

# MU Specialist Says Seeding Legumes In Pasture Cuts Nitrogen Bill

COLUMBIA, MO.

**H**igh-priced nitrogen has livestock producers worried about the cost of fertilizing their pastures, said a University of Missouri Extension forage specialist.

"There are cost-saving alternatives that improve grazing for livestock," said Rob Kallenbach, Columbia. "Overseeding legumes into grass pastures now can add nitrogen and improve forage quality."

Clovers, birdsfoot trefoil or lespedeza overseeded on grass offer free nitrogen from the air. "Legumes fix up to 200 pounds of nitrogen per acre, so the potential is significant," Kallenbach said. "Savings in fertilizer cost can pay for the seeding."

"There have always been good reasons for adding legumes. Now, with high nitrogen costs, this practice is even more attractive."

Nitrogen fertilizer that cost 40 to 50 cents a pound last year might cost 70 cents this year. Nitrogen fertilizer is made from natural gas, requiring high energy inputs.

Legumes fix nitrogen in root nodules. Up to 20 percent of this nitrogen is shared with the nearby grass.

Legumes not only cut nitrogen costs, they make high quality grazing for livestock. Legumes are palatable, nutritious and have higher protein content than grass.

"The goal should be to have about 30 percent of the forage in a pasture be from a legume," Kallenbach said.

"Late winter is the time to seed," the MU specialist said. "Seed broadcast over the pasture will be worked into the soil by freezing and thawing of the soil."

For best success in planting legumes, management is needed.

Under ideal conditions, soil fertility from lime and phosphorous would already be in place. Optimum phosphorous soil test levels should be 25 to 40 pounds per acre. Raising the soil test levels helps legumes to become established in a stand of grass.

On soils with low pH levels, spreading lime

which adds calcium also helps. Lime takes about six months to break down for best effect.

"A word of caution," Kallenbach said. "Legumes seeded on soils low in phosphorus or potassium and low in pH are not likely to establish well or be productive."

If a soil test report is available, adding legumes to fields with soils at or above soil-test recommendations is a way to maximize returns. On deficient soils, taking the time this year to add the nutrients should be considered. Legumes added later will have a better chance of success.

Ahead of seeding, the pasture should be grazed down hard to reduce competition from shading of the small seedlings. After seeding legumes, livestock should be taken off the pasture for a couple of weeks until the legumes sprout. Then, before the legumes grow tall enough to be nipped off, the grass can be grazed down again.

Grazing management helps the legumes compete.

Kallenbach advises not to put nitrogen on grass pastures in the spring if legumes are desired. The resulting rapid growth of grass will crowd out legume seedlings.

Seeding rates vary according to the legume. Recommended rates: red clover, 4 pounds per acre; white clover 1/2 to 1 pound; birdsfoot trefoil, 6 pounds, and lespedeza 10 pounds. On deep, fertile, well-drained soils alfalfa can be interseeded at 10 pounds per acre.

Until legume stands reach 30 percent of a pasture, overseeding should be done each spring.

Legumes can be planted with a no-till drill. Extra care should be taken to prevent planting too deep. "Optimum depth is a quarter inch," Kallenbach said. "It is better to plant too shallow than too deep."

With frost seeding, by broadcasting seed over the top of the pasture, the depth is about right for a good stand.

Low-cost legume seedings can help livestock producers stay competitive, Kallenbach said.  $\Delta$