


2010 Georgia Grazing School:

The primary forage grasses for pasture-based dairies

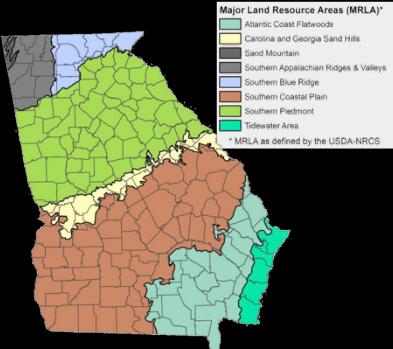
2010 Grazing School for Milk Producers

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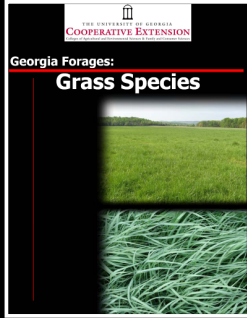
Dennis Hancock
Extension Forage Specialist
UGA – Dept. of Crop and Soil Sciences



Georgia's Grasslands are DIVERSE!





Georgia Forages: Grass Species




Over 35 forage grasses.

- Cool Season Annuals
- Cool Season Perennials
- Warm Season Annuals
- Warm Season Perennials


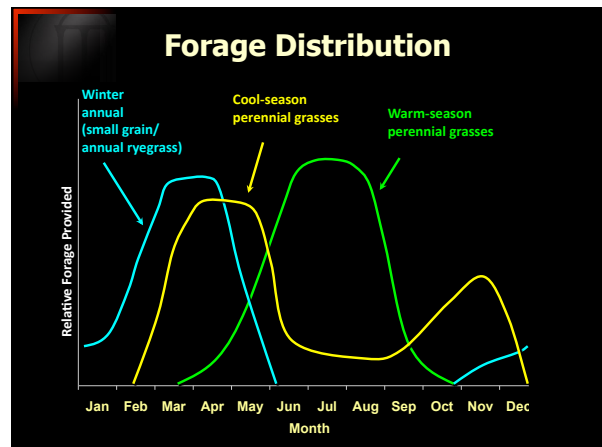
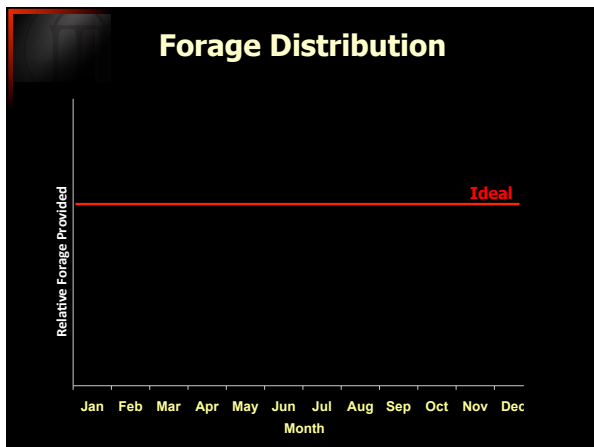


Georgia Forages: Legume Species



Over 25 forage legumes.

