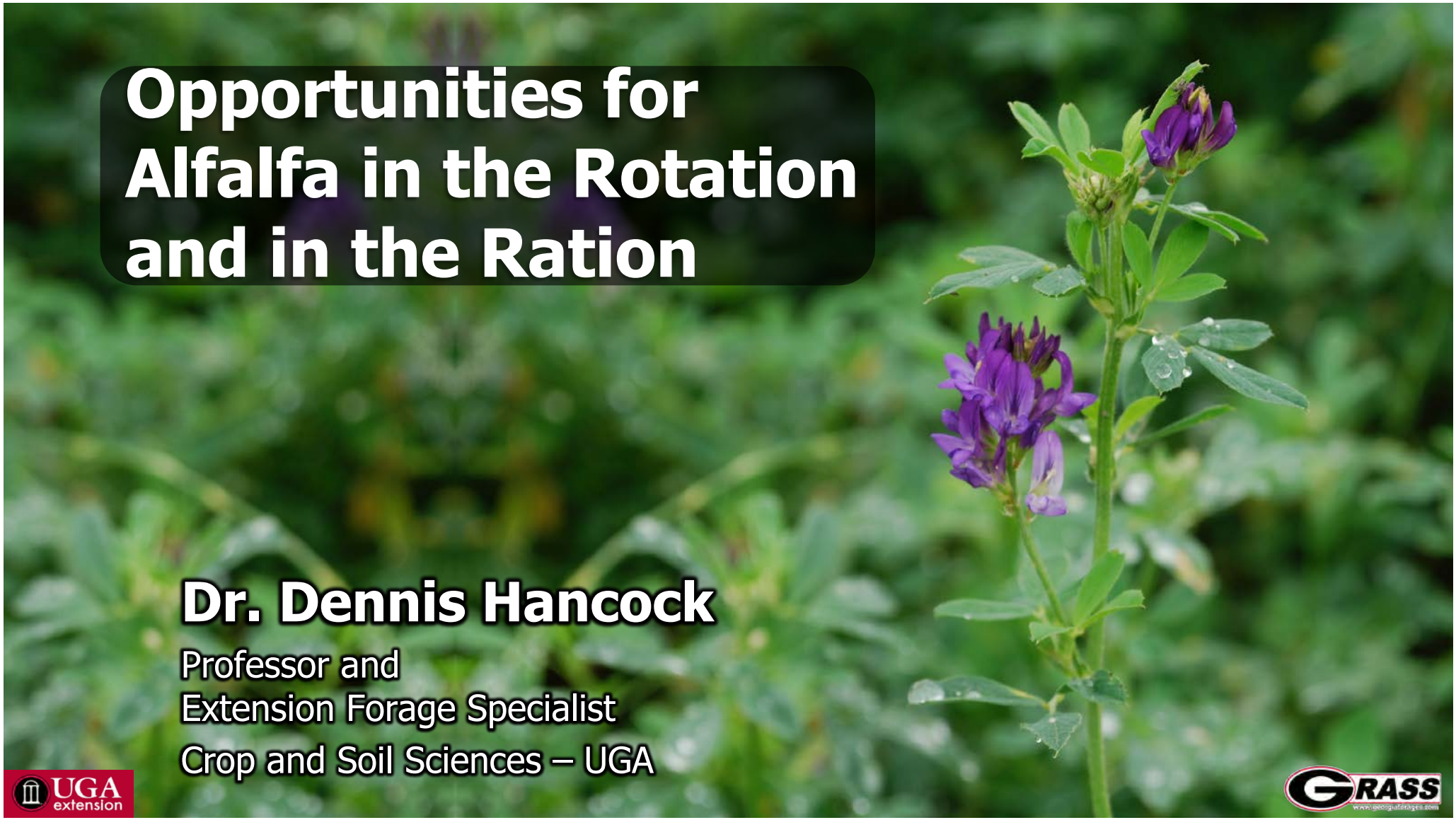
Opportunities for Alfalfa in the Rotation and in the Ration
Dr. Dennis Hancock
Professor and
Extension Forage Specialist
Crop and Soil Sciences – UGA
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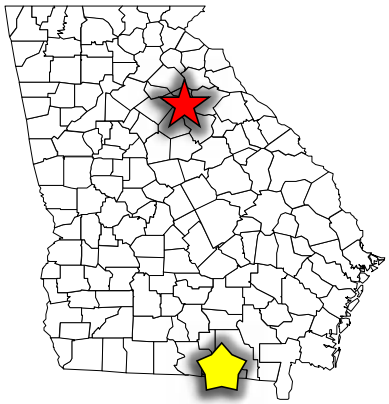
GRASS

ALFALFA

WILL GROW IN THE SOUTH!

Alfalfa-Bermudagrass Hayfield, Echols Co.



