



Tall Fescue Workshop

Management Recommendations to Minimize or Eliminate Fescue Toxicosis

Management Recommendations to Minimize or Eliminate Fescue Toxicosis



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www.georgiaforages.com


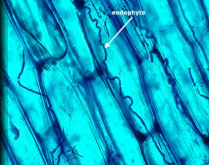
Management Strategies

- Eliminate it: The "Silver Bullet"
 - Replacement of E+ with Novel Endophyte (NE) tall fescue
- Minimize: Improving E+ TF




NE Tall Fescue

- Novel Endophyte
 - Endophyte from different TF population
- UGA and AgResearch (NZ) researchers developed and tested Jesup MaxQ.
- NE TF gives persistence benefit w/o toxicosis problems.

Novel Endophyte Tall Fescue

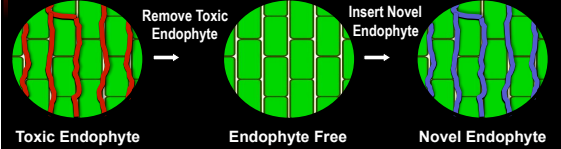
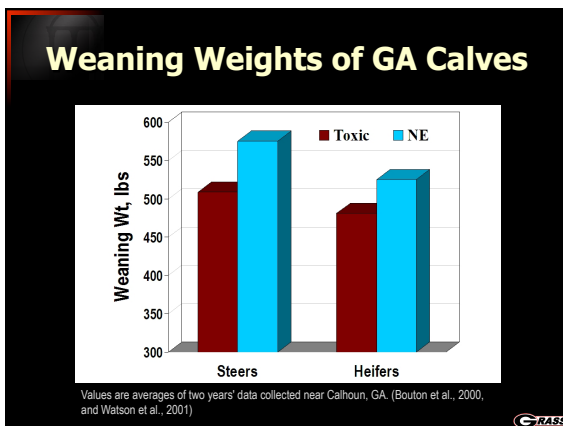



Photo credit: B.N. Stearns



Cow-calf performance on toxic or novel endophyte (NE) tall fescue stands. †

Cow Performance	Toxic	NE
Wt. at end of breeding, lbs.	1110	1236
Wt. at end of weaning, lbs.	1005	1122
BCS at end of breeding	5.4	5.7
Pregnancy Rate, %	44.7	85.1
Calf Performance		
Actual Weaning Wt., lbs.	461	529
Adj. (205 d) Weaning Wt., lbs.	436	504
ADG (birth to wean), lbs.	1.7	2.1
Replacement Heifers		
Actual Weaning Wt., lbs.	459	498
Calving Rate, %	64.1	90.6

† Adapted from Univ. of Arkansas Exp. Stn. Reports by Coffey et al. (2007 and 2008).




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"HOT" Fescue Management

- **Removal**
 - Removing tall fescue can be a difficult task
 - Recommended Removal steps
 - Do not let existing fescue go to seedhead
 - Mow-Spray-Spray

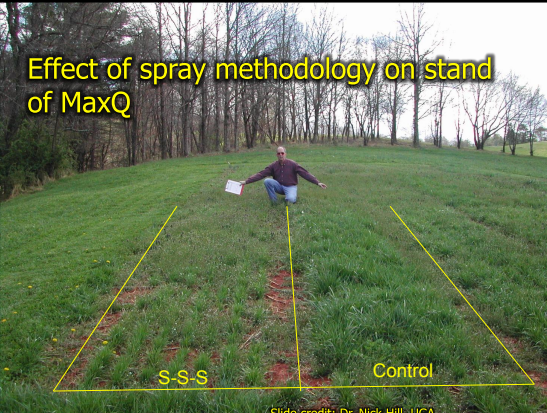


Replacing Tall Fescue

One E+ tall fescue renovation strategy:
"Spray-Smother-Spray" (S-S-S)




