



# Kansas State University

## Interseeding Legumes in to Cool Season Grass Pastures

Fertilizer prices have caused some cool season forage producers to rethink fertility programs hoping to reduce fertilizer input costs. For some, legumes are seen as a way to enhance pasture quality while cutting back on fertilizer needs. Maybe, but is it an option for you?

On the positive, various clovers, alfalfa, even peas have potential for us here in NEK.

Establishment challenges can be an obstacles, though. Start with a soil test. Legumes require higher levels of pH and soil fertility than grasses. This can be compounded by the fact that many grass stands are low in Phosphorous to begin with. Lime should be applied as needed at least six months prior to planting. You should also plan to reduce the existing grass stand via heavy grazing or in extreme cases, tillage/chemical control. Legumes tend to establish better in fescue than brome due to the abundance of open spaces in fescue pastures.

Which legume is preferred? Alfalfa can persist for three to four years - if you can get it established. If so, it's a high production/high animal performance option. Extend its life with rotational grazing and a grazing alfalfa variety.

Red clover is the most common and maybe easiest to establish. Soil fertility is key, but once established, you can get two to three years out of the stand. If moderately grazed, enough seed may be produced for reseeding. Sweetclover is seldom used here because its is less desirable than other legumes in grass-legume combinations. It tends to become coarse and unpalatable if allowed to get too mature. High coumarin levels affect palatability and can cause health problems with livestock. Ladino clover is a perennial white clover that persists longer than most legumes under heavy grazing conditions. Bloat can be a problem.

Birdsfoot trefoil can be an establishment challenge, but once established, natural reseeding can occur. Bloat is not the problem clovers/alfalfa might be. Lespedeza grows in Kansas as an annual and a perennial. Annual types reseed each year and are easily established and maintained in pastures, growing on acidic, eroded, and low fertility soils where production is low. Its persistence in brome may be a concern. Hairy vetch is a cool-season winter annual legume with vine-like growth, requiring a companion crop to attach to. Hairy vetch can contaminate wheat fields and when grazed in a pure stand, cattle can develop dermatitis. Once it blooms, you'll have it for life! Austrian winter peas is an annual legume often planted with a winter cereal. They grow best on well drained loam/sandy soils, and are intolerant of low pH soils.

Cowpeas is an annual warm-season, vine-like plant with large leaves that tolerate dry and low fertility soils. Cowpeas do not cause bloat and can be used as hay, creep grazing, or limit grazing when low quality forages are used.

Knowing all that, will a legume fit your management style? In addition to slightly higher P, K, and pH requirements, lower N rates are necessary so the grass doesn't crowd out the legume. It can be a balancing act of sorts. You'll have to change your grazing style a little, too, to make sure you don't graze out the legumes.

Seeding methods vary, but two things are necessary - good seed/soil contact and the correct inoculant for the legume to be seeded (without it, you won't get nodulation). Seed/soil contact can be obtained in various ways. Seeding with a no-till drill in to well grazed or hayed forage stands can be effective. Broadcast seeding will require higher seeding rates due to lower seed survival. Light tillage or chemical suppression can aid in getting the legumes established.

This chart shows some common legume options with their seeding rates and optimum dates. Avoid overgrazing during establishment. Consider pulling cattle off the pasture when they begin biting off legumes to give the legume a chance to get well established the first year.

<i>Legume</i>	<i>Fall Seeding</i>	<i>Spring Seeding</i>	<i>Planting Rate (Drilled - PLS/A)</i>
<b>Alfalfa</b>	August 10 - September 1	April 15 - May 15	5 - 7
<b>Red Clover</b>	not preferred	March 1 - 15	4 - 6
<b>Ladino Clover</b>	late summer/early fall	March 1 - 15	1 - 1 ½
<b>Lespedeza</b>	NA	February 15 - March 15	10 - 15

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