Utilizing Byproduct Feed for Beef Cattle

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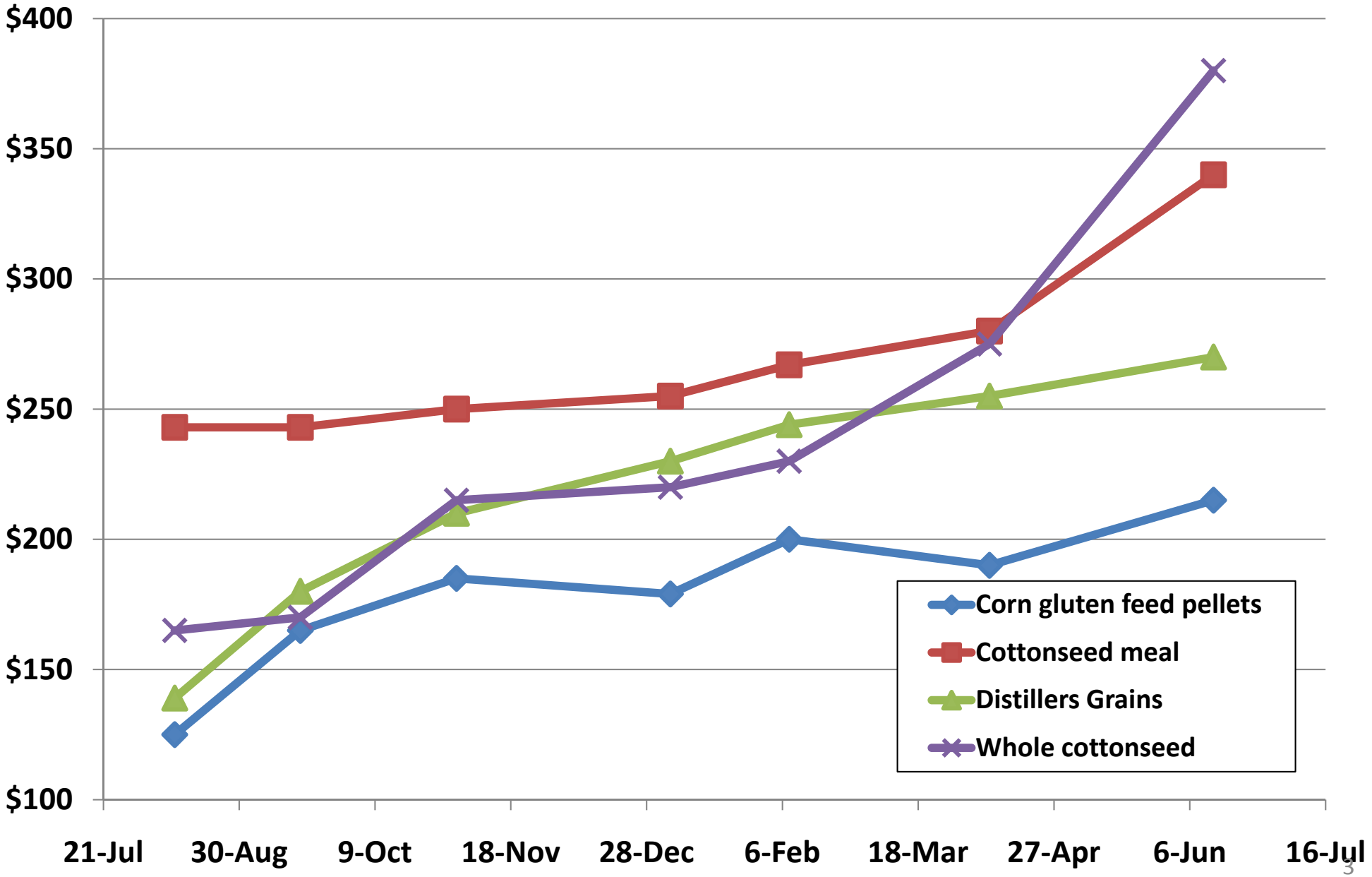
THE UNIVERSITY OF GEORGIA
COOPERATIVE EXTENSION
Colleges of Agricultural and Environmental Sciences & Family and Consumer Sciences

