2019 Baleage and Silage Short Course:
Legume Options for Baleage

Dr. Jennifer Tucker
UGA Asst. Prof., Animal and Dairy Scientist

LEGUME OPTIONS FOR BALEAGE

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- In General – Annual Grasses perform better in a baleage production system
- Grasses tend to ferment better than legumes – more water-soluble carbohydrates
- However, Legumes can be successful
- Especially in a mixture!

Advantages of Legumes produced as Baleage

- Reduced Leaf Shatter
- Reduced Dry Matter loss
- "Ideal" Stage of Maturity can occur during challenging weather periods
  - *Baleage decreases weather impacts helping to maintain quality*
- Harvest at the right stage of maturity
  - *Bud to Early Bloom in Legumes (Ideal 10% bloom)*

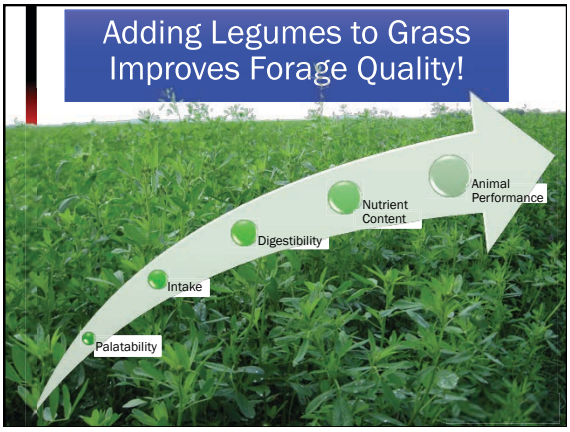
Legume Options for Baleage

Cool Season	Warm Season
Red Clover	Alyce clover
White Clover	Cow Peas
Arrowleaf Clover	Forage Soybeans
Crimson Clover	

ALFALFA

Let's MIX IT UP!

Adding Legumes to Grass Improves Forage Quality!



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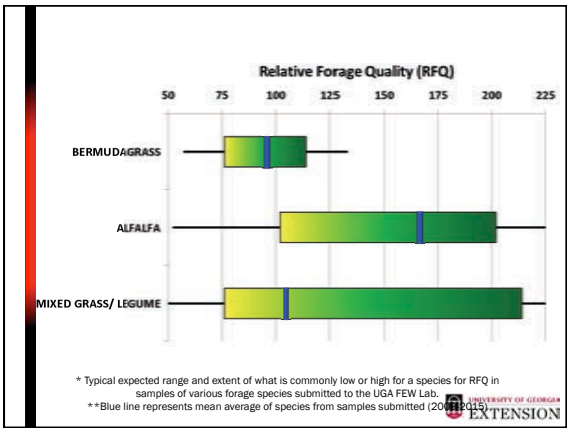