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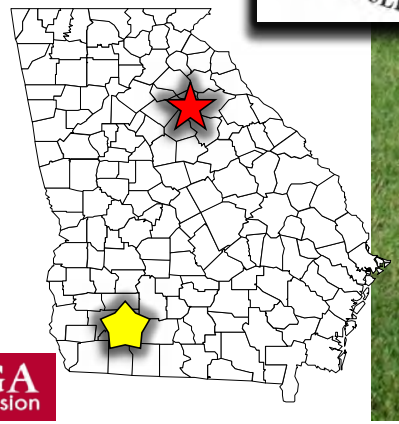
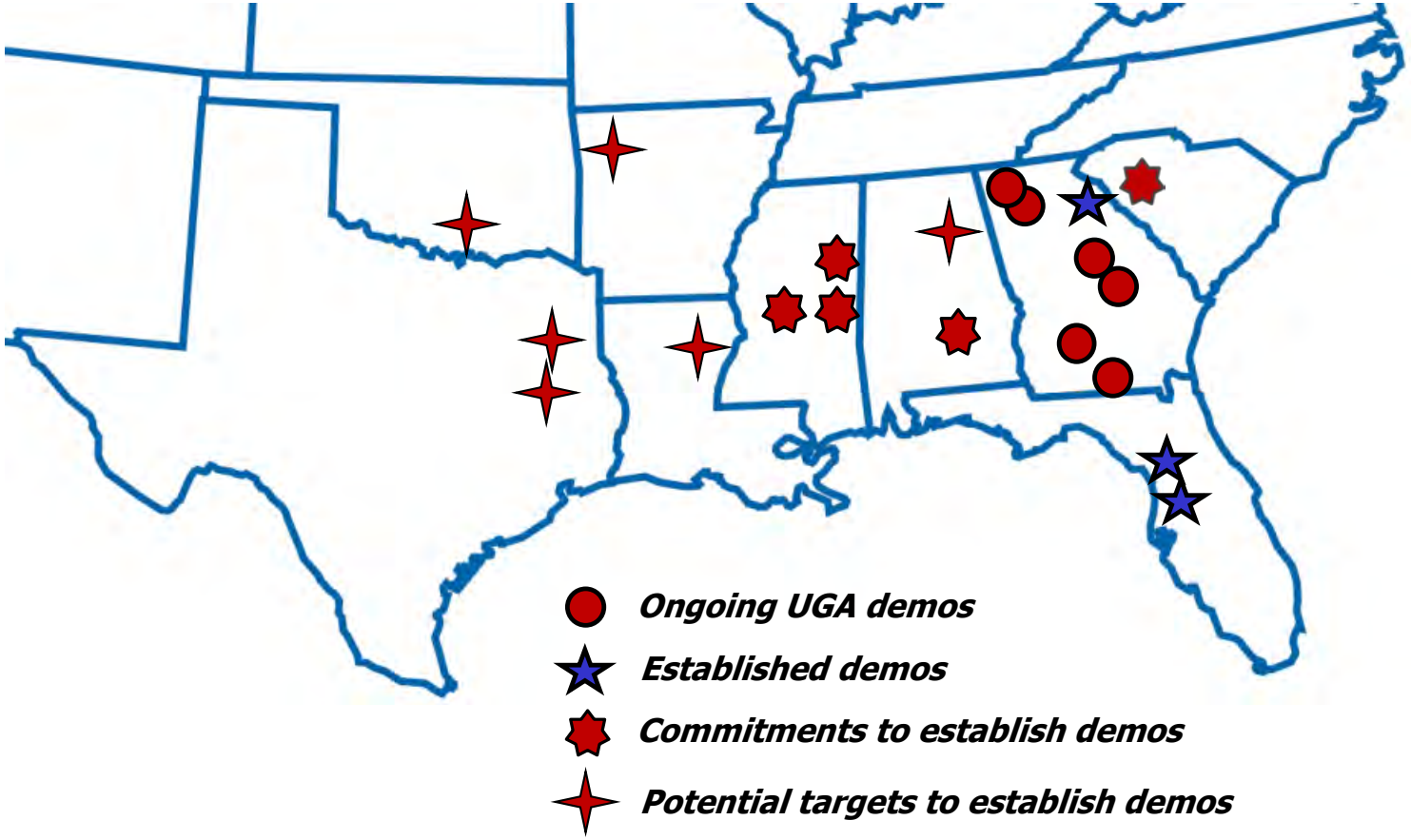
Alfalfa-Bermudagrass Hayfield, Colquitt County



