

# **Economics of Added Gain**

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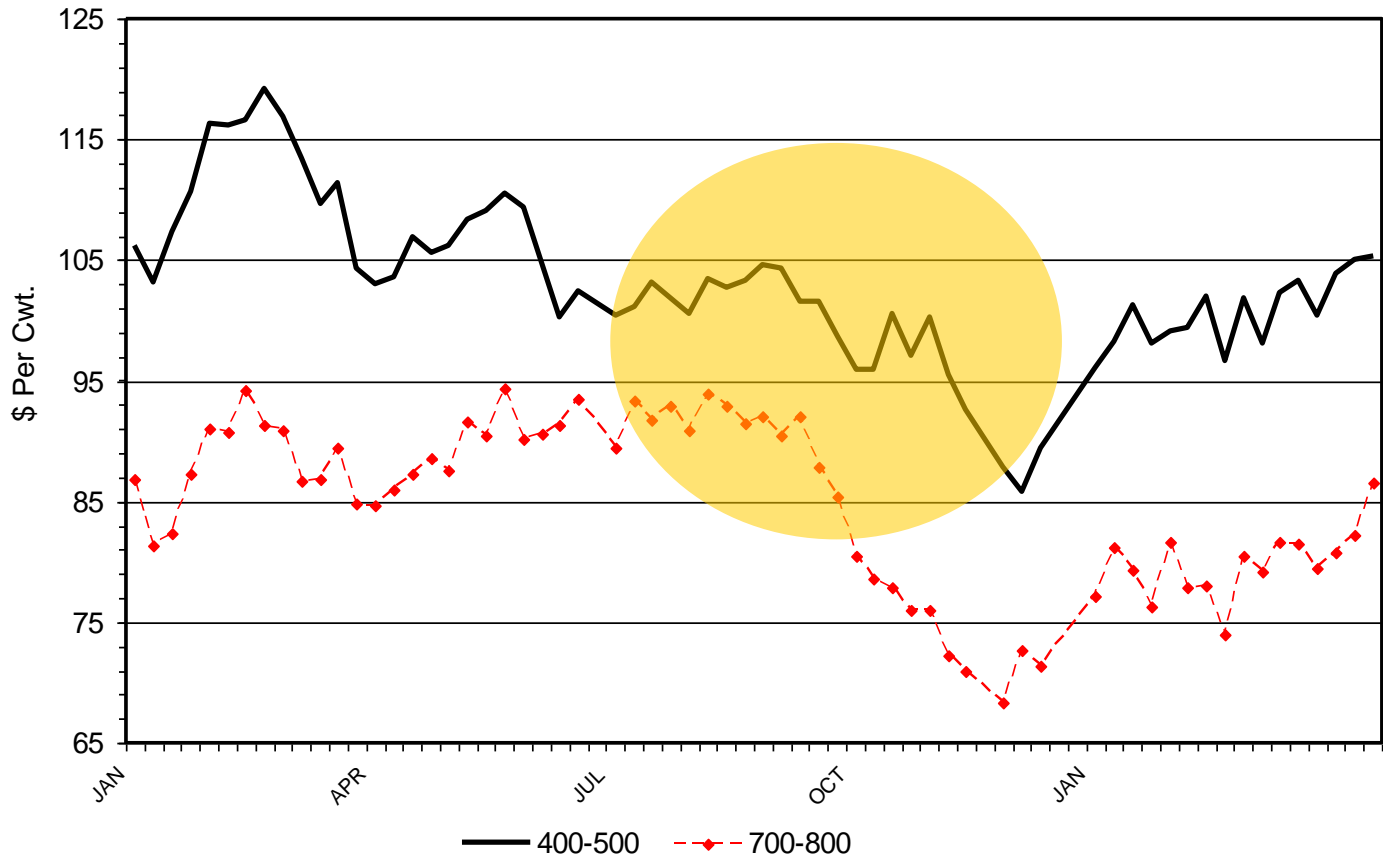