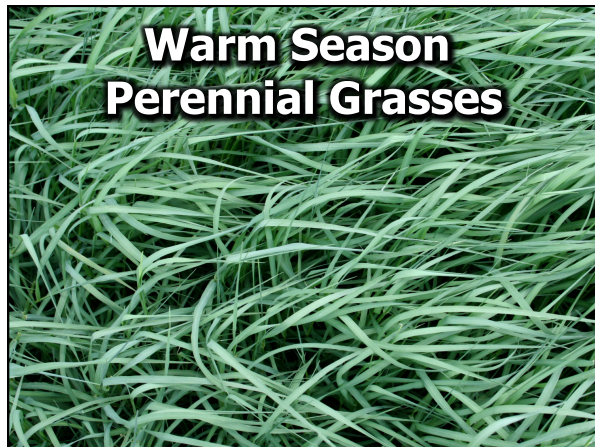
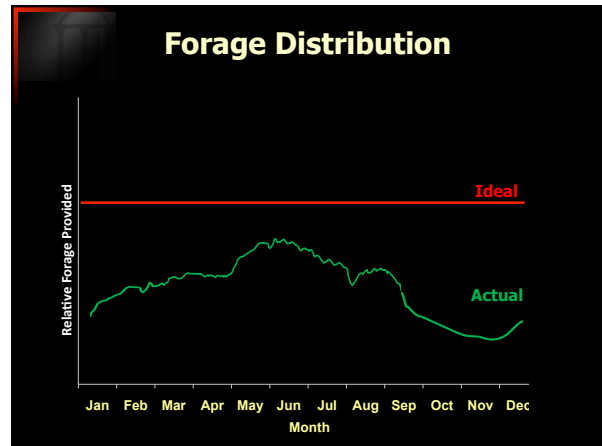
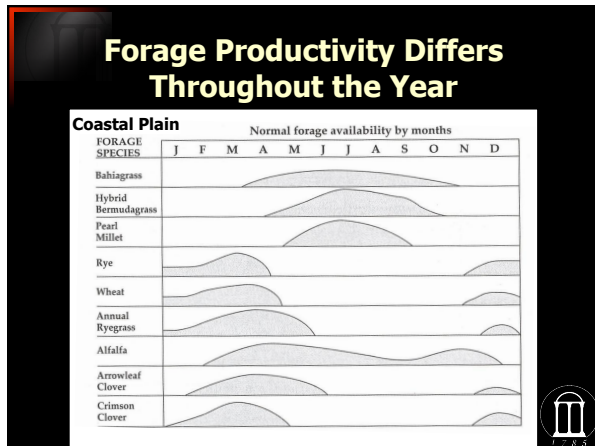
- Cool Season Annuals
- Cool Season Perennials
- Warm Season Annuals
- Warm Season Perennials

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Bahiagrass

- Tolerates broad pH range (5.5-6.5 best)
- Tolerates low fertility
- Tolerates close grazing
- Resistant to most diseases and has few pests
- Prefers sandy soils
- Thick vigorous rhizomes
- *Competitive*
- Propagated by seed

Bahiagrass (*Paspalum notatum*)

- Seed dormancy and slow germination problems
- Most of the forage is produced below 3-4 inches
 - Larger paddocks
- Low quality
 - Fast round
- Max growth rate is < bermudagrass
 - Slow round

Bermudagrass


- Common (seeded)
- Hybrids (sprigged)
 - Tifton (USDA-ARS & UGA)
- Typically very drought tolerant
- Aggressive and persistent
- Requires high fertility

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Bermudagrass


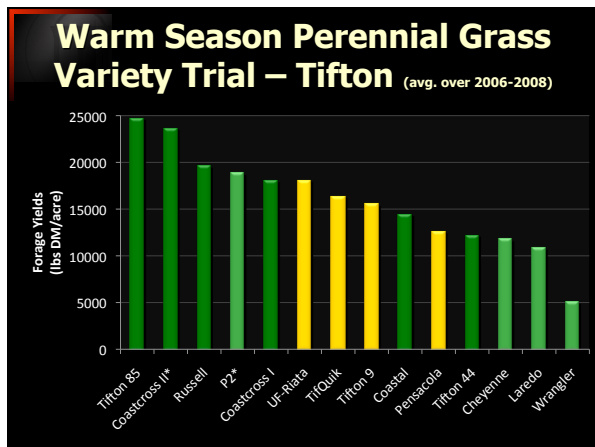
- Not tolerant of shade or poorly-drained soils.
- Varieties differ:
 - Yield
 - Digestibility
 - Vigor during establishment
 - Rest requirement ("length of round")
 - Drying rate (hay)



Selecting a Forage Bermudagrass Variety
Dennis W. Hancock¹, Norman R. Edwards², T. Wade Green³, and Deron M. Rehberg⁴
University of Georgia Cooperative Extension

Selecting the appropriate variety.

