









Forages Legumes for the SE USA: Facts & Myths

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Outline

- Some common facts and myths regarding forage legumes
- Specific examples with cool-season legumes
- Specific examples with warm-season legumes
- Some absolute "must do" practices to succeed in growing forage legumes
- Summary and conclusions

Some Facts Unique to the Marginal Climate of Florida and the SE USA

- Extremes in temperature, rainfall, and relative humidity lead to extreme abiotic and biotic stress – examples:
 - Temperate winters (±20° F) with as many as 30 frost events in a season
 - Tropical summers with most night temps above 70° F
 - ±50 in. annual rainfall, but major peak in summer
 - Frequently have 90° F / 90% R.H. afternoons that are ideal culture labs for fungal diseases
 - Flooded soils ideal for root rot fungal diseases
 - Sandy soils ideal for plant parasitic nematodes

Cool-season Forage Legume Facts

- Cool season forage legumes are high in nutritive value.
 - Digestibility 60 to 80%
 - Crude protein 12 to 20%
- Except for alfalfa, cool season legumes are annuals or short-lived perennials.
 - Red clover
 - -White clover
 - -Crimson clover

Cool-season Forage Legume Facts

- Cool-season forage legumes are more selective about soil conditions.
 - Crimson clover Well drained light textured soils
 - Red clover Medium soil moisture and texture
 - White clover Will perform well on wetter and medium textured soils
 - All will need pH of 6.0 or higher to do well and specific rhizobium inoculation.

Crimson



Facts

- Alfalfa, the "Queen" of forage legumes can be successful in the mid and lower South
 - Will require more attention to soil conditions (does not like "wet feet".
 - Pay close attention to soil P and K levels, micronutrients, and pH.
 - Use only cultivars bred and selected to perform well in the lower SE USA.
- Drs. Tucker & Rios will provide more details.

Cool-season Forage Legume Myths

- These cool season legumes have been around for ages and they just don't work in the lower SE USA.
 - Yes, but . . .
 - -There are new cultivars.
 - "Cheap" N fertilizer was easier.
 - Ecosystem services benefits from legume mixtures.
 - -We are "smarter" today.
- See: EDIS SS-AGR-173

Fact: Red clover is very productive in some areas of the USA. Photo – Idaho, 2018

Cherokee Red Clover, Alachua Co., FL, June 2006

Myth or Fact: Red clover is adapted to the SE USA.

Cattle on Red Clover with Oats, Walker Farm, DeFuniak Springs, FL

Reasons Some May Think This is a Myth

- We planted red clover and got a poor stand.
 - Lack of rainfall at planting (Plant the day before a 1" rainfall generated by a cold front that drops temp 20°)
 - Used non adapted cultivars Recommended: Southern Belle, Barduro, Red Ace, FL24D
 - Check those soil conditions
- It came up and then didn't grow
 - Planted more dormant cultivar/ poor rainfall in winter
 - Light competition (weeds, companion grasses)
 - Pests (RKN proper cultivars)
 - Poor inoculation

Spring Dormancy Responses of Red Clovers



Variation in Dormancy Response of Red Clover Cultivars at Gainesville, FL (15 April)



Response of FL24D and Southern Belle to Varying Rates of 2,4-D

a) Control Treatment (0x=0 kg ha⁻¹); b) Treatment 2, 1/2x rate=0.53 kg ha⁻¹;
c) Treatment 3, 1x rate =1.06 kg ha⁻¹; d) Treatment 4, 2x rate =2.12 kg ha⁻¹



Florida Red Clover Cultivar Releases

- New red clovers with variable dormancy ('Cherokee', 'Southern Belle', 'Barduro', FL24D)
 - Non-dormancy moved red clover into the mid-south and Coastal Plains.
 - RKN resistance to improved productivity on light textured nematode infested soils.
 - 2,4-D tolerance to allow easy cool-season weed control in newly established stands. Also the most non-dormant cultivar available today.
 - Potential tetraploid population if we can produce seed Dr. Rios' talk is next!