THE UNIVERSITY OF GEORGIA  
COLLEGE OF **AGRICULTURAL &**  
**ENVIRONMENTAL SCIENCES**



# Comparison of Calf and Feeder Cattle Prices

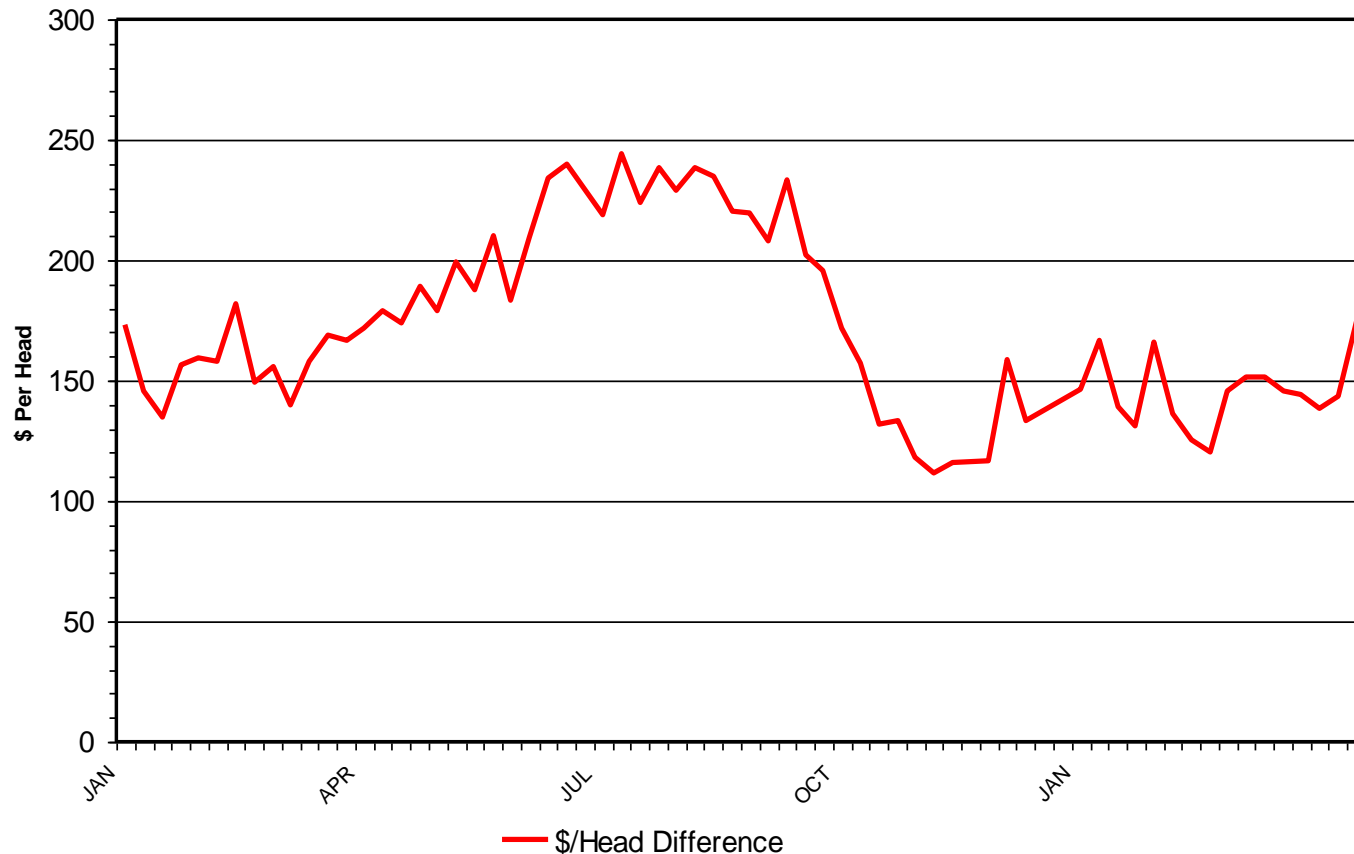
**MED. & LRG. #1 & 2 STEER CALF PRICES**  
400-500 Pounds & 700-800 Pounds, Georgia, Weekly