Southeast US Demo Sites
Anchoring to the Existing GA Program



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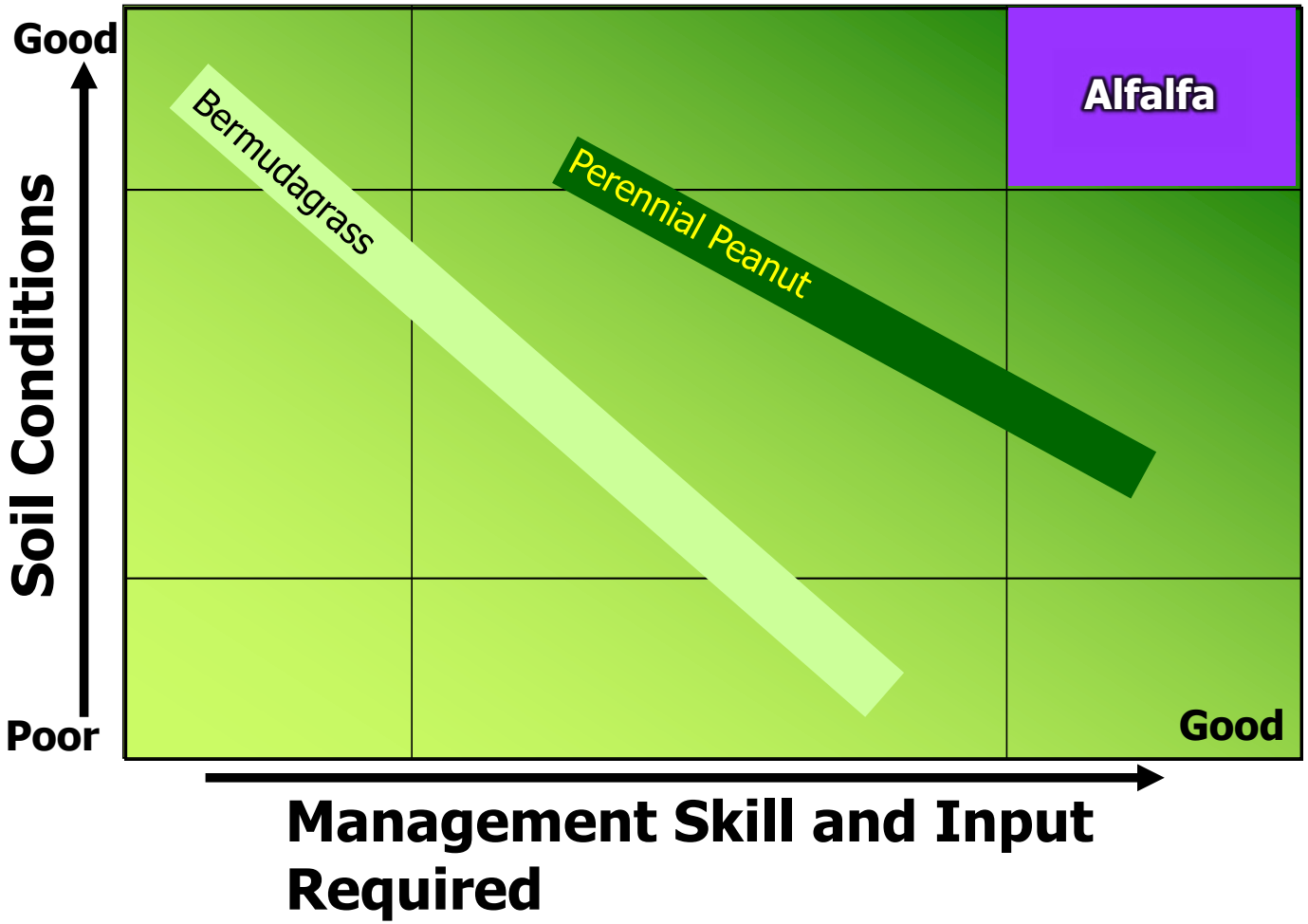
Species, Soil, and Management



Why Interseed Alfalfa into Bermudagrass?

1. Grow your own nitrogen
2. Increase the quality of your forage (+ 30 or more RFQ points)
3. Makes excellent supplemental feed and/or cash hay crop
4. Growing with bermudagrass allows alfalfa to dry faster and be harvested clean
5. If all else fails, you still have bermudagrass.

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Adding alfalfa to bermudagrass increases RFQ by 25-40 points, CP to 14-18%+, and TDN to 60-64%+

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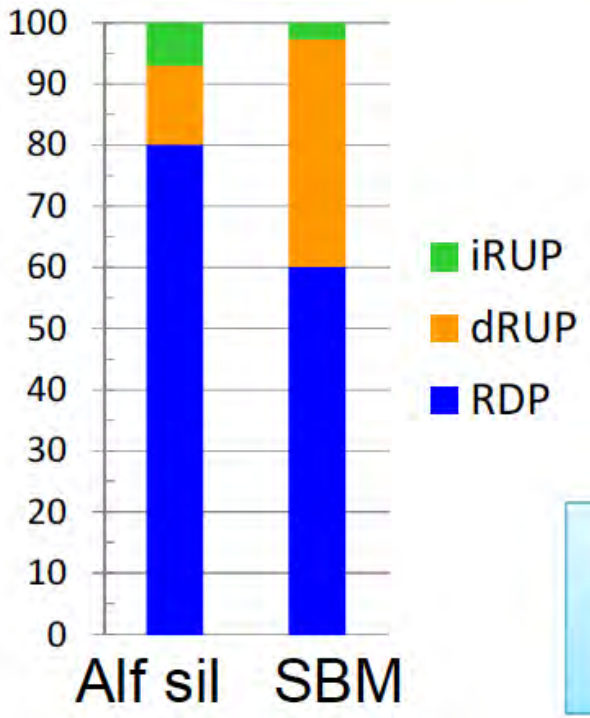
Differences in Forage Quality

Forage	CP

Corn silage	8
Alfalfa	20
Annual ryegrass	20
Bermudagrass, Coastal	12
Bermudagrass, Tifton 85	12
Rye	20
Sorghum-Sudan	10
SxS BMR	10
Tall fescue	17

All Protein is not created equal

CP: SBM ≠ DDG ≠ Alfalfa ≠ Canola



CP ➡ MP Efficiency

Alfalfa: 0.55
Distillers: 0.65
SBM: 0.70

Do Not Use CP to compare value across feeds

Slide credit:
Dr. Bill Weiss, Ohio St. Univ.