Yes, I've probably talked too much about Red Clover, but what can I say – even babies like red clover

(Photo of Isabela courtesy of Dr. Rios)



Myth or Fact: White clover is best adapted to temperate areas of the USA – like this field in the Willamette Valley of Oregon

Fact: White Clover Flagler County, FL



Reasons some may think this is a myth

- We planted white clover and got a poor stand.
 - Lack of rainfall at planting
 - Used non adapted cultivars Recommended: Ocoee,
 Osceola, Durana [Late Ocoee, Multileaf (Dr. Rios)]
 - Check those soil conditions
- It came up and then didn't grow
 - Poor rainfall in December & January
 - Light competition (weeds, companion grasses)
 - Pests (RKN proper cultivars)
 - Poor inoculation



Healthy roots and nitrogen fixing nodules on Ocoee

Crimson Clover in Jackson County Florida

Fact or myth: Crimson clover has out-lived its usefulness- 'Dixie' was released in 1945

Myth, but here are some reasons why you may be having problems with crimson

- "Dixie" is usually the only cultivar available
- Crimson should naturally reseed, but some years I get a stand and some years I don't.
 - Did you overgraze last year?
 - What has the fall moisture been like this year?
 Did you control competition for light this fall?
- Maybe it's time to add some more seed to the system and try to find seed of a new cultivar.

Early Maturity Crimson, Citra, FL March 2019

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Possible new cultivar Dr. Rios

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Warm-season Legume Facts

- Warm-season legumes are also high in nutritive value.
 - Digestibility 55 to 75%
 - Crude protein 12 to 18%
- Only a few species are well adapted and available.
 - Aeschynomene
 - Alyce clover
 - Rhizoma peanut

Aeschynomene americana

Myths & Facts About Aeschynomene

- It doesn't germinate/reseed well.
 - Dehulled seed
 - Spring rainfall
 - Light competition
 - Low seed from overgrazing
- It gets large and stemmy and cattle won't graze it
 - Manage growth early
 - Expect browsing (deer vetch)
- See: EDIS SS-AGR-61

Alyceclover, North FL 2015

Myths & Facts About Alyceclover

- It doesn't germinate/reseed well.
 - Scarified seed
 - Spring rainfall
 - Light competition
 - Previously made hay
- It has too many pest problems for me
 - Know your previous crop
 - Value for hay
 - Wildlife food plots
- See: EDIS SS-AGR-47

Ecoturf Rhizoma Peanut, Providence, FL



Myths & Facts About Rhizoma Peanut

- It's too costly to establish for use in grazed pastures and takes too long to establish
 - Yes, but ...
 - Plant at different times.
 - Establish in strips in pastures and allow to spread
- One cannot make high quality hay in Florida
 - Juggle cutting times to avoid rains.
 - Strong demand for RPP hay.

• See: EDIS SS-AGR-349, SS-AGR-421

Currently Available Rhizoma Peanut Cultivars

- Florigraze released 1981
- Arbrook released 1990
- UF Tito released 2010
- UF Peace released 2010
- Ecoturf released 2010
- Arblick released 2010
- More in the Pipeline

Other Possible Warm-season Legumes Sunn Hemp (Crotalaria juncea) -Only seed are toxic -Generally does not flower in FL –Can get stemmy Pintoi peanut

- -Another species of Arachis
- -Spreads by stolons not rhizomes

More tolerant of wet soils

Summary

- Forage legumes should be a valuable part of any forage-livestock system, and that's not a myth.
- Yes, they may take more management than granddads run down bahia pasture.
- Planting (depth, firmness, and moisture are critical).
- But, the nutritive value they add is worth it.
- Use of the most currently available cultivars is critical for success – especially in Florida.
- EDIS publications are an excellent resource.

Forage Legumes Are **Important!** 8 **That's Not A Fairy Tale**



The Red Clover Fairy