# Comparison of Calf and Feeder Cattle Values

**MED. & LRG. #1 & 2 STEER CALF PRICES**  
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# Considerations for Adding Weight to Calves

## Upside

- Extends marketing window
- Opportunity to wean early
- Potentially add value

## Downside

- Increases market exposure
- Possibility of death loss
- Additional land/facility requirements
- Additional management



# When is RO Profitable?

ITEM	Total Dollars
Final Value of Feeders (Price X Sales Weight X Number Sold)	
- Marketing Costs	
Net Final Value (NFV)	
Initial Value of Calves (Price X Sales Weight X Number Sold)	
- Marketing Costs	
Net Beginning Value (NBV)	
<b>Additional Costs</b>	
Pasture (seed, fertilizer, fuel, etc.)	
Feed	
Hay	
Vet & mineral (implants, vaccines, etc.)	
Repairs	
Additional labor	
Land rent	
<b>TOTAL ADDITIONAL COSTS (TAC)</b>	
<b>Profits (NFV-NBV-TAC)</b>	



# Three Numbers to Know Considering Retaining Ownership

- Cost of Gain – COG
- Value of Gain – VOG
- Breakeven Price – BE





# What is COG of Gain (GOG)?

COG is the cost of putting the additional weight on the animal **excluding** the initial value of the animal. Usually expressed as \$/Cwt.

$$\text{COG} = \frac{\text{Total cost of adding weight}}{\text{Pounds of additional gain}}$$



# Example

## Base

- 100 calves May weighing 450 pounds
- Sales price = \$100/Cwt.

## Alternative

- Marketed in September weighing 750 pounds.
- Sales price = \$79.00/Cwt.
- 2% death loss.
- Cost = \$180/head placed





# COG

$$\text{COG} = \frac{100 \text{ hd @ } \$180/\text{hd}}{\text{Poundsof additionalgain}}$$

$$\text{COG} = \frac{\$18,000}{98 \text{ hd @ } 750\# - 100 \text{ hd @ } 450\#} = \frac{\$18,000}{28,500}$$

$$\text{COG} = \$63.16/\text{Cwt} .$$



# What is Value of Gain (VOG)?

VOG is the value of the additional weight placed on the animal. Usually expressed as \$/Cwt.

**VOG is NOT the sales price!!**



# What is Value of Gain (VOG)?

$$\text{VOG} = \frac{\text{Ending Value} - \text{Beginning Value}}{\text{WG}}$$

$$\text{VOG} = \frac{(\text{EW} \times \text{EP}) - (\text{BW} \times \text{BP})}{\text{WG}}$$

Where, EW = ending weight

EP = ending price

BW = beginning weight

BP = beginning price



# What is Value of Gain (VOG)?

$$\text{VOG} = \frac{\text{8 hd @ 750\# x \$79/Cwt} - \text{100 hd @ 450\# x \$100}}{28,500}$$

$$\text{VOG} = \frac{\$58,065 - \$45,000}{28,500} = \$45.61/\text{VOG}$$



So?