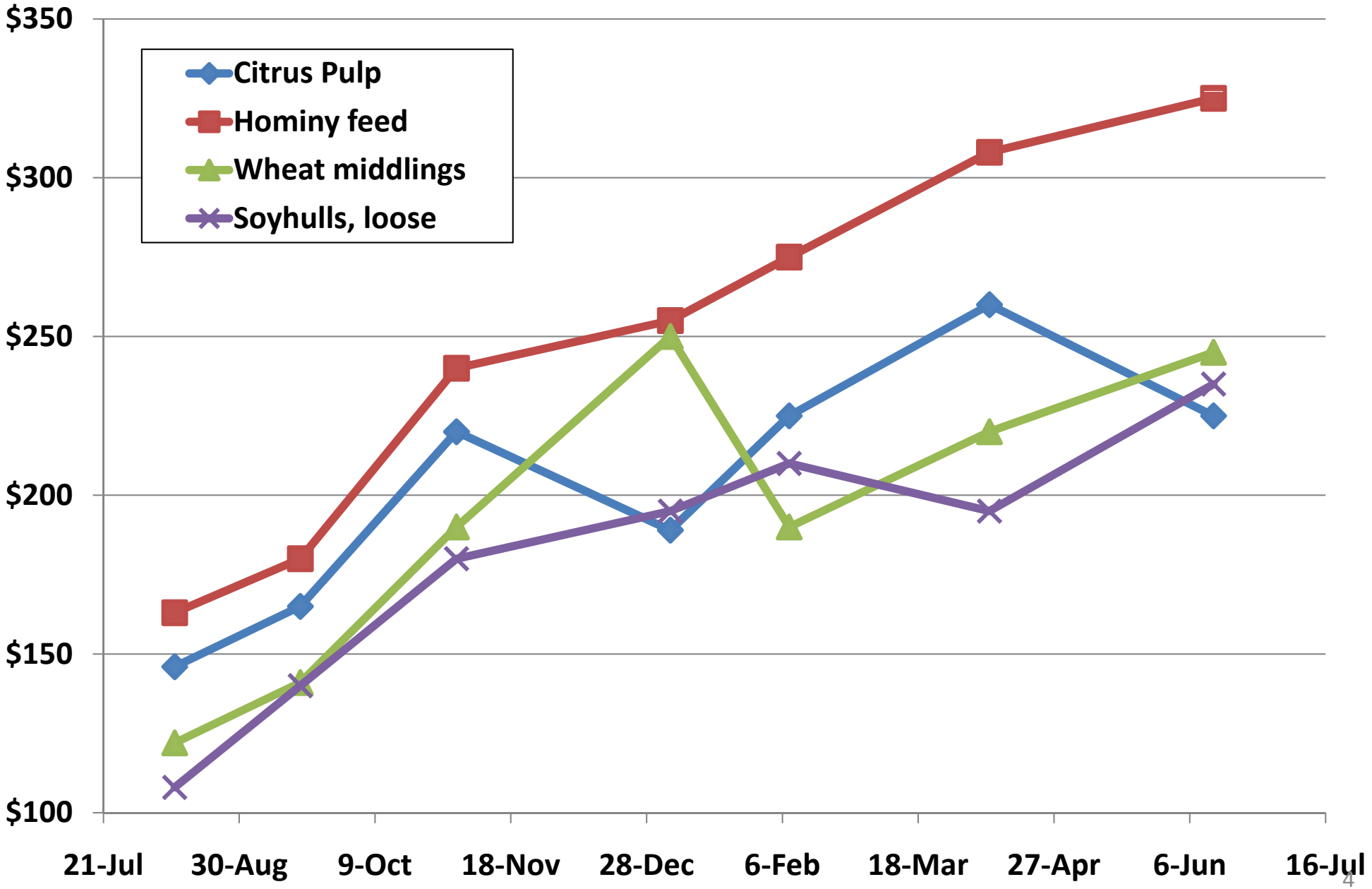
Potential Byproducts

1. Corn/Wheat
   - Corn gluten feed
   - Distiller's grains
   - Hominy
   - Wheat middlings
2. Cotton
   - Whole seed
   - Gin trash
   - Hulls
3. Soybean
   - Soybean Hulls
   - Soybean meal
4. Others
   - Brewer's Grains
   - Citrus Pulp
   - Peanut Hulls
   - Cull vegetables

Seasonality of CP Byproducts



Seasonality of Energy Byproducts



Byproduct Pricing

Ingredient	$/ton	% DM	% CP	% TDN	$/lb CP	$/lb TDN
SBM 48	$ 462.00	90	48	87	**$ 0.483**	**$ 0.246**

$/ton / % DM / % nutrient / 2000 lb = $/lb of nutrient

www.ugabeef.caes.uga.edu/tools

Utilizing corn byproducts for beef cattle stockering and finishing operations in the southeastern United States

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The University of Georgia

Corn Byproducts

- Corn silage = exceptional energy source
  - Deficient in CP for growing ruminants
- Excellent availability of DDGS and CGF in GA
  - Ethanol plant-Camilla, GA (FUEL, LLC)
  - Corn processor-Loudon, TN (A.E. Staley Mfg. Corp.)

- Ga Mtn Research and Education Center, Blairsville, GA
- Stocker cattle fed for 84 d on corn silage (75% DM) based diet with one of three CP supplements (25% DM):
  1. Corn Gluten Feed
  2. Dried Distillers' Grains
  3. Soybean Meal & Ground Ear Corn (40:60)