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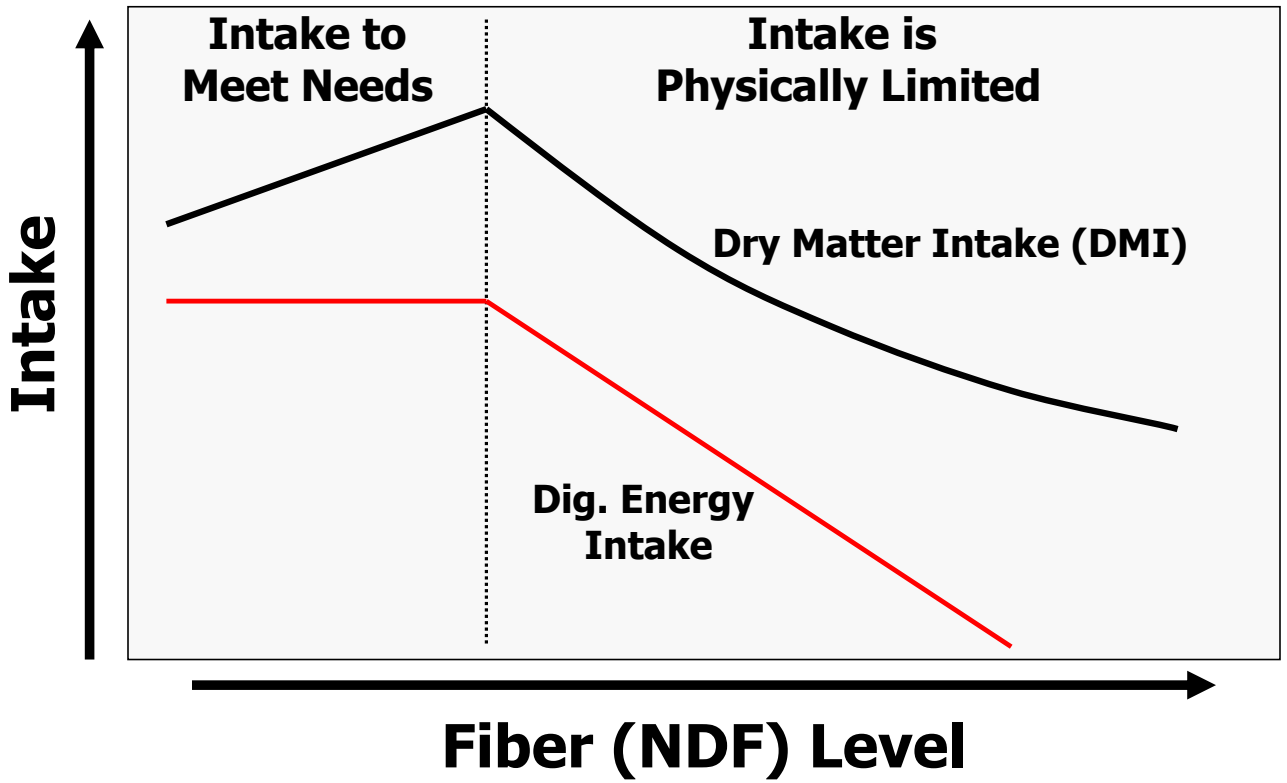
The Relationship between Fiber (NDF) and Dry Matter Intake (DMI)



Differences in Forage Quality

Forage	CP	NDF	NDFD	NFC
	----------(%)----------			
Corn silage	8	42		42.5
Alfalfa	20	40		
Annual ryegrass	20	52		12.5
Bermudagrass, Coastal	12	67		<10
Bermudagrass, Tifton 85	12	69		<10
Rye	20	57		12.5
Sorghum-Sudan	10	67		12.0
SxS BMR	10	67		14.0
Tall fescue	17	60		14.5

Goal: 35-42% NDF

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Alfalfa Hay (AH) as a Substitute for Corn Silage (CS) in Holstein Dairy Cows (*~50 DIM*)[1]