COG = \$63.26

VOG = \$45.61

COG > VOG → Do not RO in this situation





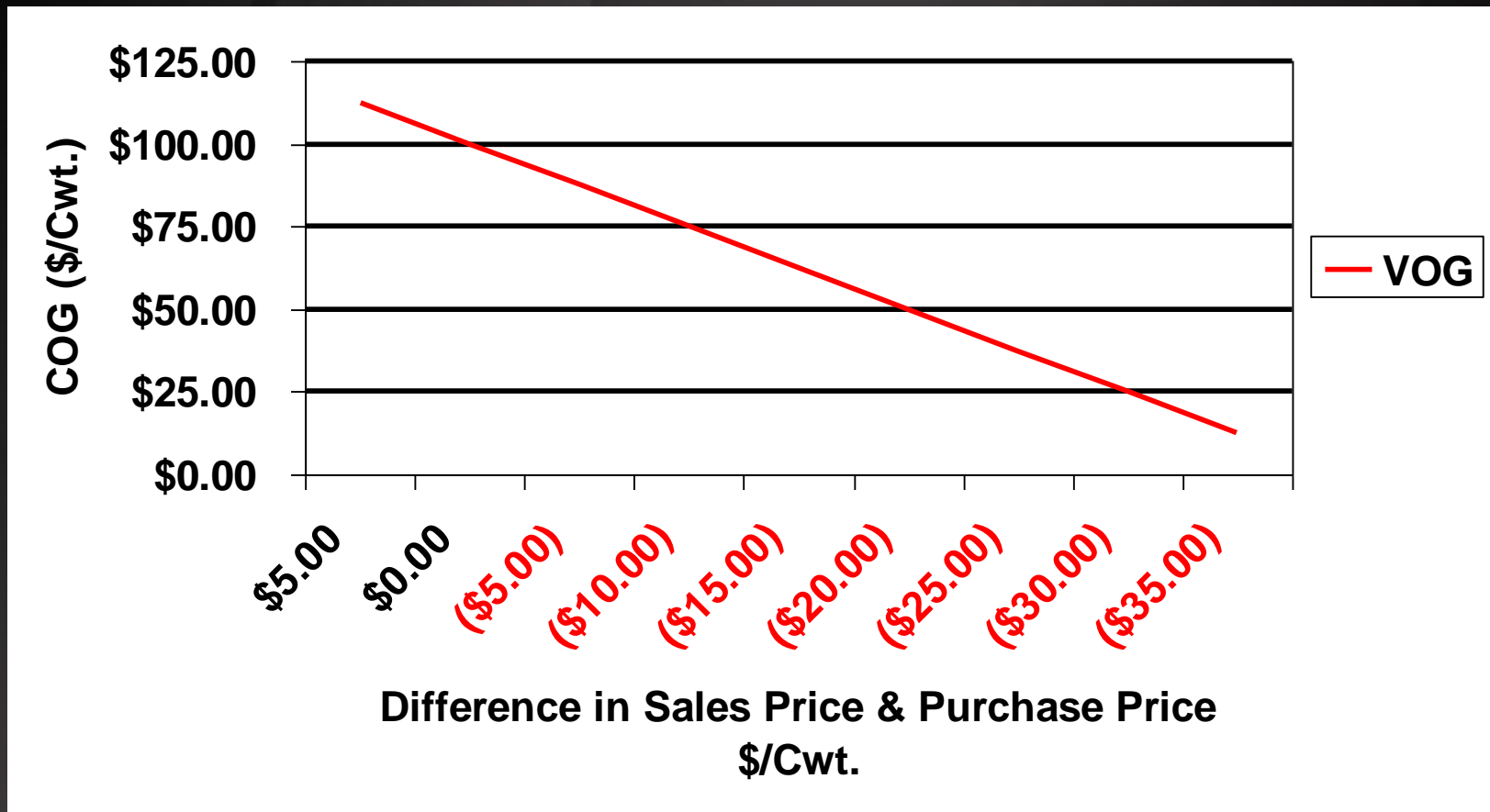
# Major Factors Affecting the Outcome

- Current value
  - Weight
  - Price
- Future Value
  - Weight
  - Price
- Death Loss
- Cost of the additional weight

AKA Opportunity Cost



# Impact of Buy-Sell Margin and COG on RO Decision







# What price do I need?

$$\text{Breakeven sales price} = \frac{\text{Total stockering cost (including calf value)}}{\text{Sales weight}}$$

$$\text{Breakeven sales price} = \frac{\$18,000 + \$45,000}{73,500} = \frac{\$63,000}{73,500}$$

$$\text{Breakeven sales price} = \$85.71$$



## What Price do I Use for Calves?

- Local cash prices
- Adjusted for load lots if necessary
- Remember to also adjust for shrink and marketing cost.

