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HAY AND SILAGE REQUIRE PLENTY OF NUTRIENTS

Hay and forage production is an important part of agriculture in every state in every region of North America. Production of high-quality animal feed is a concern to many operations, including dairies, beef producers, and horse ranches. Forages are classified as either perennial or annual... cool season or warm season. In general, annual forage grasses have higher digestibility than perennials. Cool season forage quality is typically higher than warm season forage. Legumes tend to provide higher quality feed than grasses.

Whatever the forage being produced, a frequently overlooked requirement for producing high yields of top quality feed is providing the essential nutrition building blocks for sustaining vigorous growth. Whether growing for hay, silage, or pasture, adequate and balanced plant nutrition must be present to achieve high yields. There are many benefits of a balanced soil fertility program. They include:

- **Increased yields**
- **Improved quality and animal performance**
- **Better stand longevity and winter-hardiness**
- **Greater water use efficiency and drought tolerance**
- **Enhanced resistance to insects and disease**
- **Higher nitrogen fixation by alfalfa and clover**
- **Better efficiency and returns to crop inputs**
- **Fewer weeds caused by sparse and bare stands**
- **Good soil cover minimizes water and wind erosion**
- **Greater overall profit potential**

Forages are large consumers of nutrients, especially since the entire plant top is harvested and removed from the field. As a result, some nutrients...particularly potassium and sulfur...are likely to become deficient more quickly than when growing grain crops, where only a portion of the plant is removed from the field.

Nutrient uptake and removal by forage crops.

Crop	N	P ₂ O ₅	K ₂ O
- - pounds nutrient per ton dry matter forage - -			
Alfalfa ¹	56	15	60
Bermudagrass	46	12	50
Bromegrass	36	13	59
Fescue	38	18	52
Orchardgrass	50	17	62
Timothy	38	14	62

¹Alfalfa is a legume, which can obtain most of the N needed from the atmosphere.

Proper forage fertilization to overcome nutrient deficiencies will pay big returns on the investment. Use soil testing to determine the nutrient requirement prior to establishing the crop and then use periodic tissue testing to monitor crop performance and the need for supplemental nutrition. Waiting until deficiency symptoms become obvious before fertilizing is a poor practice that results in large losses of yield, quality, and profit. If tissue testing is not practical, crop removal estimates can be used as a guide for replacing nutrients harvested from the field.

Remember that complete and balanced nutrition, including phosphorus and potassium, is a fundamental part of producing high quality forages that cannot be overlooked in the quest for high yields, top quality, and a good economic return.

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For more information, contact Dr. Robert L. Mikkelsen, West Director, PPI, 617 Oeste Drive, Davis, CA 95616. Phone: (530) 758-4237. E-mail: rmikkelsen@ppi-far.org.

Note: *Agri-Briefs* are available online at the PPI website: www.ppi-ppic.org/agri-briefs