	Control	Alfalfa Hay[2]	
Item	**45CS/0AH**	**30CS/15AH**	**15CS/30AH**

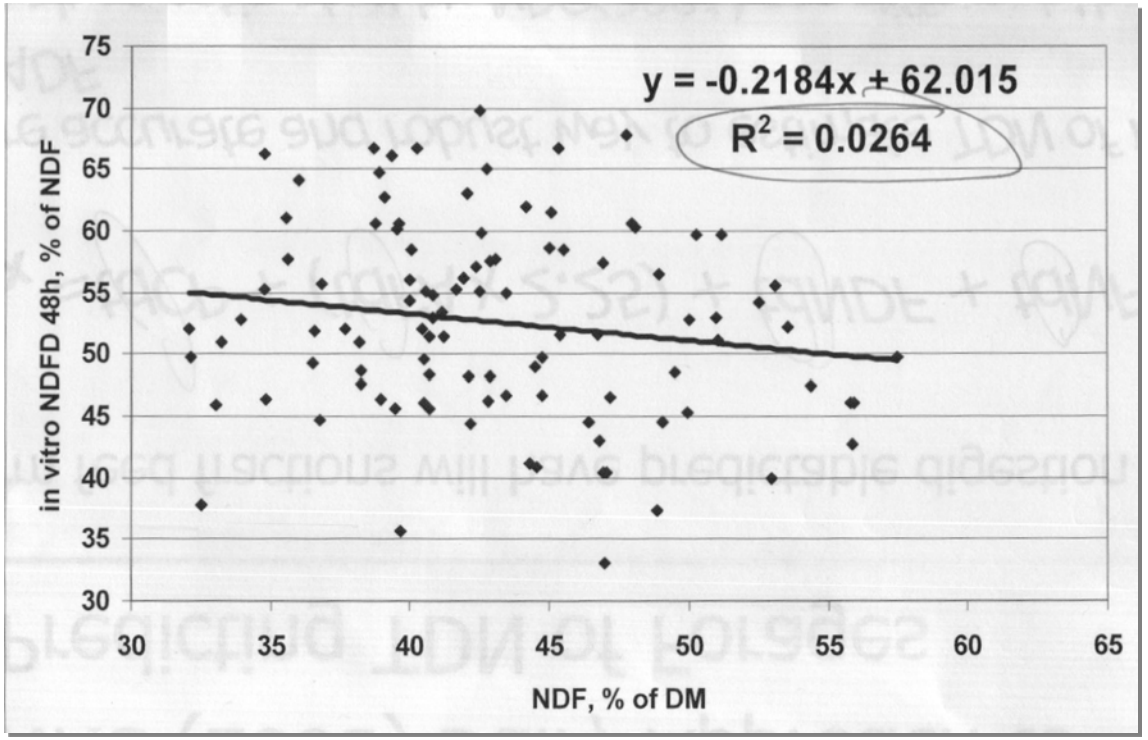
[1] Adapted from West et al., 1997. J. Dairy Sci. 80:1656–1665.
[2] The 15% and 30% AH diets contained 14% and 28% more ground corn and 70 and 84% less soybean meal, respectively than the CS diet.
[3] Calculated from reported values.

What is the difference?

Quantifying the Difference

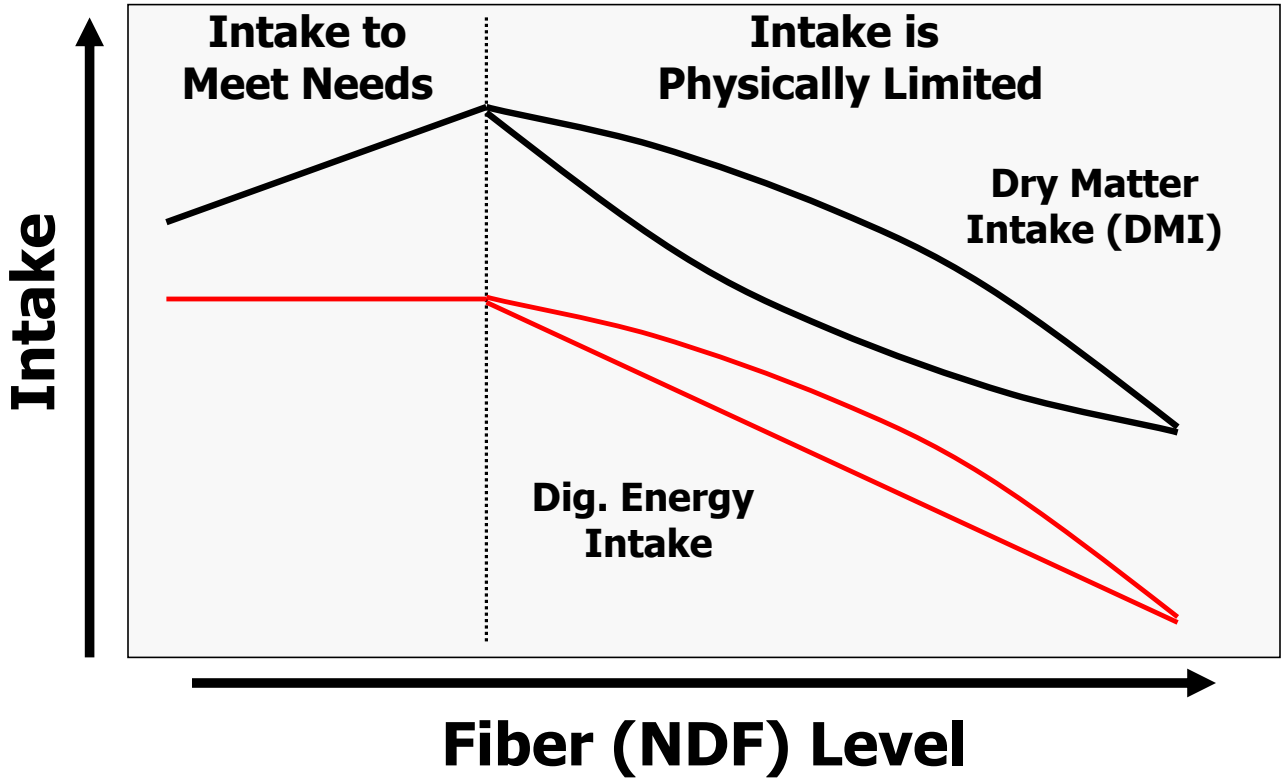
Item	Units	Alfalfa	Bermuda
Weight	lbs	25	25
Loose Pile Height	in.	22.5	25.5
Loose Pile Diam.	in.	44.3	60
Approx. Volume	$in.^3$	12,000	24,000