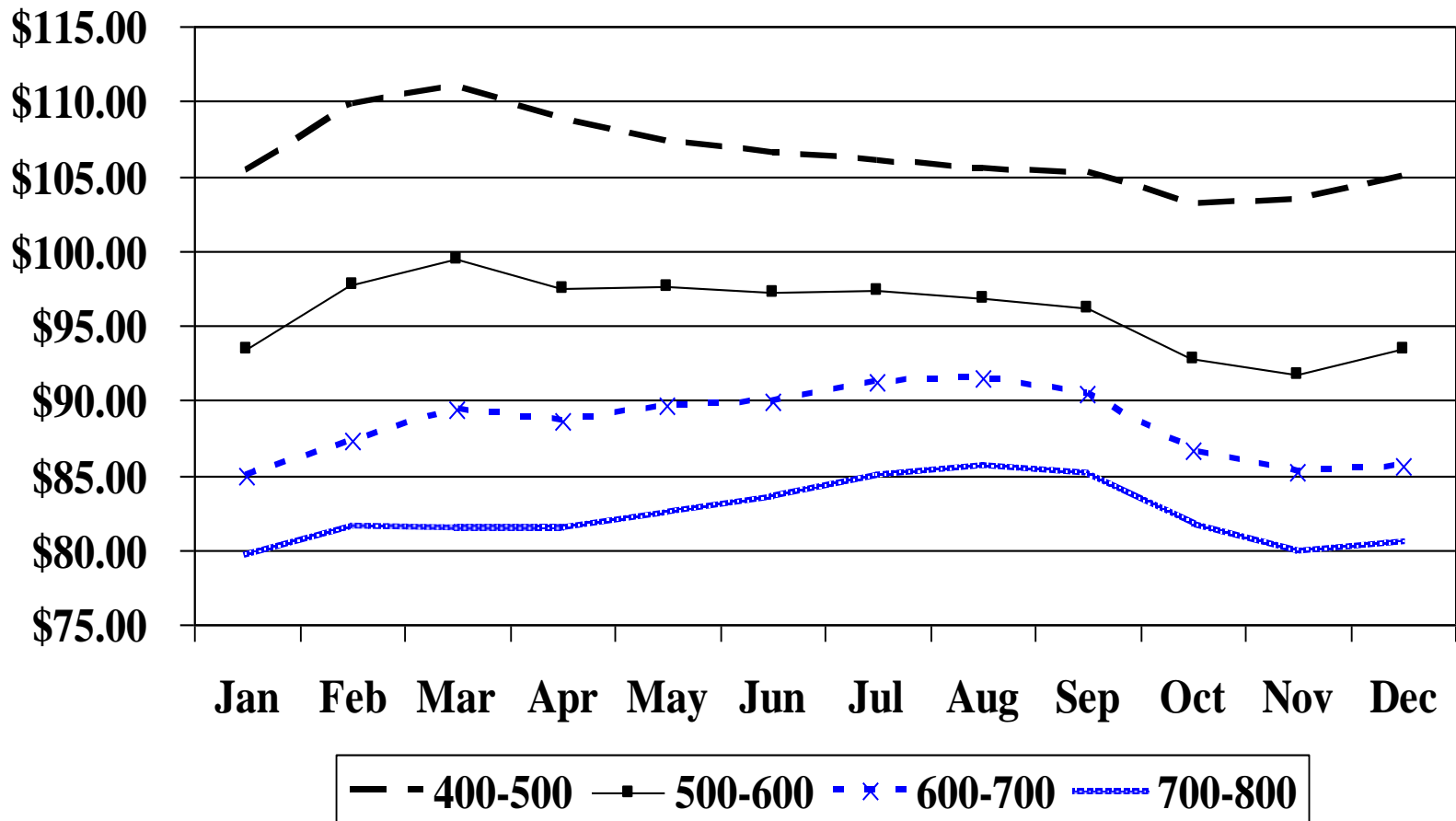


# How Do I Predict Futures Prices

- Seasonal trends



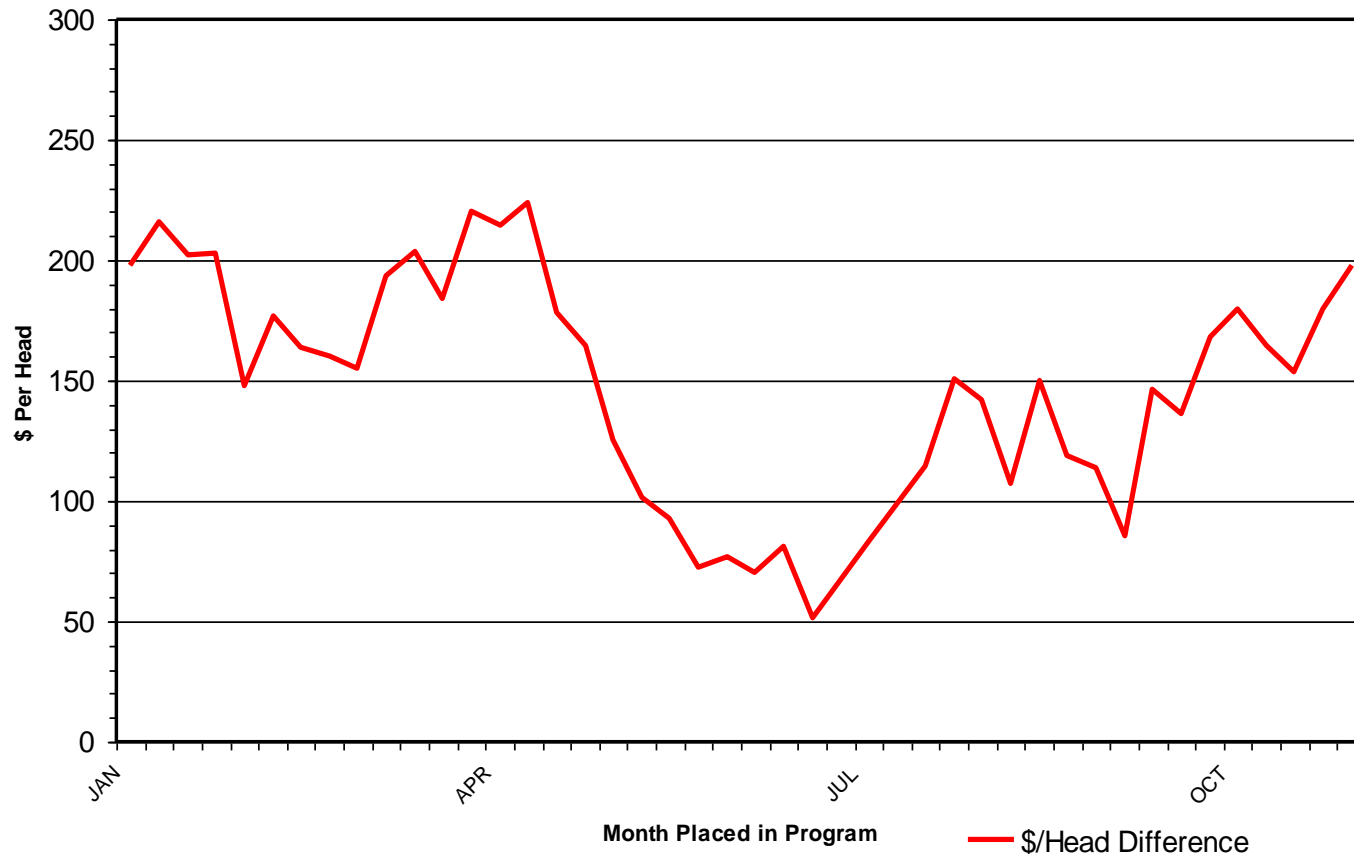
# Different weights follow different seasonal patterns





# Difference in Value at Weaning vs. Value as Feeder

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# How Do I Predict Futures Prices

- Seasonal trends
- Cash contract prices



Superior Livestock Video Auction  
 Feeder Cattle Weighted Average Report for 04/24/2009  
 Offerings: 37,200

Preliminary report as of 4:30 PM Friday April, 24th. The final and complete report will be released Monday April 27th. \*\*PLEASE NOTE: These head counts and prices are subject to change on the final report.