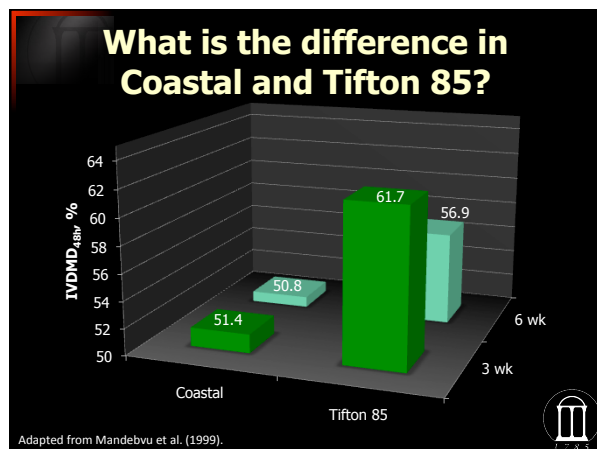
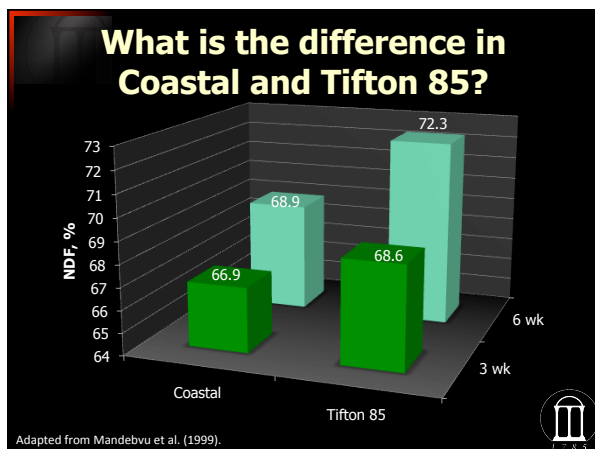
Variety	Overall Rating	Yield ¹	Digestibility ²	Winter Hardiness	Persistence	Leaf Spot Resistance
Alicia (Alecia)	★★★	100	P	G	P	P
Coastal	★★★★	100	F	G	G	E
Coastcross II	★★★★★	135	E	G	ND	ND
Russell	★★★★★	130	G	E	E	G
Tifton 44	★★★★	90	G	E	G	E
Tifton 78	★★★	120	E	F	F	E
Tifton 85	★★★★★	135	E	F	E	E

Stocker performance on 'Pensacola' bahiagrass and preferred bermudagrass varieties in selected research trials in the Coastal Plain.

	State	ADG (lbs/hd/d)	Gain (lb/acre)	Stocking Rate (hd/acre)	Grazing Period (days)
Pensacola (bahia)	GA ¹	1.0	222	1.5	131
Coastal	GA ¹	1.1	331	2.5	131
Coastal	TX ²	1.0	279	3.0	92
Coastal	GA ³	1.5	641	2.5	168
Tifton 44	GA ³	1.6	681	2.5	168
Tifton 78	GA ⁴	1.4	704	3.2	169
Tifton 85	GA ⁴	1.5	1032	4.4	169
Tifton 85	TX ²	1.7	465	3.0	92

