

2019 Baleage and Silage Short Course: How to Fit Legumes into your Current Systems

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How to Fit Legumes into Your Current System

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Baleage and Silage Short Course
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Bermudagrass **Bahiagrass** **Tall Fescue**

What is your forage base?

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What is YOUR goal?

- Improve the quality of existing warm-season grasses?
- Produce forage for high quality baleage or extend the grazing season?



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What is the best legume for YOU?




cool or warm season?
annual or perennial?
seed cost?
time?
grazing or harvesting?
establishment cost?
labor and inputs?

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Every acre of your farm does not require a legume!



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Preferred soil characteristics of cool season annual legumes

Species	Soil		
	Min. pH ¹	Texture	Drainage ²
arrowleaf clover	6.0	sand, loam	good
ball clover	6.5	sand, loam, clay loam	fair
berseem clover	6.5	loam, clay	poor
crimson clover	6.0	sand, loam	good
medics, annual	7.0	sand, loam, clay	fair
Persian clover	6.0	loam, clay	poor
red clover ³	6.5	loam, clay	good
rose clover	6.0	sand, loam, clay	good
sub. clover	6.0	loam clay	fair
vetch, hairy	5.5	sand, loam, clay	good
winter pea	6.0	loam, clay loam	good

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¹ Adapted from Evers, 2005.
² Minimum soil pH value for acceptable yields.
³ Red clover often behaves as a cool season annual legume.

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Preferred management traits of cool season annual legumes

Species	Maturity	Cold Tolerance	Bloat Potential	Reseeding Potential
arrowleaf clover	late	good	low	high
ball clover	medium	good	high	high
berseem clover	medium	poor	low	low
crimson clover	early	good	medium	low
medics, annual	early	poor	high	high
Persian clover	medium	fair	high	medium
red clover	late	good	low	low
rose clover	medium	good	low	high
sub. clover	medium	fair	medium	low
vetch, hairy	medium	good	low	low
winter pea	medium	poor	low	low

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Planting steps can vary...



- Overseeding winter annuals into dormant warm-season grasses
- Interseeding winter perennials into cool-season grasses
- Interseeding alfalfa into bermudagrass
- Legumes in annual crop rotations
- Growing alfalfa alone

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Step 1: Soil Test

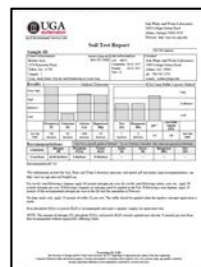


- Hayfields require annual soil testing!
- Take representative soil samples
- Depth will depend on forage and management intentions

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Step 2: Follow soil test recommendation



Recommendation	Rate (lb/acre)	Rate (lb/acre)	Rate (lb/acre)	Rate (lb/acre)	Rate (lb/acre)	Rate (lb/acre)	Rate (lb/acre)
Ammonia Nitrogen	0	0	0	0	0	0	0
Urea Nitrogen	0	0	0	0	0	0	0
Plant Available Nitrogen	0	0	0	0	0	0	0

Lime, P, and K are especially important for legumes

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Step 3: Select a recommended species and variety

Statewide Variety Testing:

<http://www.swvt.uga.edu/ssfTests.html>



This document is updated annually!

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Complementary Forages

Legume	Bermudagrass	Bahiagrass	Tall Fescue	Winter Annual Grasses
Crimson Clover	Yes	Yes	No	Yes
Ball Clover	Yes	Yes	No	Yes
Arrowleaf Clover	Yes	Yes	No	Yes
Red Clover	Maybe	Maybe	Yes	Maybe
White Clover	Maybe	Maybe	Yes	No
Alfalfa	Yes	No	Yes	No

Think about when your base forage is growing!

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Adapted from: Dr. Don Ball

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Step 4: Buy certified seed!

Look for the **blue tag!**



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Step 5: Prepare your seedbed

Use this option for
alfalfa
monocultures and
annual crop fields

"Well-prepared" seedbed

- Plow/disc/finish at least 2-4 wks prior to planting
- Incorporate lime, P, and K
- Incorporate PPI herbicide
- Allow time to settle or firm with cultipacker/roller
- Seedbed should be firm → boot tracks should be ~1/4 in. deep



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Step 5: Prepare your seedbed

Use this option
for seeding into
existing grass
stands

- Be cautious of residual herbicides
- Spring: apply lime and fertilizer
- August-September: graze/mow to ~3" height (may also need to spray with non-selective herbicide)
 - paraquat (Gramoxone) at 1 quart/ac
 - glyphosate (Roundup) at 9-12 oz. per acre depending on formulation
- September-November: plant

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Step 6: Get your seed drill ready **before** its time to plant



- Prep seed cups and drop tubes
- Clean out hoppers
- Calibrate (don't trust the settings on your seed drill)
- Set up for *proper* drops
- Set your press wheels

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Step 7: Inoculate your seed

Legume plants have a relationship with specific rhizobia

Groups and Types	Species
I. Alfalfa Group	
Type A	Alfalfa
Type N	Annual Medics
II. Clover Group	
Type B	Ball, red, and white
Type O	Arrowleaf
Type R	Berseem, crimson, & Persian
Type WR	Rose and subterranean
III. Pea & Vetch Group	
Type C	Austrian winter pea and vetches



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Step 8: Plant at the correct depth

Seeding too deep is major
cause of establishment
failures!

- Most legumes should be planted no deeper than 1/4"
- Coulters should cut about twice depth of seed's size



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Words of Wisdom
Good, cheap, or fast...pick two!



Broadcasting *may* be faster but will increase seeding costs and will likely result in lower yields!

Seed to soil contact is critical for germination!

Additional considerations

- Residual herbicides
- Insect management
- Weed management

Questions?



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