

# Adding Legumes to Predominantly Grass Pastures

Adding legumes to predominantly grass pastures improves forage quality, distribution, and animal performance. Legumes also “fix” nitrogen from the air which benefits all forages. Renovation can be done without losing production.

Effects of forage species and nitrogen fertilization on conception rate and daily gain of cows and calves on pastures

Forage Species	Lbs N/Ac	Lbs Daily Gain		Conception Rate
		Calves	Cows	
Orchardgrass	100	1.8	0.8	90%
Tall Fescue*	100	1.2	0.02	71%
Tall Fescue* + Red and Ladino Clovers	none	1.8	0.6	92%

\*Tall Fescue is endophyte infected  
 Source: Pasture Forage Information, Purdue University

## Steps to Successful Pasture Renovation

1. Begin a rotational grazing system for improved control of animals.
2. Kill any broadleaf weeds BEFORE adding legumes.
3. Apply lime/fertilizer per soil test recommendations – do not apply nitrogen.
4. Select the legume
  - a. match the legume to the grass
    - tall fescue – red and/or ladino clover, annual lespedeza
    - orchardgrass – red clover or alfalfa
  - b. soil type – alfalfa requires a fertile, well drained soil
  - c. establishment method – frost seeding for clovers but not alfalfa
5. Use adapted, certified, and inoculated seed.

Suggested legume seeding rates for renovating pastures (frost seeding)

Seed Mixtures	Legumes	Seeding Rates Lbs/Acre
1	white clover	1 - 2
2	red clover	6 - 10
4	white clover	1 - 2

Source: Agronomy Handbook, Publication 424-100, Virginia Tech

6. Establishment Methods

- A. Frost Seeding Clovers
    - 1. Overgraze sod in fall/winter.
    - 2. Broadcast seed during March.
    - 3. Flash graze grass when it over shadows clover seedlings.
  - B. No till Seeding Alfalfa
    - 1. Use herbicides to reduce (not kill) grass stand. ¼ to 2 quarts of glyphosate in Spring two weeks before seeding.\*\*
    - 2. No till seed in mid to late April.
    - 3. Flash graze\* grass when it over shadows alfalfa seedlings.
  - C. Minimum Tillage
    - 1. Disk or chisel 90% of existing sod in fall or winter (95% for alfalfa).
    - 2. Broadcast and firm seedbed for good seed to soil contact.
    - 3. Flash graze\* grass when it over shadows alfalfa seedlings.
7. Begin rotating through the field (graze to 3-4 inches in 4 to 7 days).
8. Maintain soil fertility.



\*Flash graze – high stocking density for a short time; reduces grass competition. Begin when grass over shadows clover seedlings. End when clovers are easily seen.

\*\* Joe Brummer Colorado State University

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