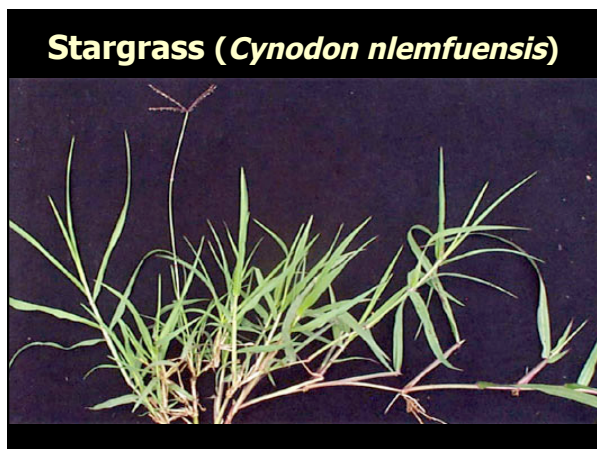
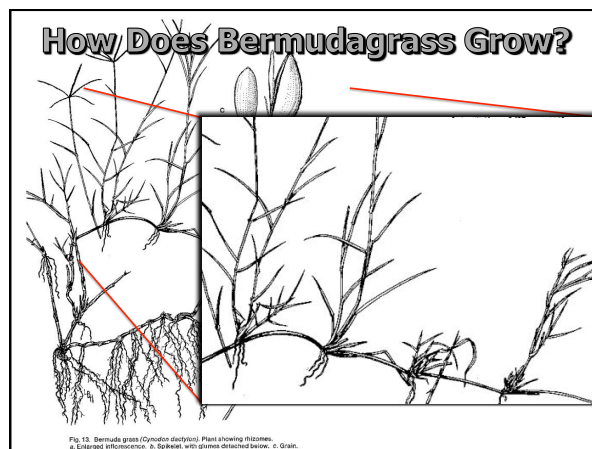
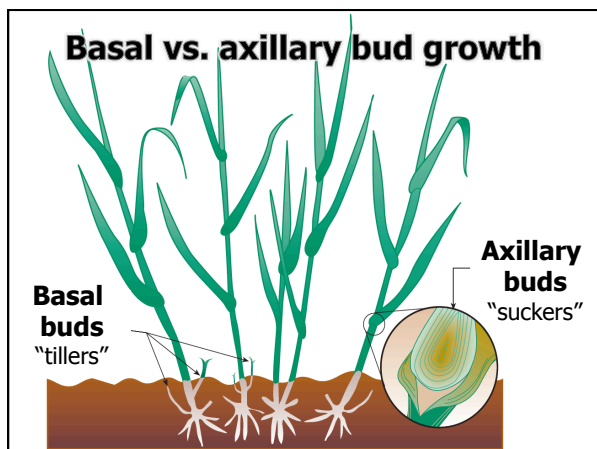
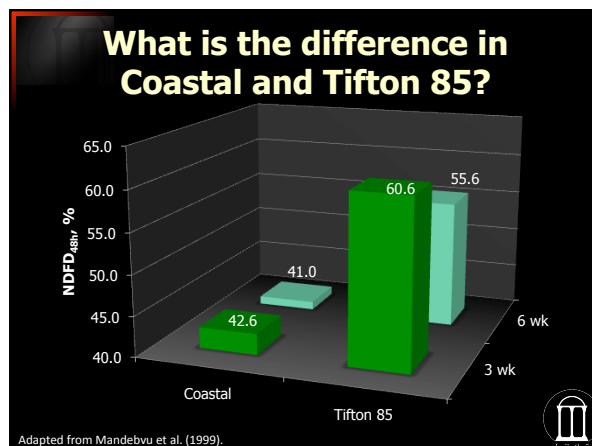
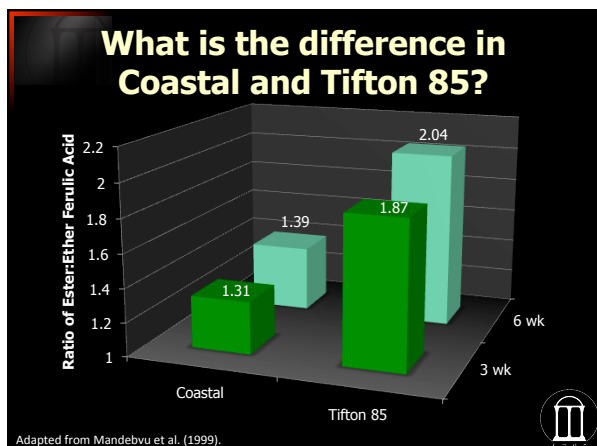
1 Utley et al., 1974. J. Anim. Sci. 38:490-495.
2 Rouquette et al., 2003. Beef Cattle Research in Tx. pp. 62-66.
3 Utley et al., 1981. J. Anim. Sci. 52:725-728.
4 Hill et al., 1993. J. Anim. Sci. 71:3219-3225.



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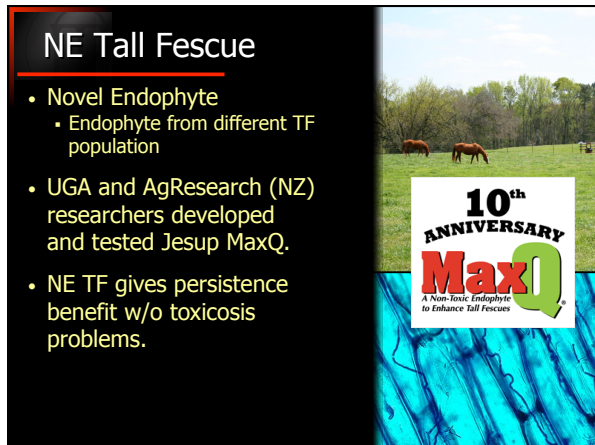
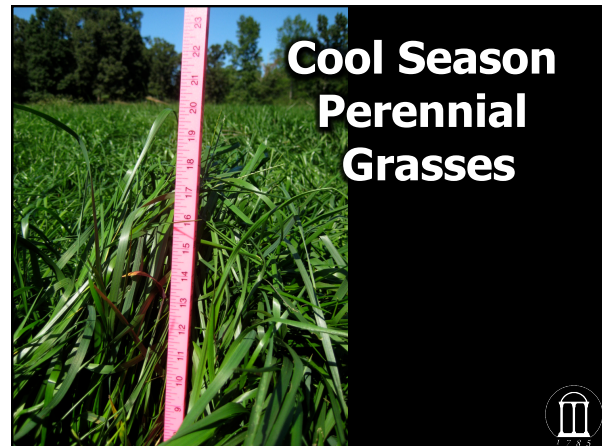
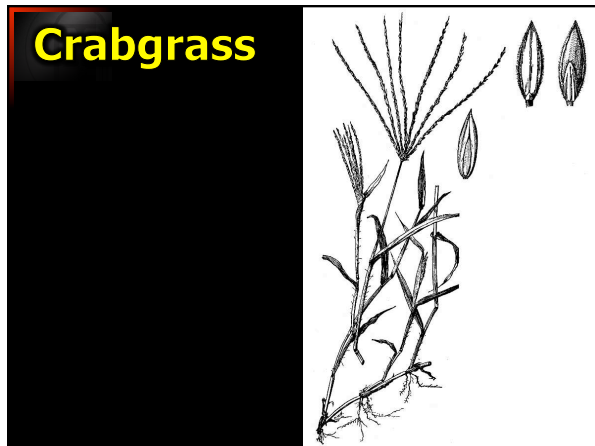
Crabgrass