Stocker Performance Data

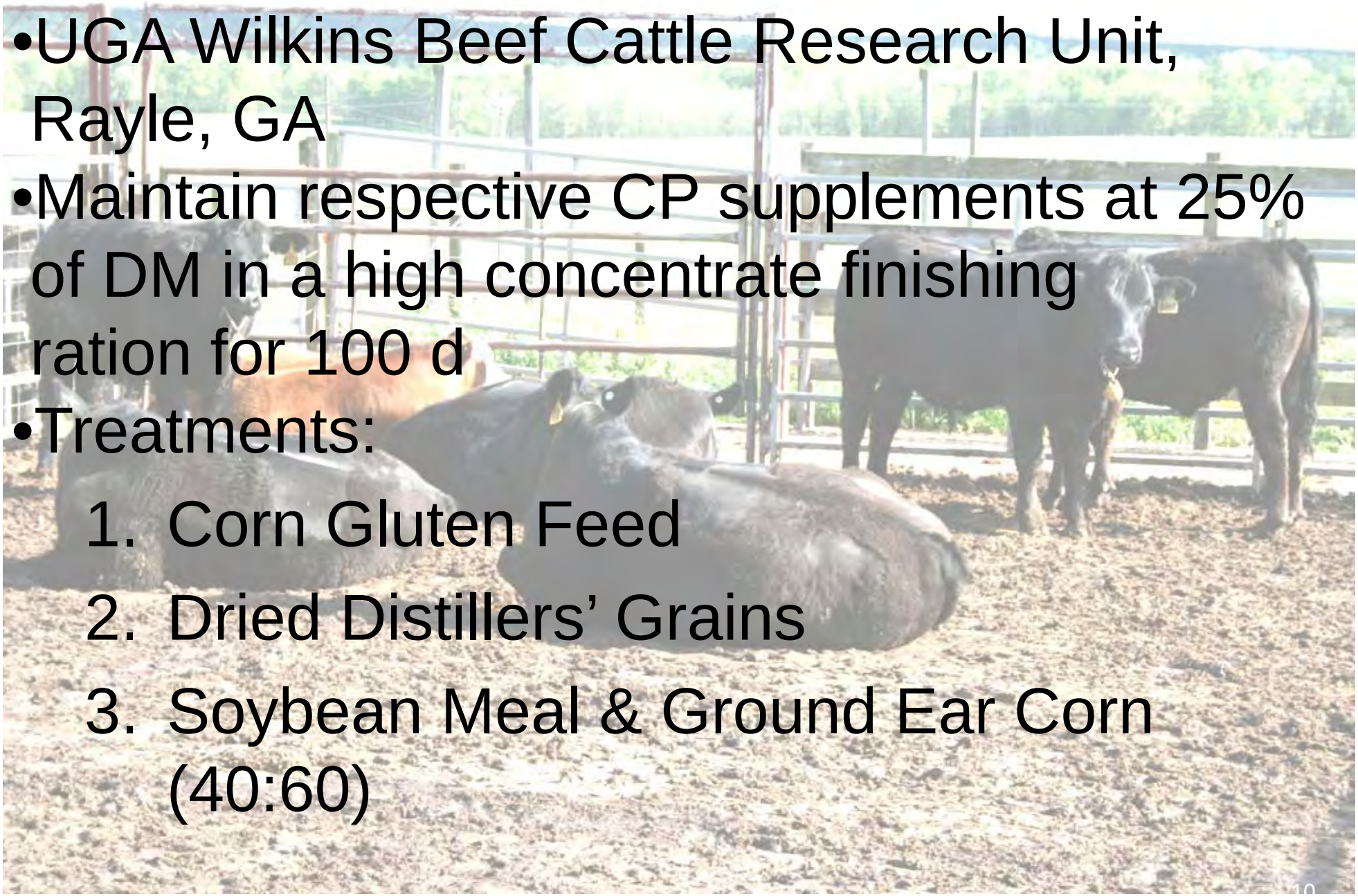
Item	Treatment		
	CGF	DDGS	SBM
BW, lb			
0	670	670	668
84	878	895	904
ADG[1], lb/d	2.1[a]	2.5[b]	2.6[b]
Feed intake, of BW	1.88[ab]	1.81[a]	2.02[b]
F:G, lb	7.4[b]	6.4[a]	6.3[a]
COG[2], $/lb	$0.58[b]	$0.51[a]	$0.61[b]

[1]cumulative ADG

[2]cost of gain – silage = $50/ton, CGF = $165/ton, DDGS = $170/ton, soybean meal = $410/ton, corn = $110

[abc] Within a row means without a common superscript differ (P<0.05).

Exp 2 - Feedlot Trial



- UGA Wilkins Beef Cattle Research Unit, Rayle, GA
- Maintain respective CP supplements at 25% of DM in a high concentrate finishing ration for 100 d
- Treatments:
  1. Corn Gluten Feed
  2. Dried Distillers' Grains
  3. Soybean Meal & Ground Ear Corn (40:60)

Feedlot Performance Data

	Treatment[1]		
Item	**CGF**	**DDGS**	**SBM**
ADG[2], lb/d	3.12	3.69	3.15
DMI, % BW	2.29	2.14	2.09
F:G	7.5[b]	6.01[a]	7.12[ab]
COG[3], $/lb	$0.56[a]	$0.48[a]	$0.73[b]

[1] CGF = corn gluten feed, DDGS = dried distillers grains plus soluble, SBM = soybean meal