\*\*\*\*\*  
 Eastern States: All states east of the Mississippi  
 Louisiana and Arkansas.  
 \*\*\*\*\*

Feeder Steers Medium and Large 1-2						
Head	Wt Range	Avg Wt	Price Range	Avg Price	Delivery	
52	410	410	114.00	114.00	Current	
85	580	580	101.50	101.50	Current	
73	675-690	682	93.60-98.75	96.25	Current	Part Loads
37	720	720	92.00	92.00	Current	Part Loads
120	825	825	93.60	93.60	Current	
169	850-875	858	89.00-93.50	90.49	Current	
34	940	940	83.50	83.50	Current	Part Loads
100	500	500	110.50	110.50	May	
160	600	600	100.50	100.50	May	
73	670	670	98.00	98.00	May	
32	750	750	93.25	93.25	May	Part Loads
60	825	825	94.10	94.10	May	
30	825	825	91.35	91.35	May	Part Loads
55	850	850	94.00	94.00	May	
87	550	550	94.00	94.00	Jun	
425	600-625	623	88.50-91.25	89.77	Jun	Calves
30	600	600	97.50	97.50	Jun	Part Loads
225	650	650	100.10	100.10	Jun	
45	700	700	94.85	94.85	Jun	Part Loads
458	750	750	96.50-98.35	98.04	Jun	
479	800-840	821	92.75-95.50	94.22	Jun	
208	450-475	462	100.00-104.75	102.38	Jul	
97	500	500	98.00	98.00	Jul	
88	550	550	94.00	94.00	Jul	
120	800	800	95.10	95.10	Jul	
107	450	450	101.25	101.25	Aug	
54	450	450	99.00	99.00	Aug	Part Loads
501	550-590	570	92.00-95.00	94.07	Aug	
44	570	570	94.50	94.50	Aug	Part Loads
154	625	625	84.50-86.50	85.50	Aug	
30	625	625	86.00	86.00	Aug	Calves
47	525	525	88.00	88.00	Sep	Part Loads
79	615	615	89.50	89.50	Sep	

Source: USDA-MO Dept of Ag Market News Service,  
 Corbitt Wall/Greg Harrison, Market Reporters 816-238-0678  
 24 Hour Market Report 1-573-522-9244  
[www.ams.usda.gov/mnreports/AM\\_LS753.txt](http://www.ams.usda.gov/mnreports/AM_LS753.txt)



# How Do I Predict Futures Prices

- Seasonal trends
- Cash contract prices
- Futures based prices





## Feeder Cattle Basis Forecast

State: Florida	Location: Ocala	Date: 9/30/2009
Sex: Steer	Frame: Lg & Med/Lg	Class: 1-2
Weight: 750 lbs/head	Head: 98	
Feeder Cattle Futures Price: 100.25 \$/cwt	Live Cattle Futures Price: 86.2 \$/cwt	Corn Futures Price: 4.02 \$/bu
Reference Contract: Oct 2009 Transaction Date: Apr 27, 2009	Reference Contract: Oct 2009 Transaction Date: Apr 27, 2009	Reference Contract: Dec 2009 Transaction Date: Apr 27, 2009

Model-estimated feeder cattle basis values (1)	Results
Model-estimated feeder cattle basis, \$/cwt	-21.30
Confidence interval for basis, \$/cwt (3)	-22.48 to -20.12
Expected cash price, \$/cwt	78.95
Confidence interval for expected cash price, \$/cwt (3)	77.77 to 80.13
Optimal hedge ratio (4)	0.7541
Number of calves hedged per contract (5)	88