Item	Harvest interval, days		
	21	35	49
Yield, dry lbs/ac	2,610	6,668	8,898
	% DM		
CP	15.6	14.3	11.0
NDF	61.3	66.6	69.8
ADF	35.7	38.9	42.7
TDN	62.6	59.1	54.8

Beck, et al., 2007 J. Anim. Sci.
Common crabgrass; Hay harvest residual height = ~2 inches;
Regrowth after early July cutting.

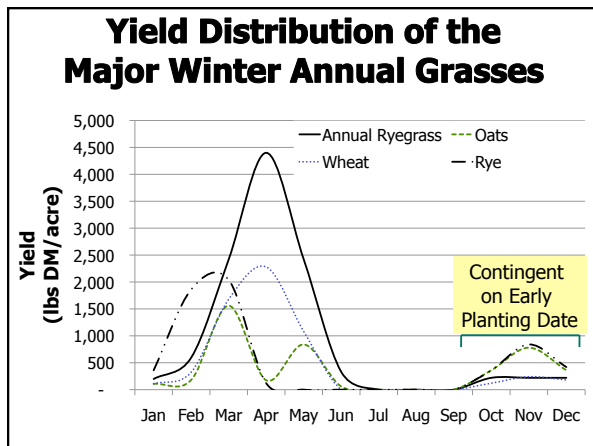
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Oats

Adaptation	South and central GA. Soil pH should be kept above 6.0 for best results.
Maturity	Early (if planted early); Late (if grown for hay)
Cold Tolerance	Poor
Problems	Oat can be winterkilled in some years. If grazed early, later growth is frequently very poor.
Varieties	Horizon 201, Horizon 474, SS76-40, and RAM9106.

Rye (cereal rye)

Adaptation	Entire state. More tolerant of soil acidity than oat or wheat.
Maturity	Early to very early
Cold Tolerance	Excellent
Problems	Rye will mature quickly and quality may decline fast. Timely grazing or harvest management will be required.
Varieties	AGS104, Bates, Early Graze, Oklon, Wintergrazer 70, Wrens Abruzzi, and Wrens 96 Early: FL 401 (CP)

Wheat

Adaptation	Entire state. Not tolerant of soil acidity.
Maturity	Medium late
Cold Tolerance	Good
Problems	Late as ryegrass, but not as high yielding.
Varieties	Pioneer 26R61, Roberts (P,M), SS8641 (CP), and USG 3592

Annual Ryegrass

Adaptation	Entire state. Tolerates poor drainage and close grazing. Soil pH should be kept above 6.0 for best results.
Maturity	Late
Cold Tolerance	Good
Problems	Interferes with bermudagrass emergence mechanism: (?) competition, luxury K uptake, allelopathy

Annual Ryegrass

Varieties	<p>Early Varieties: Attain, Big Boss (CP), Bulldog (aka Grazer), Diamond T, Ed, Flying A, Marshall**, Oregro DH-3, Prine, Rio, TAMTBO, and Verdure (CP)</p> <p>Late Varieties: Attain, Big Boss, Jumbo, Marshall**, ME94, Oregro DH-3 (P, M), Prine, Rio (CP, P), and Verdure (CP)</p> <p>Season-Long: Attain, Big Boss, Ed, Diamond T, Jumbo (CP), Marshall**, Oregro DH-3 (CP), Passerel Plus (M), Prine, Rio (CP, P), and Verdure (CP)</p>
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** Highly susceptible to crown rust.