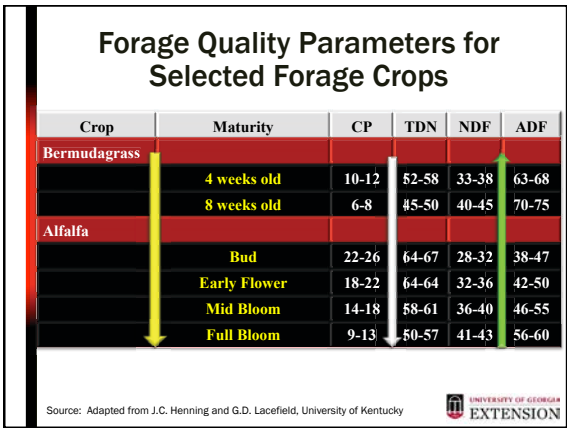

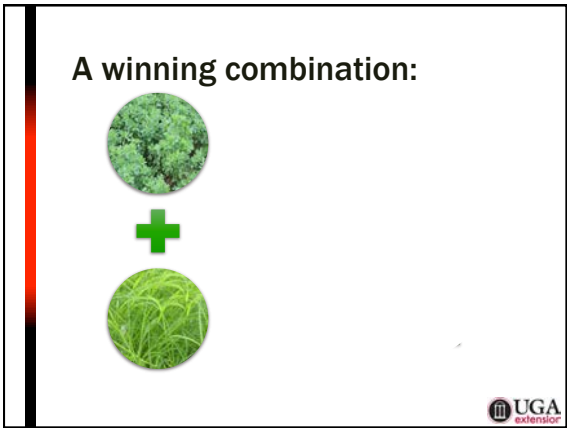

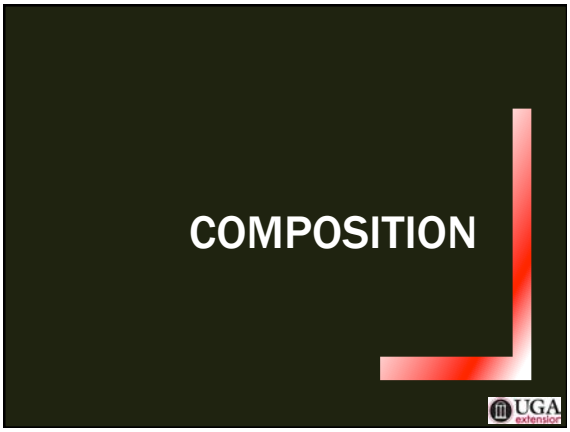

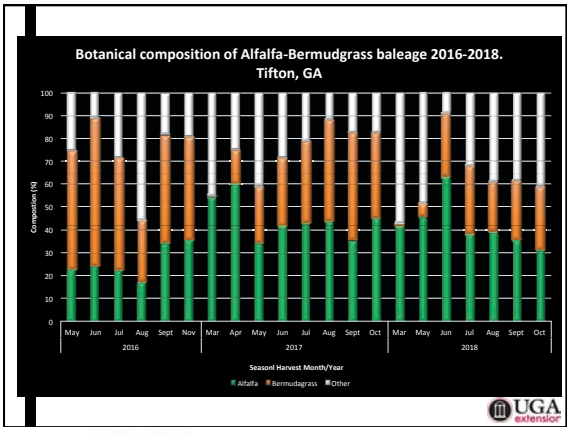

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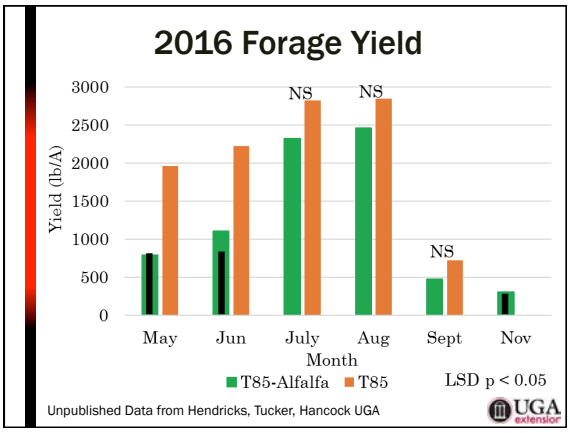