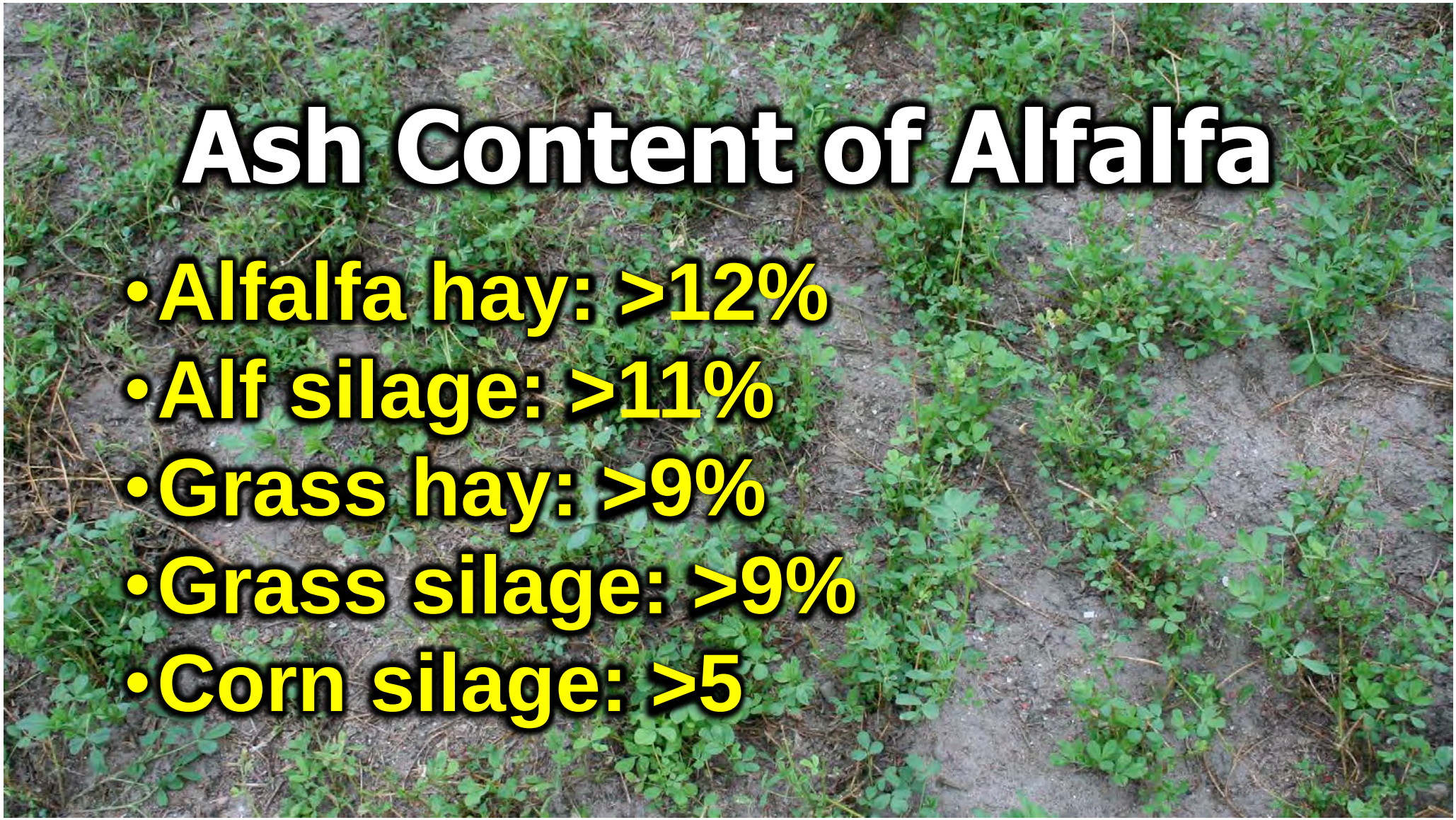
The Lack of a Relationship between NDF and NDF Digestibility



Personal Communication, Dan Undersander, Univ. of Wisconsin

The Relationship between Fiber (NDF) and Dry Matter Intake (DMI)




Ash Content of Alfalfa
•Alfalfa hay: >12%
•Alf silage: >11%
•Grass hay: >9%
•Grass silage: >9%
•Corn silage: >5

Differences in Forage Quality

Forage	CP	NDF	NDFD	NFC
	----------(%)----------			
Corn silage	8	42	58	42.5
Alfalfa	20	40	48	27.5
Annual ryegrass	20	52	65	12.5
Bermudagrass, Coastal	12	67	40	<10
Bermudagrass, Tifton 85	12	69	60	<10
Rye	20	57	60	12.5
Sorghum-Sudan	10	67	58	12.0
SxS BMR	10	67	65	14.0
Tall fescue	17	60	60	14.5

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Corn After Alfalfa

- Conv. till, strip till, and no-till can all work very well
- Likely will not respond to more than 40-50 lbs of N/acre in yr 1
  - Higher N levels = big nitrate leaching loss risk
  - Heavy spring rains will increase N loss
- Yields normally 15-30% greater than continuous corn
  - N! (slow release N)
  - Breaks pest cycles (insects, diseases, weeds, nematodes, etc.)
  - Fosters beneficial insects
  - Soil improvements
  - Many other factors, as well