[2]cumulative ADG

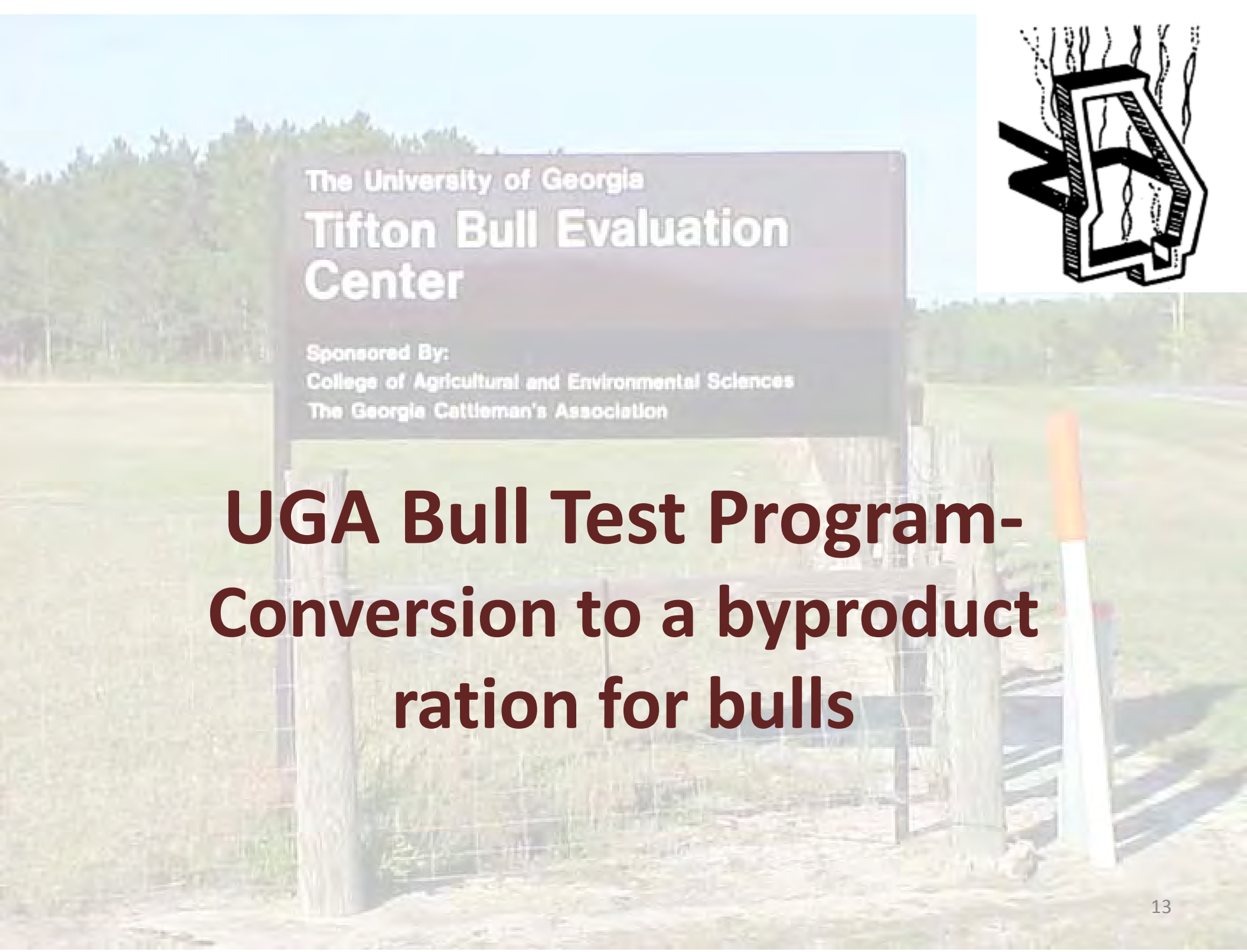
[3]cost of gain – CGF diet = $151.95/ton, DDGS diet = $159.95/ton, SBM diet = $214.98/ton

[ab] Within a row means without a common superscript differ (*P < 0.05*)

Carcass Characteristics-Yield

Item	Treatment[1]			SEM
	CGF	DDGS	SBM	
HCW, lb	780	772	752	3.32
DP,%	63.8	62.9	63.5	0.59
REA,in²	12.0	12.0	12.3	0.50
FT, in	0.48	0.44	0.47	0.04
KPH, %	2.3	2.2	2.2	0.11
YG	3.10	3.11	3.05	0.18