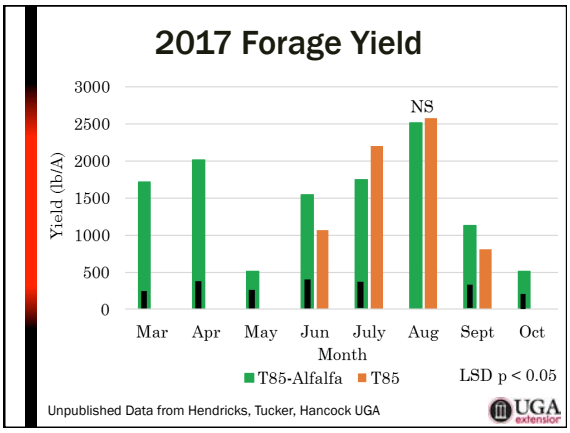

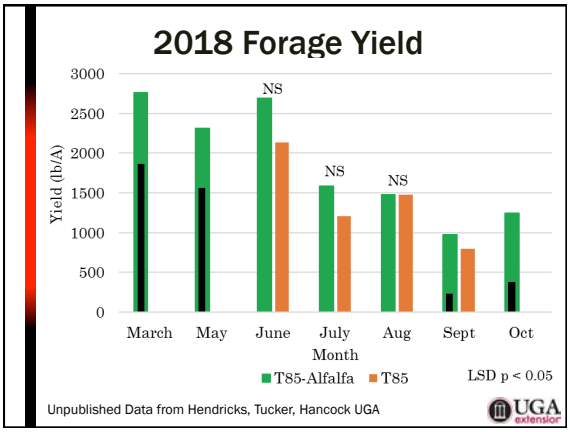

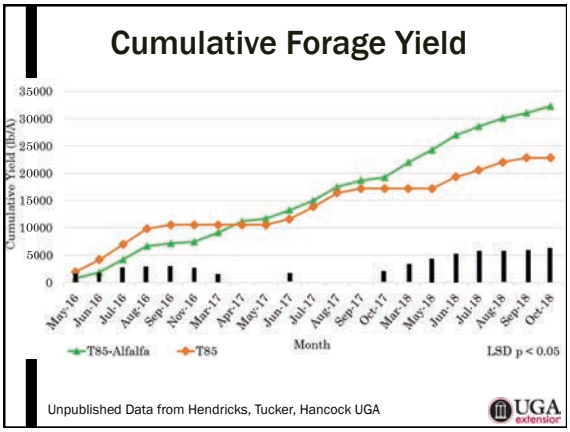

	T85-ALF						T85					
2016	ADF	NDF	CP	IVTD	TDN	RFQ	ADF	NDF	CP	IVTD	TDN	RFQ
May	38.9	63.3	8.2	68.9	56.3	81	40.3	71.9	6.1	62.3	49.5	59
Jun	27.8	48.5	15.2	81.6	62.5	118	29.3	57.9	15.0	77.5	58.4	94
Jul	33.5	48.5	11.9	77.2	60.0	101	33.8	63.7	12.0	73.6	56.1	82
Aug	33.3	55.1	12.0	78.4	59.9	101	33.7	62.0	9.4	72.4	56.3	82
Sept	30.8	49.2	15.1	78.2	60.0	109	32.1	62.1	11.3	72.7	55.7	80
Nov	24.2	34.7	21.1	80.9	63.2	154	.	.	.	.	.	.
Seasonal Average (-May)	31.4	49.9	13.9	77.5	60.3	110	33.8	63.5	10.8	71.7	55.2	80
	29.9	47.2	15.1	79.3	61.1	116	32.2	61.4	11.9	74.1	56.6	85
2017	ADF	NDF	CP	IVTD	TDN	RFQ	ADF	NDF	CP	IVTD	TDN	RFQ
Mar	25.6	35.0	19.1	85.0	65.1	160	.	.	.	.	.	.
Apr	25.7	34.0	24.3	84.6	64.4	162	.	.	.	.	.	.
May	25.3	32.9	22.7	81.3	63.6	162	.	.	.	.	.	.
Jun	26.7	39.7	20.9	82.5	62.6	138	31.1	60.2	11.2	73.9	57.3	87
Jul	27.8	44.7	22.2	82.2	60.8	119	33.6	56.7	19.0	75.4	53.7	82
Aug	29.1	45.9	20.2	80.0	60.1	114	35.7	63.0	12.5	70.2	52.7	72
Sept	24.8	38.0	22.2	84.5	63.7	145	31.1	59.6	11.8	72.0	55.7	81
Seasonal Average	26.4	38.6	21.6	82.9	62.9	143	32.9	59.9	13.6	72.9	54.8	80
2018	ADF	NDF	CP	IVTD	TDN	RFQ	ADF	NDF	CP	IVTD	TDN	RFQ
Mar	26.5	35.3	22.7	82.1	63.1	151	.	.	.	.	.	.
May	25.2	35.3	22.6	83.5	64.5	156	.	.	.	.	.	.
Jun	31.7	42.7	22.1	78.5	57.8	114	30.8	59.8	15.8	77.2	56.6	91
Jul	33.2	44.1	18.4	78.2	60.1	115	33.7	67.1	10.2	70.4	55.3	77
Aug	34.1	44.2	17.3	78.7	59.9	115	32.2	59.2	12.9	78.2	57.4	93
Sept	30.8	45.3	17.9	78.7	60.0	113	33.7	61.4	11.2	73.1	55.6	82
Oct	31.6	44.8	18.3	75.8	58.5	109	.	.	.	.	.	.
Seasonal Average	30.4	41.7	19.9	79.3	60.6	125	32.6	61.9	12.5	74.7	56.2	86

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Seasonal Average	**31.4**	**49.9**	**13.9**	**77.5**	**60.3**	**110**	**33.8**	**63.5**	**10.8**	**71.7**	**55.2**	**80**
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Seasonal Average	**30.4**	**41.7**	**19.9**	**79.3**	**60.6**	**125**	**32.6**	**61.9**	**12.5**	**74.7**	**56.2**	**86**

Unpublished Data from Hendricks, Tucker, Hancock UGA

Seasonal CP and TDN
T85 with and without Alfalfa

	T85+Alf	T85	T85+Alf	T85
	CP		TDN	
2016	15	12	61	57
2017	22	14	63	55
2018	20	13	61	56

Unpublished Data from Hendricks, Tucker, Hancock UGA

Nutrient requirements of different classes of cattle

Class of Animal	Stage of Production	TDN % Required	CP % Required
Mature Cows	Dry Pregnant	48	7
	Peak Lactation	60	12
	Late Lactation	55	9
1st calf Heifers	----------	62	12
Growing calves (500 lb)	----------	61	11

Kim Mullenix, Auburn University
Adapted from NRC for Beef Cattle 7th ed. (2000)

Seasonal CP and TDN
T85 with and without Alfalfa

	T85+Alf	T85	T85+Alf	T85
	CP		TDN	
2016	**15**	12	61	57
2017	**22**	14	63	55
2018	**20**	13	61	56

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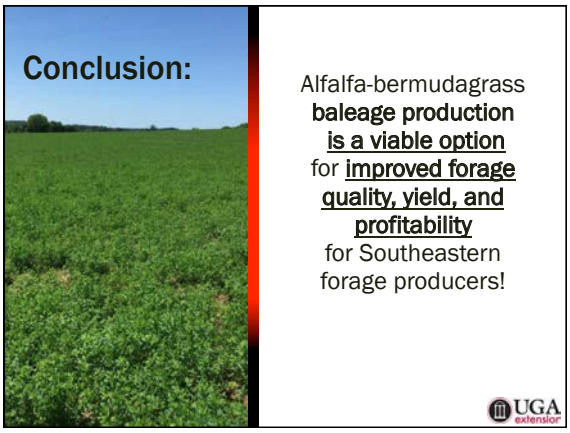

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