Lessons Learned From 27 Years of Retained Ownership – Tri-County Steer Carcass Futurity

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TCSCF Program – 27 Years

- Brief history
- Producing a more consistent product
- Profit differences
- Sire differences
- Factors impacting quality grades
- SE vs. MW Cattle
- Impact of disposition
- Impact of health

Tri-County Steer Carcass Futurity (TCSCF)

- First year 35 consignors - 106 steers
- What is the most profitable steer in the feedlot?
- Last 10 years, 66,620 steers and heifers from Iowa, South Carolina, Indiana, Georgia, Virginia, Alabama, Illinois, Kentucky, Mississippi, Tennessee, Minnesota, Florida, West Virginia, North Carolina, Missouri, Nebraska and Manitoba
- Ten member board has oversight of cattle fed at 10 different feedlots

Profit for Cow Calf Producers in the TCSCF Program for Steers and Heifers Marketed from July 1, 2000 to June 30, 2009

How well have we done?

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	All
No of Hd	4,445	4,645	5,341	8,713	5,844	4,310	6,972	7,401	9,842	9,107	66,620
Ave Profit	$66.24	$19.82	$51.38	$69.91	$63.04	$87.59	$18.08	$28.51	$-1.92	$4.95	$35.71
Total Profit	$294,436	$92,064	$274,420	$609,125	$368,406	$377,513	$126,054	$210,523	$-18,869	$45,026	$2,379,205

TRI-COUNTY STEER CARCASS FUTURITY

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Beef Carcass Traits and Trends for S.W. Area Steer Tests

Trait	Years					
	1		2 - 3		4+	
	N = 53	S.D.	N = 63	S.D.	N = 61	S.D.
Test Weight, lbs.	740	102	743	70	738	54
Final Weight, lbs.	1,196	108	1,231	67	1,240	47
Hot Carcass Weight, lbs.	735	72	757	43	761	29
Average Daily Gain, lbs.	2.98	.62	3.14	.36	3.25	.24
Fat Thickness, in.	0.34	.13	0.36	.08	0.36	.07
Ribeye Area, sq. in.	13.14	1.49	13.56	.79	13.44	.61
USDA Yield Grade	2.33	.62	2.37	.39	2.41	.33
Quality Grade	9.61	.87	9.69	.58	9.73	.36

TRI-COUNTY STEER CARCASS FUTURITY

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2008-09 TCSCF
Profit Comparison of 5,828 Steers

Profit Group	High 1/3	Low 1/3	Average
No. of Head	1,942	1,942	5,828
Delivery Wt.	713	718	710
Final Wt.	1,257	1,225	1,236
ADG	3.51	3.27	3.39
Days on Feed	156	153	156
Age at Harvest	470	458	461
% Not Treated	90%	71%	81%
% Death Loss	0.0%	3.8%	1.3%

TRI-COUNTY STEER CARCASS FUTURITY

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2008-09 TCSCF
Profit Comparison of 5,828 Steers

Profit Group	High 1/3	Low 1/3	Average
Hot Carcass Wt.	778	751	760
Fat Cover	.43	.45	.45
Yield Grade 1 & 2's	65%	55%	59%
Yield Grade 4 & 5's	0.5%	5.1%	2.1%
% Choice/Prime	72%	48%	61%
% CAB	10%	3%	7%
Carcass Price $/cwt	$142.53	$135.18	$139.14
Age Verified Prem. $/Hd	$23.74	$22.02	$23.09
Carcass Value	$1,134	$994	$1,067

TRI-COUNTY STEER CARCASS FUTURITY

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2008-09 TCSCF
Profit Comparison of 5,828 Steers

Profit Group	High 1/3	Low 1/3	Average
Feed Cost/cwt Gain	$59.04	$66.71	$62.26
Nonfeed Cost/cwt Gain	$16.48	$21.40	$18.53
Total Cost/cwt of Gain	$75.52	$88.11	$80.79
Market Value/cwt	$85.32	$96.48	$90.65
Calf Value	$600	$688	$637
Profit	$99.21	$-154.00	$-15.96
BE Feeder Calf Value $/cwt	$99.93	$78.43	$90.05

TRI-COUNTY STEER CARCASS FUTURITY

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2008-09 TCSCF
Profit Comparison of 5,828 Steers

- Similar delivery weights
- The high profit group had a lower($85.32) market price/cwt /cwt on delivery than the low profit group ($96.48/cwt)
- High profit gain faster (3.51 vs. 3.27)
- Higher % Low Choice or better (72% vs. 48%) with similar carcass composition
- Profit difference between profit groups $253.21/head