[1] CGF = corn gluten feed, DDGS = dried distillers grains plus soluble, SBM = soybean meal



UGA Bull Test Program- Conversion to a byproduct ration for bulls

UGA Bull Test Program

Prior to 2008 ration

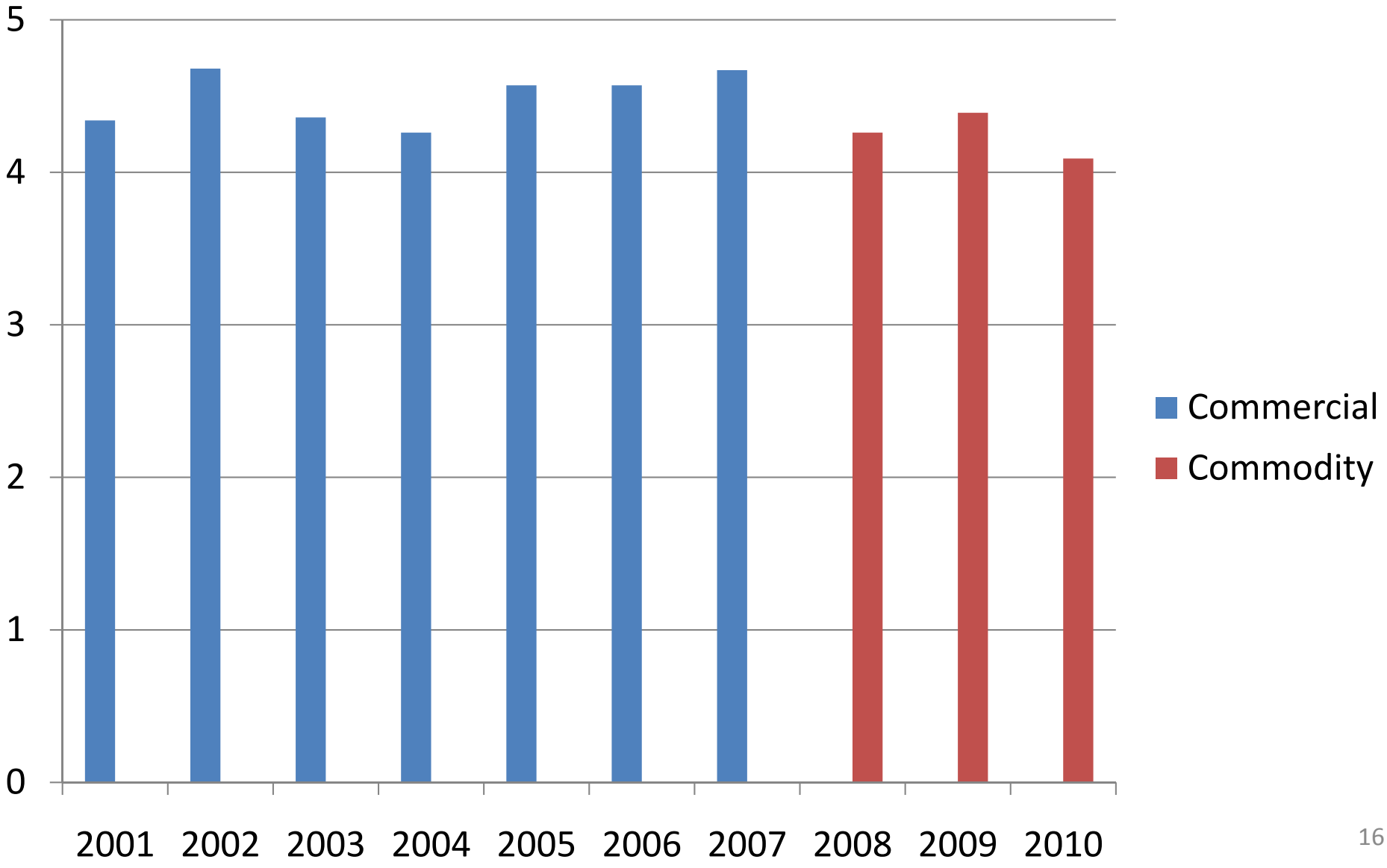
Feedstuff	**lb/ton**
Corn	850
Cottonseed hulls	500
Oats	340
SBM	240
Molasses	30
Mineral Mix	40
Cost	**$325/ton**