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Effect of Winter Annual Mixture on Beef Production

	ORG	RG	RRG	TRG	WRG
ADG (lbs/hd/d)					
Winter	1.19	0.73	1.39	1.11	1.20
Spring	2.45	2.60	2.39	2.07	2.37

Beck et al., 2007. J. Anim. Sci. 85:536-544 (SW Arkansas, Avg. of 2 yrs)

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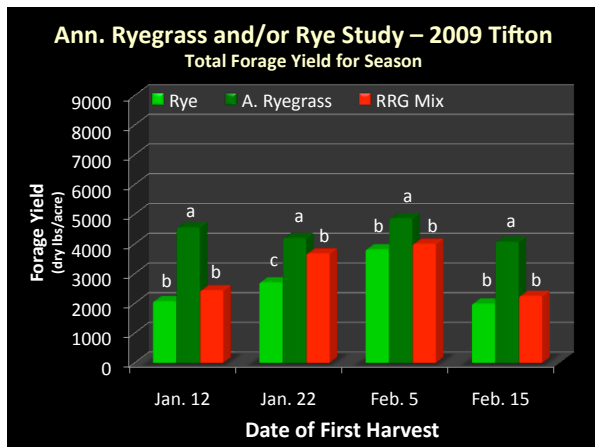
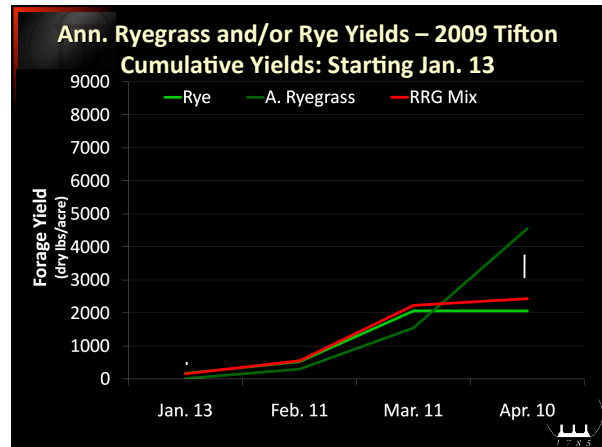
	ORG	RG	RRG	TRG	WRG
ADG (lbs/hd/d)					
Winter	1.19	0.73	1.39	1.11	1.20
Spring	2.45	2.60	2.39	2.07	2.37
Gain (lb/acre)	253	239	281	219	256

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Gain (lb/acre)	253	239	281	219	256
Cost of Gain (\$/lb)	\$0.29	\$0.28	\$0.25	\$0.39	\$0.28
Net Return (\$/acre)	\$110	\$106	\$144	\$56	\$115

Beck et al., 2007. J. Anim. Sci. 85:536-544 (SW Arkansas, Avg. of 2 yrs)



Recommended Seeding Rates

Species	Grown Alone*	Mixture*
	----- lbs seed/acre -----	
Ryegrass	25-30	15-25
Oats	90-120	60-90
Wheat	90-120	60-90
Rye	90-120	60-90
Arrowleaf	6-8	5-6
Crimson	20-30	10-15

* If broadcast, use the high end of the range. If drilled, use the low end of the range.

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Drilling Depth



- Watch cutting coulter depth in wet ground
- Coulters should cut about twice depth of desired seeding depth
- Seeding too deep is major cause of establishment failures!



Winter Annual Forage Quality

Species	Crude Protein %	NE _L Mcal/lb	Annual Yield* lbs DM/acre
Ryegrass	10-20	0.52-0.70	10,630
Oats	8-18	0.50-0.67	7,100
Wheat	8-18	0.50-0.68	7,110
Rye	8-18	0.48-0.68	4,850
Arrowleaf	12-20	0.60-0.70	3,470
Crimson	12-20	0.60-0.70	3,570

Quality ranges approximate the typical values and are highly dependant upon forage maturity at grazing/harvest. Yields are 3-yr averages from GA and AL.



Questions?