Effect of spray methodology on stand of MaxQ



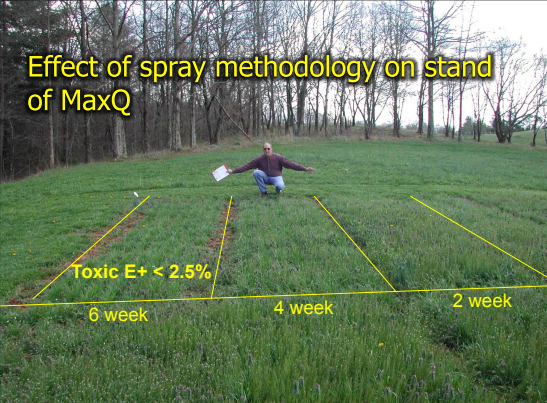
Slide credit: Dr. Nick Hill, UGA

Replacing Tall Fescue

Alternative E+ tall fescue renovation strategy:
"Mow-Spray-Spray" (M-S-S)



Effect of spray methodology on stand of MaxQ




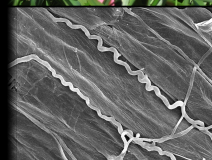
Slide credit: Dr. Nick Hill, UGA

NE Tall Fescue

The best option, but...

- Expensive
- Requires renovation of entire pasture or hayfield
- Down time in pastures
- Risky (weather)

Other curative options would be desirable.

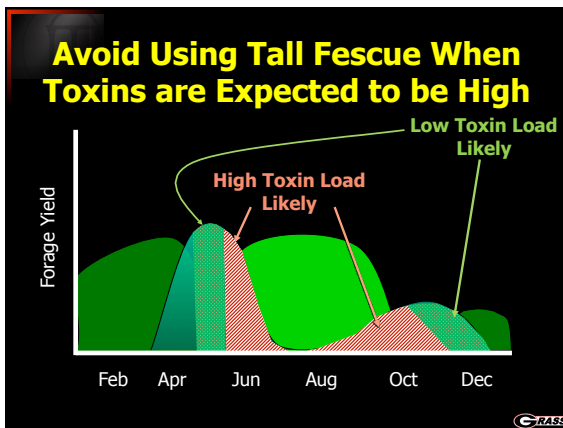
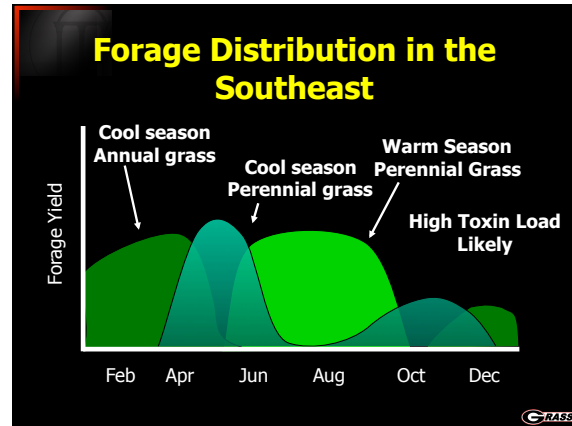



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- Minimize: Improving E+ TF
 - Rotate off of tall fescue

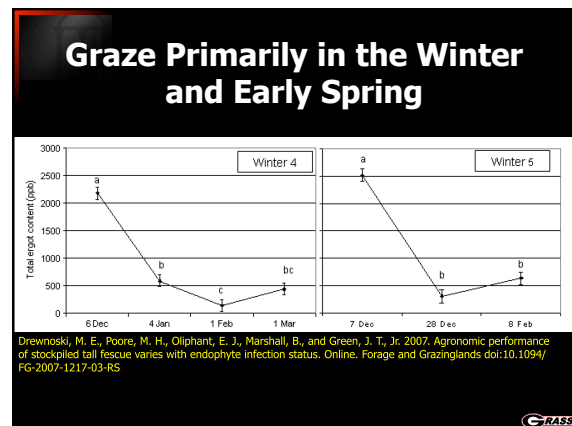
Mare Mgmt. BMPs

- Remove from TF pasture or hay 60-90 days before anticipated foaling or breeding
- Very low levels of fescue (%?, Probably less than 20%) can cause severe problems
- Keep accurate records of breeding and anticipated foaling dates