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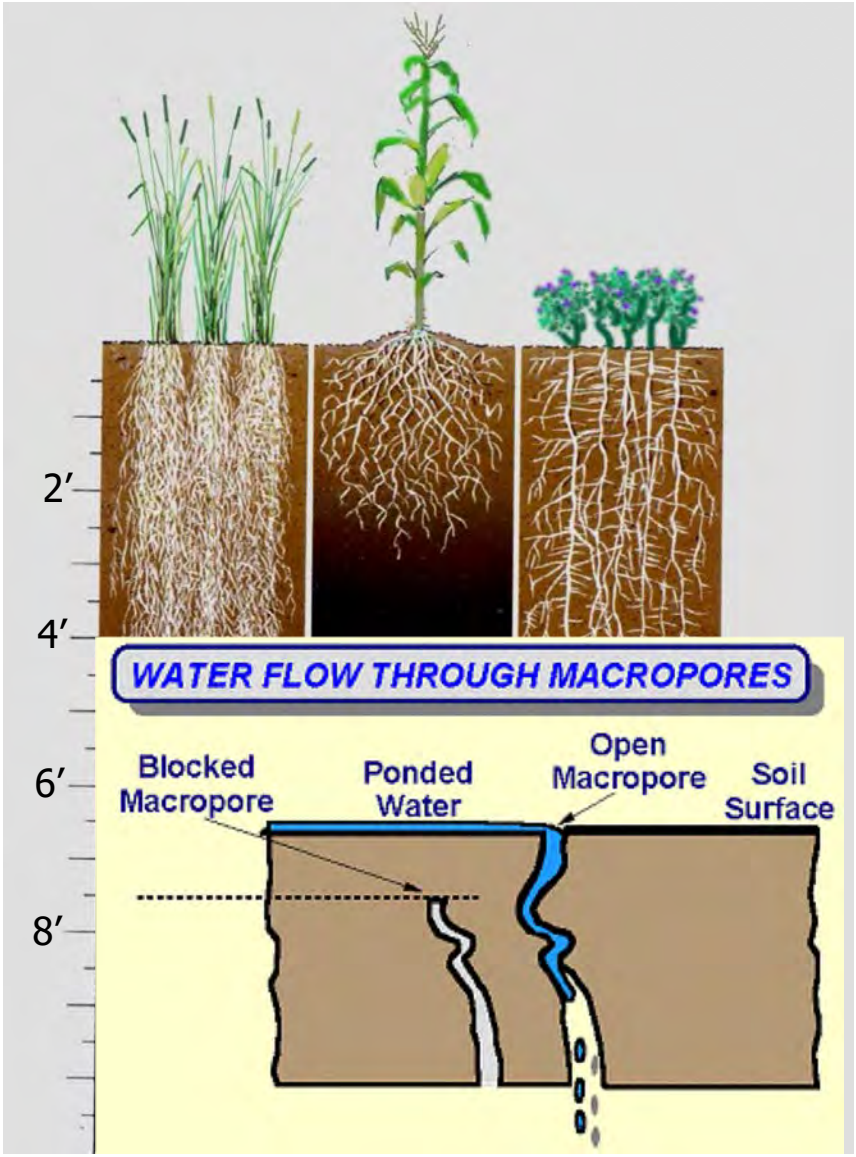
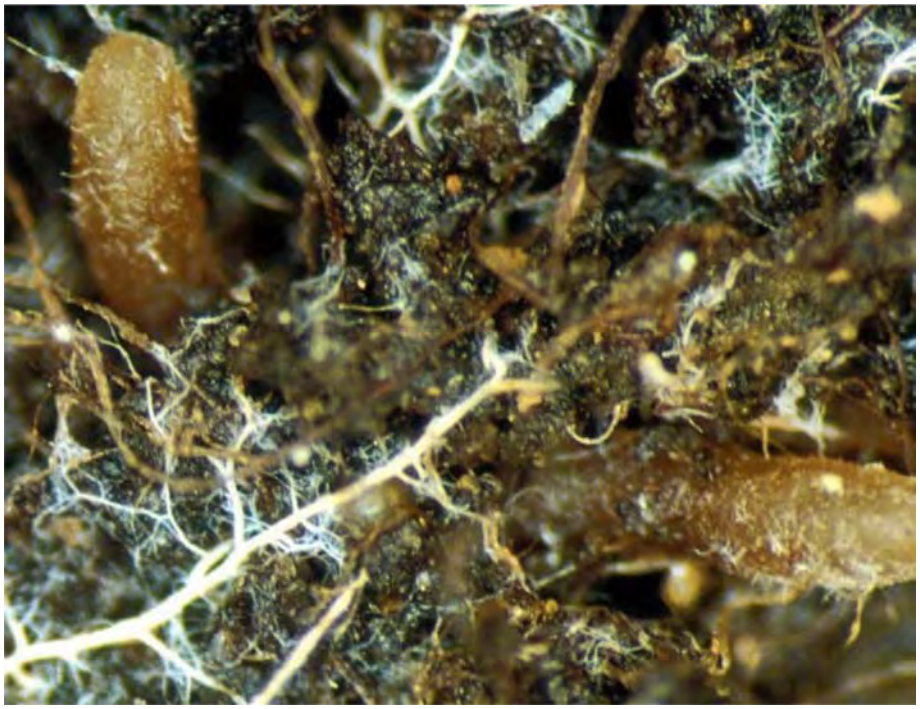


Soil Improvements of Alfalfa

- Alfalfa roots more deeply than many other crops. How deep?
  - 15 feet is typical
  - Maybe 75-100 feet???
- Macropores improve soil drainage Root diameter up to ¼" thick at 10 ft depth

Perennial Forages Turn up the FM!