2008-09 TCSCF
Profit Comparison of 3,281 Heifers

Profit Group	High 1/3	Low 1/3	Average
No. of Head	1,093	1,092	3,281
Delivery Wt.	685	673	677
Final Wt.	1,189	1,101	1,141
ADG	3.30	2.81	3.05
Days on Feed	154	152	153
Age at Harvest	501	487	486
% Not Treated	95%	77%	86%
% Pregnant	0.00%	0.73%	0.24%
% Death Loss	0.0%	2.1%	0.7%

TRI-COUNTY STEER CARCASS FUTURITY

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2008-09 TCSCF
Profit Comparison of 3,281 Heifers

Profit Group	High 1/3	Low 1/3	Average
Hot Carcass Wt.	737	684	707
Fat Cover	.48	.48	.48
Yield Grade 1 & 2's	50%	45%	49%
Yield Grade 4 & 5's	2.6%	11.2%	5.6%
% Choice/Prime	79%	60%	70%
% CAB	17%	6%	11%
Carcass Price $/cwt	$146.18	$135.81	$141.10
Age Verified Prem. $/Hd	$22.12	$22.77	$21.30
Carcass Value	$1,100	$907	$1,003

TRI-COUNTY STEER CARCASS FUTURITY

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2008-09 TCSCF
Profit Comparison of 3,281 Heifers

Profit Group	High 1/3	Low 1/3	Average
Feed Cost/cwt Gain	$60.87	$71.80	$65.08
Nonfeed Cost/cwt Gain	$17.29	$24.30	$20.44
Total Cost/cwt of Gain	$78.16	$96.10	$85.52
Market Value/cwt	$78.13	$85.54	$82.14
Calf Value	$529	$571	$551
Profit	$165.94	$-91.69	$42.13
BE Feeder Calf Value $/cwt	$103.63	$74.21	$89.98

TRI-COUNTY STEER CARCASS FUTURITY

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2008-09 TCSCF
Profit Comparison of 3,281 Heifers

- Similar delivery weights
- The high profit group had a lower($78.13) market price/cwt /cwt on delivery than the low profit group ($85.54/cwt)
- High profit gain faster (3.30 vs. 2.81)
- Higher % Low Choice or better (79% vs. 60%) with similar carcass composition
- Profit difference between profit groups $257.63/head

How often do we see profit differences like 2009?

Comparison of top and bottom profit 1/3 steer groups from 2003-09 TCSCF

Profit Group	High 1/3	Low 1/3	High 1/3	Low 1/3	High 1/3	Low 1/3	High 1/3	Low 1/3	High 1/3	Low 1/3	High 1/3	Low 1/3
Year	03-04	03-04	04-05	04-05	05-06	05-06	06-07	06-07	07-08	07-08	08-09	08-09
ADG	3.44	3.18	3.73	3.17	3.58	3.14	3.25	3.03	3.51	2.91	3.51	3.27
% Choice	84%	50%	94%	59%	92%	41%	78%	40%	59%	36%	72%	48%
% CAB	31%	9%	32%	9%	33%	4%	12%	4%	10%	5%	10%	3%
Profit $/hd	$189	$-74	$225	$-46	$152	$-134	$143	$-112	$100	$-143	$99	$-154
Difference $/Hd	$264		$272		$287		$256		$243		$253	

TRI-COUNTY STEER CARCASS FUTURITY

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What about sire groups? Do we see this type of profit difference?

2008 Sire Profit Comparison – 6th Year

2008 Sire Profit Comparison – 6th Year

- 908 sires identified with 5 or more progeny representing 17 breeds
- Over 31,750 progeny
- Difference between top 25% sire to bottom 25% sire was $149/head
- If sire produces 15 steers/year for 4 years difference between top 25% and bottom 25% would be $8,940
- Main factors
  - More carcass weight to sell – faster gaining
  - Quality grade
  - Healthier
  - Gross carcass revenue

TCSCF Correlations with Lifetime Profit

2008 TCSCF Sire Summary 908 sires 31,750 progeny

Trait	Correlation	Profit increases when
Carcass weight	.46	Heavier carcass
Low Choice or better	.40	Higher % Choice
Final Weight	.38	Produces heavier carcasses
Ribeye Area	.38	Ribeyes are bigger
Delivery wt	.37	Heavier delivery wt
Marbling score	.35	Increases % Choice
Dressing percent	.31	Heavier carcass weight
Calf value	-.27	Lower initial cost
Average daily gain	.21	Higher daily gain
Health treatment cost	-.21	Fewer health treatments
Fat cover	-.08	Less fat cover