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 - Integrating legumes

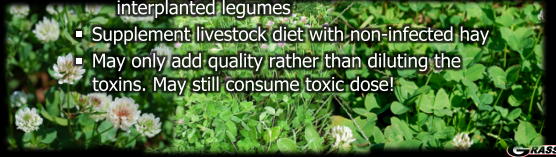



Integrating Legumes

Not really

"Dilution is the Solution"

- Plant legumes or complimentary grasses
 - "Dilutes" consumption of hot fescue, legumes add Nitrogen to the soil
 - White Clover and Red Clover most common interplanted legumes
- Supplement livestock diet with non-infected hay
- May only add quality rather than diluting the toxins. May still consume toxic dose!



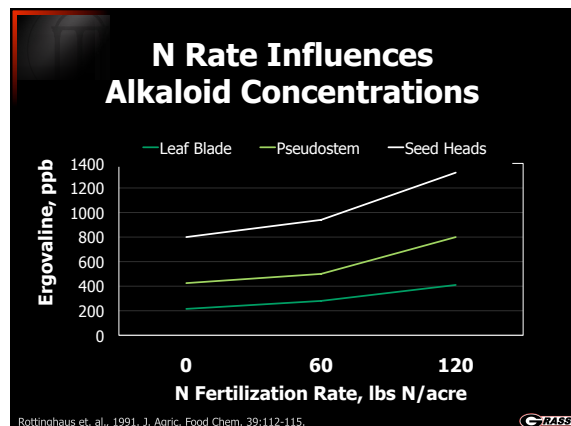
Effect of Tall Fescue, Endophyte, and White Clover on Stocker Production in the Spring

	ADG (lbs/hd/d)	Gain (lb/acre)
E+	1.10	126

Jesup Tall Fescue and Durana White Clover. 3-yr trial. Eatonton, GA. Hill, Andrae, and Bouton (unpublished data)

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 - Reduce N fertilization

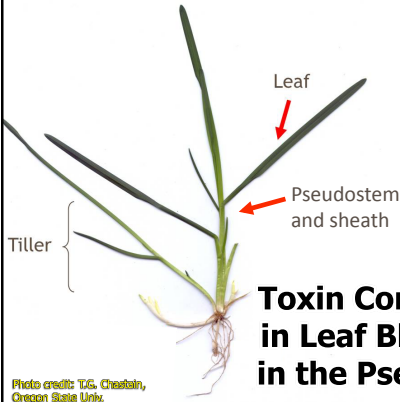



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 - Reduce N fertilization
 - Grazing or clipping seedheads





Toxin Conc. Lower in Leaf Blade than in the Pseudostem

Photo credit: T.G. Cheatham, Oregon State Univ.

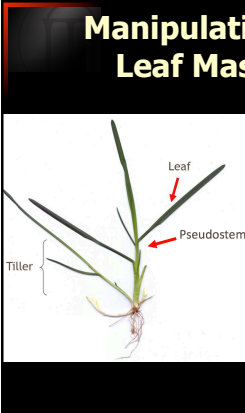
Toxin Conc. is Highest in the Seed Head

- 3 – 10 times greater conc. of ergot alkaloids in seed heads than in leaf
- May consume up to 80% of seed heads!



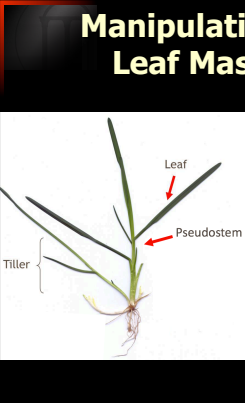
Manipulating the Ratio of Leaf Mass:Stem Mass

- Maximizing leaf blade
 - Clip or graze seedheads early, then
 - Frequent close (<2-5") grazing
- Mowing may not increase leaf blade:pseudostem ratio
 - Animal is more selective
- Maximize leaf blade intake
 - Rotational grazing with short duration (<2 d) and short rest periods (<14 d).



