide a reservoir of potassium, but the heavy nutrient drain that alfalfa places on the soil can exhaust this supply. Don't risk loss of alfalfa yield and hay quality by neglecting one of the essential keys of production...proper plant nutrition.

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