

## Pasture and Hay Management Quick Reference

General Info – Pasture recommendations are based on Cow Days/Acre (CD/A). One cow day = 30 lb of forage on a dry matter basis to feed 1000 lb cow w/ a calf less than 4 months old for one day. Hay recommendations based on tons of dry matter per acre.

### Profitability –

#1 Reduce Costs – 53% attributed to feed. Rotational grazing extend grazing season reducing feed costs. Rotational Grazing information in MU Guide EQ379: <http://extension.missouri.edu/p/EQ379>

### Varieties – Public variety testing of forage crops is limited

Pasture species: novel endophyte (N.E.) fescue, white/ladino clover + lespedeza, and warm season grasses  
Hay species: N.E. fescue, red clover, orchardgrass, alfalfa, smooth bromegrass, warm season grasses  
Legumes require specific inoculants that will need to be added if specific legume has not been on field.

### Planting Date – Refer to MU Guide 4652: <http://extension.missouri.edu/p/G4652>

Spring: (filling in thin pastures: cool season annual grasses/legumes) – March 5 – April 5

Late Spring: (warm season grasses) – April 15 – May 15

Fall: (cool season perennial grass or alfalfa) September; Replacing w/ N.E. fescue follow Spray-Smother-Spray

Winter Frost Seeding: (clover and lespedeza fit this timing best) February

Planting between these dates improves emergence and survivability.

### Planting Rate and Depth – Refer to MU Guide 4652

Seeding rates based on Pure Live Seed. Actual seeding rate will depend on germination percentage, purity, planting conditions, and methods. Planting Depth – ¼ to ½ inch, avoid planting deep

Planting Method – Drill is ideal for spring, late spring and fall grass or alfalfa. Broadcast is ideal for frost seeding legumes. Not recommended to drill both grass and legume together due to competition.

Soil pH – Often the limiting factor in pasture and hay fields. pH range: 5.6 (grass) to 6.5 (legumes).

Lime – maximum application rate is 3 tons/A at any one time. **Soil Test!**

Recommendation based on Effective Neutralizing Material (ENM) per ton of ag lime (consult lime dealer).

Refer to MU Guide 9215 or 9217 for proper soil sampling technique.

Pest Management – **Scout fields!** Weeds most common; Grubs and Larvae can be occasional pests.

Refer to Missouri IPM 1031 “Weed and Brush Control” for specific herbicide recommendations.

*Read and follow all label directions. University of MO does not endorse any one product.*

**Spray-Smother-Spray** to renovate fescue pastures: Glyphosate (April) followed by Warm Season Annual Grass (May) followed by Glyphosate (August) followed by Novel Endophyte Fescue (September)

## Fertility – Soil test for proper rates

Nitrogen – Recommendations: Grass Hay – 40 lbs N/Ton yield; Grass Pasture – 0.6 lbs N/Cow Day (CD)

Cool season grass (no legumes) –

-Hay: Apply 60% at time of greatest need (spring). Split applications between cuttings to improve second cutting. Apply remaining in August for fall root development and persistence.

-Pasture: Focus on legumes and grazing management to spread manure. Ideal: If N is needed apply to ¼ of farm in early spring (March); ¼ farm in late spring (May); ¾ farm in August based on need.

-Stockpiling fescue fields – 30 to 40 lbs N/A in August; do NOT graze until mid-November

Warm season grass –

Perennial: First application when grass is 4 inches tall (late spring). Additional app. depends on species

Annual: First application at establishment. Additional app. after cutting or grazing

Legumes – 20% to 30% of stand can reduce reliance on nitrogen applications.

Phosphorus (P) – Soil level goal: 30 lb P/A; removal rate: Hay - 9 lb P<sub>2</sub>O<sub>5</sub>/ton; Pasture – 0.05 lb P<sub>2</sub>O<sub>5</sub>/CD

Potassium (K) – Soil level goal: (5 x CEC) + 160; removal rate:

Hay – 34 (grass) to 38 (w/ legumes), 45 (alfalfa) lb K<sub>2</sub>O/ton;

Pasture – 0.17 (grass), 0.19 (legumes), 0.23 (alfalfa) lb K<sub>2</sub>O/CD

Harvest – Forage quality = high protein and low fiber. Leaves = high protein; Stems = high fiber.

Pasture Grazing heights – “leave half and take half”

Cool Season: start 8 to 6 inch & stop 4 to 3 inch tall

Warm Season:

Native Perennial: start 12 inch & stop 6 inch tall; Bermuda: start 6 inch & stop 3 inch

Annual Pearl millet or Sudan: start 20” & stop 8”; Crabgrass: start 8 to 6 inch & stop 4 to 3 inch

Pasture Forage Rotational Grazing Periods: Grazing – 3 to 5 days; Rest – 30 days average

Hay – varies: grass = late vegetative/boot; legume = % bloom (alfalfa 10%; clover 25%; lespedeza 30%)

-Baling moisture: small square = 22%; round = 18%; large square = 16%

-Hay testing: core sample (not grab & avoid end bales) = quality results

## Calculations –

Seeding Rate = Pure Live Seeding Rate divided by [(%Purity x %Germination)/100]

A.U. = (# Cow/calf pairs x lbs. per pair) / 1000

Pounds Dry Matter (D.M.)/Day = A.U. x 30 lbs D.M.

Paddock # = (Forage rest days/Forage grazing days) + 1

Paddock Acres = Total Grazing Acres/Paddock #

Total Pounds Forage/A = 250 lb D.M. per inch of forage (yard stick method)

Grazing Efficiency: Continuous – 25%; Rotational: 4 paddock – 35%; 8 paddock – 50%; 12 paddock – 65%

Forage Intake (% of Body Wt.): Dry Cow – 2%; Stocker – 3%; Lactating Cow – 4%

# Animals =  $\frac{\text{Total lbs Forage/A} \times \% \text{ Grazing Eff.} \times \text{Paddock Acres}}{\text{Ave. Animal Wt.} \times \text{Forage Intake \%} \times \text{Grazing Days}}$

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