Manipulating the Ratio of Leaf Mass:Stem Mass

- What about chemically reducing seedheads?



Management Strategies

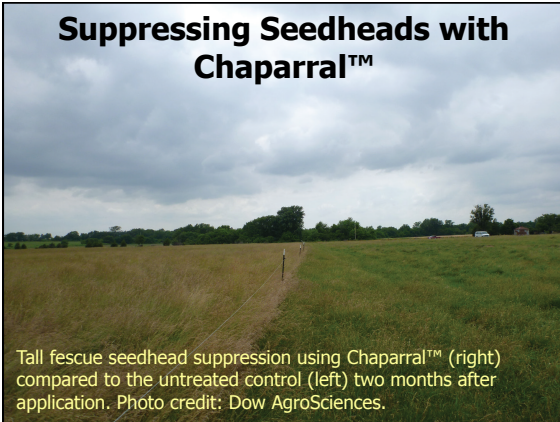
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 - Spraying to suppress seedheads



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Suppressing Seedheads with Chaparral™



Tall fescue seedhead suppression using Chaparral™ (right) compared to the untreated control (left) two months after application. Photo credit: Dow AgroSciences.

Suppressing Seedheads with Chaparral™

- Choose site where clover loss is acceptable
- Ensure that the tall fescue stand is strong
- Fertilized according to Extension recs
- Treat no more than 50% of acreage/year
- Avoid treatment of stressed tall fescue
- ?s Remain about stockpiling same yr as treated

Suppressing Seedheads with Chaparral™

- Apply Chaparral™ at a rate of 2 oz./a in spring
 - Between 3 wks prior to reproductive tiller development and just before the seedhead emerges (boot stage).

Suppressing Seedheads with Chaparral™

- The fescue will be stunted for a few weeks
 - Adjust stocking density to ensure adequate pasture

Suppressing Seedheads with Chaparral™

- For best results, use rotational grazing to minimize overgrazing and maximize stocking rates.

Management Strategies

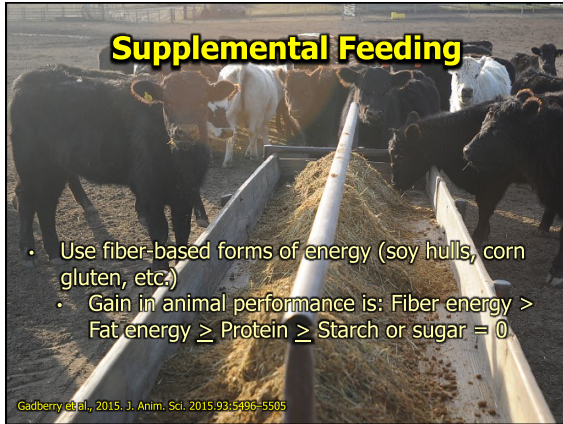
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 - Supplemental feeding with fiber-based energy



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Supplemental Feeding



- Use fiber-based forms of energy (soy hulls, corn gluten, etc.)
- Gain in animal performance is: Fiber energy > Fat energy ≥ Protein ≥ Starch or sugar = 0

Gadberry et al., 2015. J. Anim. Sci. 2015.93:5496-5505

Supplemental Feeding



Gadberry et al., 2015. J. Anim. Sci. 2015.93:5496-5505



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 - Pharmaceuticals

Gadberry et al., 2015. J. Anim. Sci. 2015.93:5496-5505

Pharmaceuticals

- Drugs that counteract alkaloid toxicity
 - Metoclopramide and domperidone
 - Essentially like E- or NE
 - Availability and cost (???)
- Deworming (Anthelmintics)*
- Implants*
- Monensin* and antibiotics**


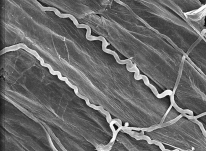
* Standard recommended practice on all forage systems.
** Under direction of veterinarian.