UGA Bull Test Program

2008 to Present - Ration

Feedstuff	**lb/ton**
Soybean hull (loose)	1000
Corn Gluten Feed	500
Corn	500
Mineral Mix	25
Cost	**$260/ton**

Tifton Bull Test Performance



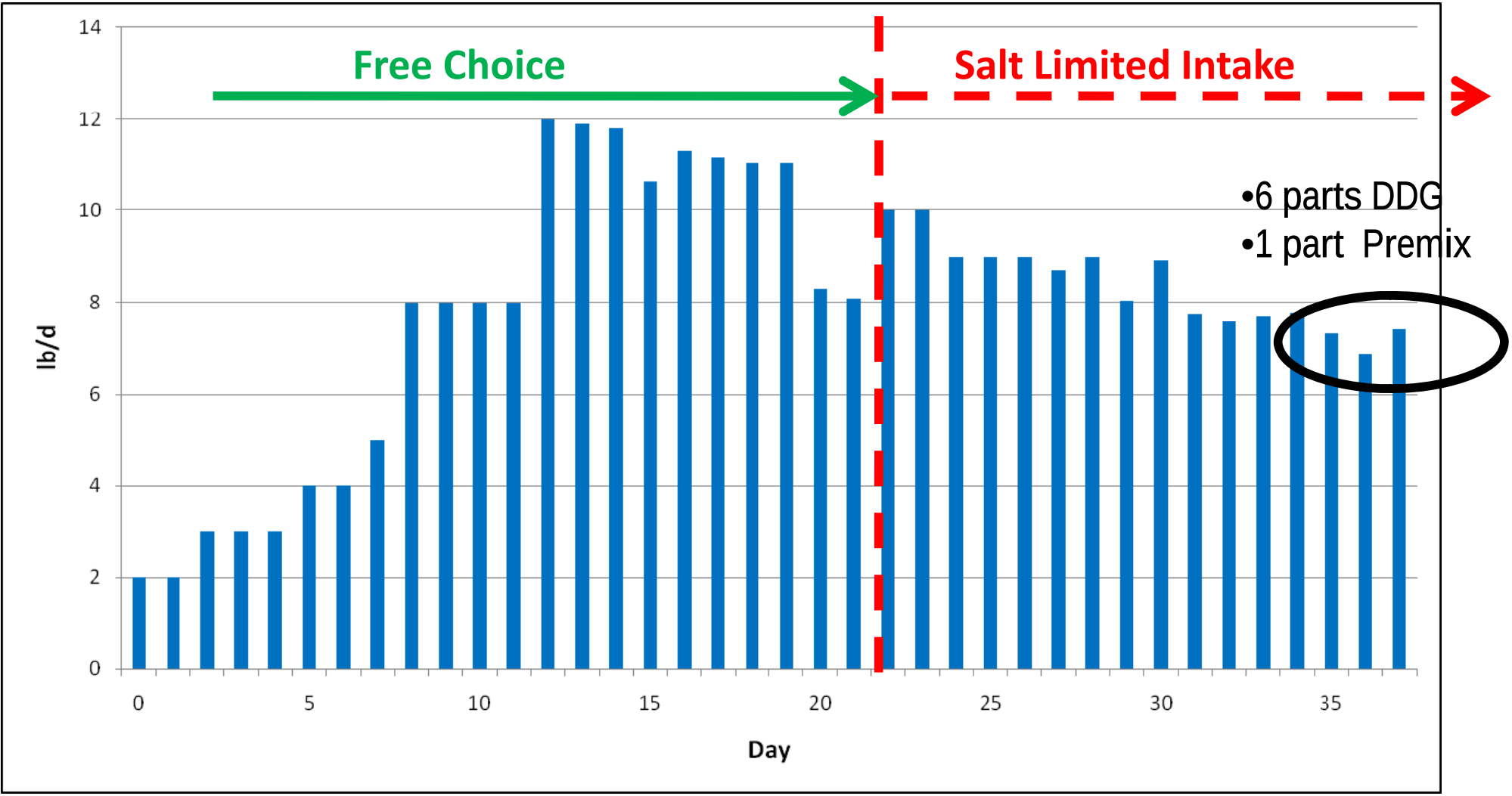
On Farm Study –Weaned and bred heifer intake of dried distillers grains