Feeder Cattle Model											
C	3.22	-17.19	-17.68	-18.17	-18.66	-19.15	-19.64	-20.14	-20.63	-21.12	
O	3.42	-17.72	-18.21	-18.71	-19.20	-19.69	-20.18	-20.67	-21.16	-21.66	
R	3.62	-18.26	-18.75	-19.24	-19.73	-20.22	-20.72	-21.21	-21.70	-22.19	
N	3.82	-18.79	-19.28	-19.78	-20.27	-20.76	-21.25	-21.74	-22.24	-22.73	
	4.02	-19.33	-19.82	-20.31	-20.80	-21.30	-21.79	-22.28	-22.77	-23.26	
	4.22	-19.86	-20.36	-20.85	-21.34	-21.83	-22.32	-22.82	-23.31	-23.80	
	4.42	-20.40	-20.89	-21.38	-21.88	-22.37	-22.86	-23.35	-23.84	-24.33	
	4.62	-20.94	-21.43	-21.92	-22.41	-22.90	-23.39	-23.89	-24.38	-24.87	
\$/Bu	4.82	-21.47	-21.96	-22.46	-22.95	-23.44	-23.93	-24.42	-24.91	-25.41	
		92.25	94.25	96.25	98.25	100.25	102.25	104.25	106.25	108.25	
		Feeder Cattle \$/Cwt									

- (1) Model-estimated feeder cattle basis is based on the current Chicago Mercantile Exchange (CME) feeder cattle contract specifications.  
 (2) The basis forecasting model is based on nearby feeder cattle and corn futures price and other variables.  
 (3) Confidence interval represents the range actual basis and expected cash price is expected to fall in 68% of the time.  
 (4) For additional information and explanation, please see the About Forecasting page.  
 (5) The number of calves hedged per contract for the Feeder Cattle - Based Model is based on the 50,000 pound feeder cattle contract.





# Summary

- Making the decision to add weight is a little more involved than many people realize.
- Key items are:
  - VOG
  - COG
  - Breakeven price
  - Death loss
- Cattlemen can use local prices adjusted for their situation to assign calf values.
- Seasonal trends, cash contract prices or futures based prices can be used to estimate expected sales prices.



# UGA MARKETING ALTERNATIVES CALCULATOR

Number of head	100		
	Base Alternative - Sell 500# Weaned Calf	Alternative 1 - 45 d Background	Alternative 2 - 60 d Background
Ranch Weight	525	615	635
Market Shrink	8.00%	0.00%	0.00%
Pencil Shrink	0.00%	2.00%	2.00%
Net Sales Weight (lbs.)	483.00	602.70	622.30
Sales Price (\$/Cwt.)	\$ 95.00	\$ 105.00	\$ 105.00
Gross Revenue	\$ 458.85	\$ 632.84	\$ 653.42
Sales Commission (percentage of gross)	4.00%	2.00%	2.00%
Yardage (\$/head)	\$ -	\$ -	\$ -
Other Marketing Fees - (\$/head for checkoff and other marketing expenses)	\$ 1.00	\$ 1.00	\$ 1.00
Transportation & Hauling (\$/head)	\$ 1.25	\$ -	\$ -
Total Transactions Cost (\$/head)	\$ 20.60	\$ 13.66	\$ 14.07
Additional production cost (preconditioning, etc) (\$/head)		\$ 130.00	\$ 140.00
Death Loss %		1%	1%
Total Additional Pounds		8,385.00	10,365.00
Total Cost Including Opportunity Cost and Death Loss		\$ 58,778.05	\$ 59,829.73
Total Dollars Received	\$ 43,824.60	\$ 62,650.67	\$ 64,688.09
Alternative advantage compared to base		\$ 3,872.61	\$ 4,858.36
Net Dollars Received Per Head	\$ 438.25	\$ 489.18	\$ 499.35
Dollars/head advantage		\$ 38.73	\$ 48.58
Breakeven Sales Price		\$ 98.51	\$ 97.11
Breakeven Cost per Head		\$ 188.26	\$ 208.63



[www.ces.uga.edu/Agriculture/agecon/agecon.html](http://www.ces.uga.edu/Agriculture/agecon/agecon.html)



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