Gadberry et al., 2015. J. Anim. Sci. 2015.93:5496-5505

Photo credit: USDA-ARS

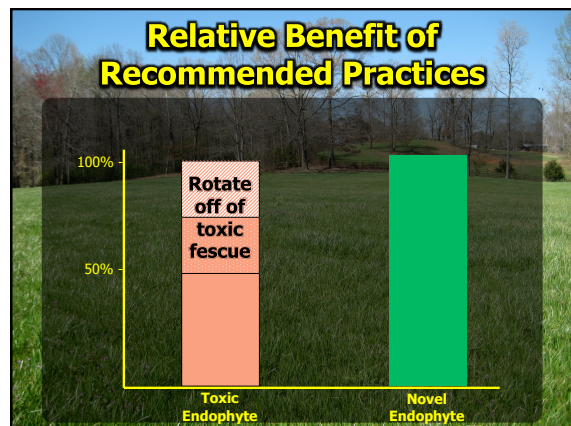
GRASS

No Reliable Effect

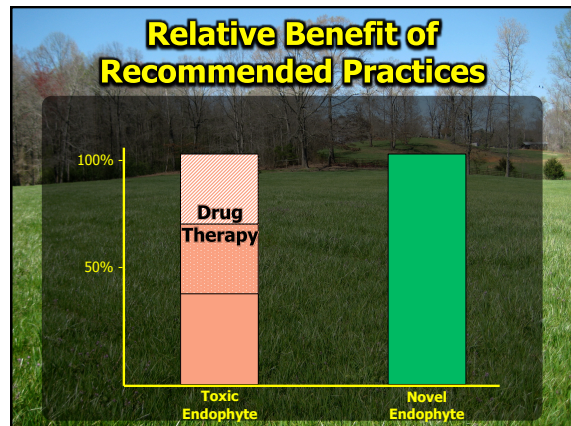
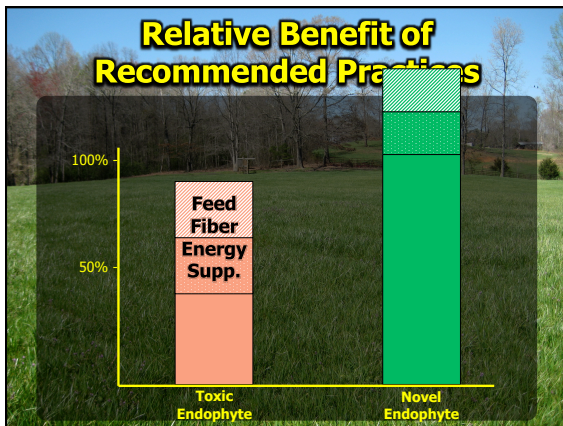
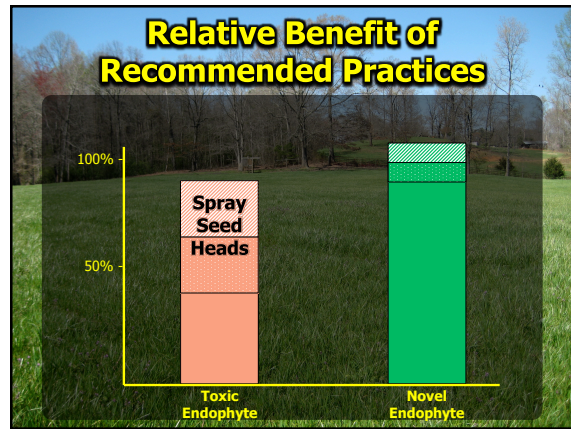
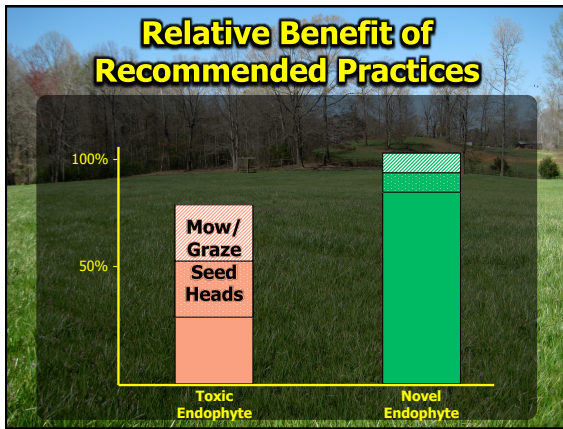
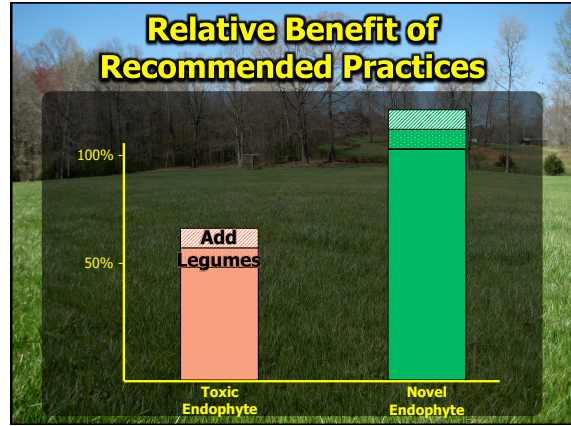
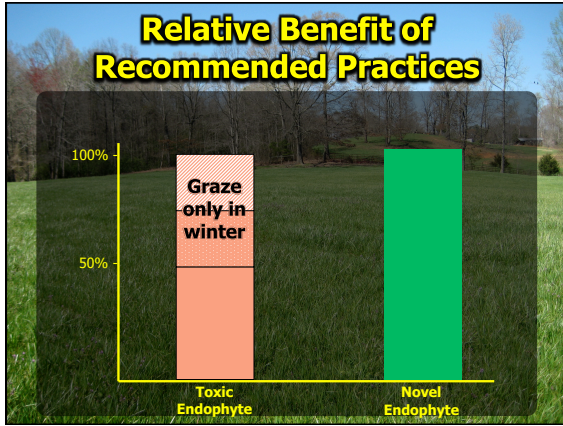
- "Functional foods" including
 - Clay binders, zeolite
 - Glucomannan
 - Seaweed extract (Tasco)
 - Aspergillus oryzae
 - Saccharomyces spp.
 - Blessed thistle
- Endo-Fighter mineral (ADM)