- Feeding trial conducted with heifers.
- Heifers split into 2 groups
  1. Developing Heifers(580 lbs)
  2. Bred Heifers (785lbs)
- **Period I**-Heifers given free-choice DDG starting with 2lb/hd/day and gradually increased until heifers self limited intake.
- **Period II**- A salt pre-mix was added to limit intake of DDG.
  - The pre-mix contained salt (58.3%), limestone(16.7%), and trace minerals(25%)

Nutritional Values

	Hay	DDG	Premix
DM	89	90	98
TDN	56	88	
CP	10	30	
Ca	0.48	0.10	10
P	0.27	0.91	1
S	0.28	0.54	0
Salt			55

Daily DDG intake



Animal Performance

	Day 0	Day 23	Day 53
Weaned Heifers			
Weight, lb	580	613	672
Intake, lb			
DDG		7.5	8.5
Salt premix			1.1
ADG, lb		1.62	1.95
Bred Heifers			
Weight, lb	785	794	826
Intake, lb			
DDG		7.5	8.4
Salt Premix			1.2
ADG		0.41	1.07

Thank You!

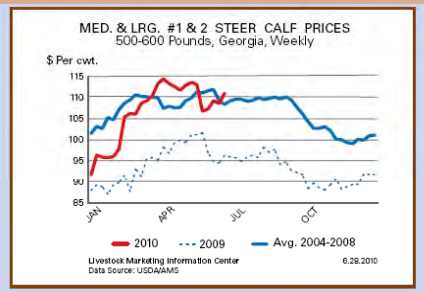
Questions?

Southeast Cattle Advisor

For up to date information on:

- Beef cattle outlooks
- Marketing
- Production information

www.secattleadvisor.com



Item	Price
SALES PRICES	
Cattle and Beef Prices as reported by USDA-Agricultural Marketing Service and Georgia Department of Agriculture	
GA 500-600 lbs. steer ($/Cwt.)	$110.57
GA 700-800 lbs. steer ($/Cwt.)	$93.80
GA 80-85% lean slaughter cow ($/Cwt.)	$59.50
GA Bred cow, Med.-Lrg, 1-2, 4-6 mos. bred ($/head)	$751.71
GA Cow-calf pairs, Med.-Lrg, 1-2, ($/pair)	$899.90
5-area Live Cattle Price ($/Cwt.)	$90.99
Choice Boxed Beef Cutout ($/Cwt.)	$154.50
Choice-Select Spread ($/Cwt.)	$8.25
INPUTS	
Farm Diesel ($/gallon), less than 1,000 gallons	$2.50
Feed Stuffs as reported by USDA-Alabama Department of Agriculture Market News, FOB Central AL unless otherwise denoted.	
Hay for cows, Good quality (9-13% CP), ($/1,000 lbs. roll)	$35.00
#2 Yellow corn ($/bushel)	$4.50
Soybean hull pellets, bulk ($/ton)	$123.00
Corn Gluten pellets, 21% protein, bulk ($/ton)	$100.00
Whole Cottonseed, FOB Gin ($/ton) $165	$211.00
Distillers' Dry Grain, FOB Central GA ($/ton)	$160.00

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