- Arbuscular mycorrhizal fungi (AMF) explore the soil, accessing water and NUTRIENTS in nooks and crannies.



Photos courtesy of *On Pasture*

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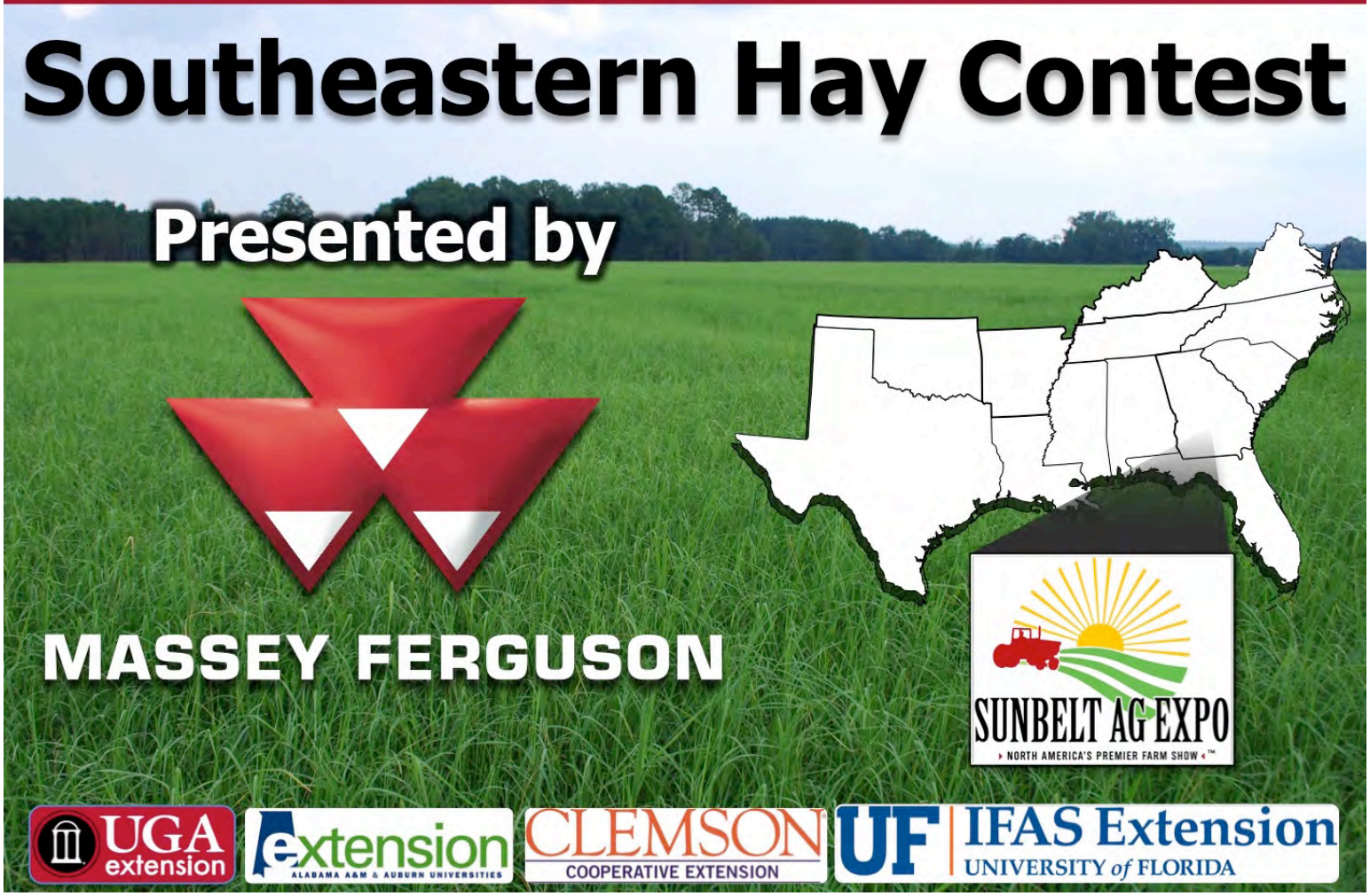
Terminating the Alfalfa Before Corn

Options

- Moldboard plow
- Fall term. [2,4-D + dicamba (1 pt + 0.5 pt); or + glyphosate (2 lbs)]
  - Winter crop benefits from N or N leaching may occur
  - More flexibility for early spring corn planting
- Spr. term. [2,4-D + dicamba (1 pt + 0.5 pt); or + glyphosate (2 lbs)]
  - Must have 4-6 inches of regrowth to terminate
  - Plant back restriction is 0-30 days for corn, depending on rate, etc.
  - DiFlexx and DiFlexx DUO = dicamba products w/ CSI safener (0 d)

Enter for a chance at a WINNING combination

Southeastern Hay Contest



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Forage crops are grown on approximately 4 million acres in Georgia and e-based livestock systems have a farm gate value of

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xtension-outreach/commodities/forages.html

FORAGE NEWS

Beef Cattle Short Course

Annual short course is a daylong educational program that will cover economics for cow and calf producers.

PUBLISHED 02/28/2018

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Questions?