Gadberry et al., 2015. J. Anim. Sci. 2015.93:5496-5505



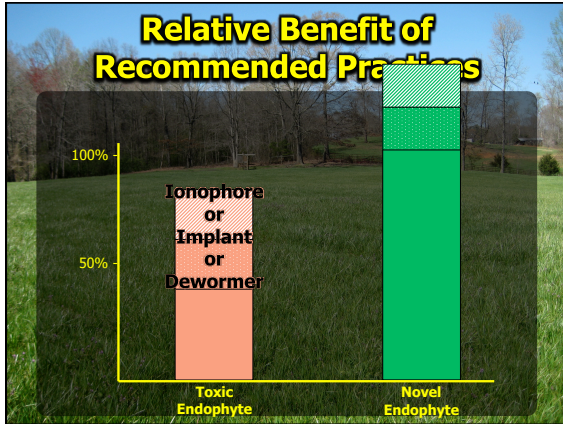
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But Does it **PAY**?

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 - Spraying to suppress seed heads
 - Supplemental feeding with fiber-based energy
 - Pharmaceuticals

Time Until Payback:
2.2 - 2.6 years
Beck et al., 2008. JAS 86:2043-55
Davis, J. Personal Comm.

Time Until Payback:
< 1-2 years

Current Recommended Varieties

College of Agricultural & Environmental Sciences
 UNIVERSITY OF GEORGIA

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Georgia Forages: Tall Fescue

Varieties: MaxQ or Texoma MaxQ II (both are novel endophyte varieties) for livestock pasture or hay.
 Kentucky-31 can be planted for conservation and other non-livestock uses.

Establishment: Seed drilled at 15 to 20 lb/A or broadcast at 20 to 25 lb/A in September or October.

Varieties: MaxQ or Texoma MaxQ II (both are novel endophyte varieties) for livestock pasture or hay.
 Kentucky-31 can be planted for conservation and other non-livestock uses.