2008 TCSCF
Sire Profit Comparison of 908 Sires

Sire Profit Group	High 1/4	Low 1/4	Average
Delivery Wt.	692	617	646
SPA Calf Value	$525	$484	$500
Adj Final Wt.	1,229	1,143	1,181
Overall ADG	3.42	2.92	3.23
Feed to Gain	6.71	7.21	6.91
No. of ind. Health trt	.12	.37	.23
Ind Health cost	$2.72	$9.12	$5.41
Feed Cost/cwt of gain	$83.84	$90.11	$86.36

2008 TCSCF
Sire Profit Comparison of 908 Sires

Sire Profit Group	High 1/4	Low 1/4	Average
Hot Carcass Wt.	761	699	728
Fat Cover	.44	.47	.45
% low Choice or better	80.3%	49.8%	68.7%
% upper 2/3's Choice or better	24.7%	8.4%	16.7%
Carcass Price $/cwt	$161.15	$153.80	$158.37
Carcass Value	$1,226	$1,078	$1,153
Average Lifetime Profit	$172	$23	$103

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What does it take to make a top 25% sire?

2008 TCSCF

Sire Profit Comparison of 908 Sires

- Varies a great deal from sire to sire
- If horrible in one economically important trait, he is an also ran
- The top sires perform well in many traits
- Gain fast and efficiently, excellent immunity, produce heavier carcasses that are slightly heavier muscled and higher quality grade

Heritability of BRD Resistance
USDA-MARC, Snowder, et al JAS 2005

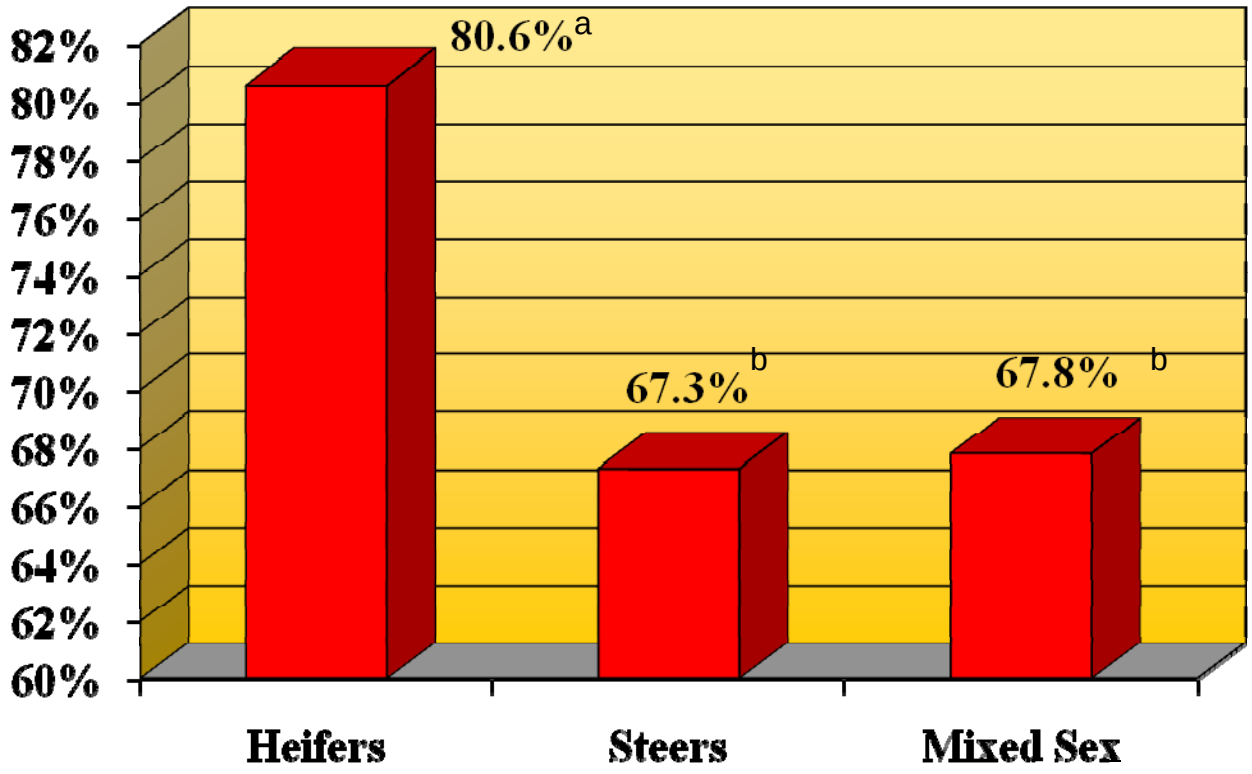
- From 1983 to 2002, 135,158 calves
- BRD while nursing. Average age at weaning was 194 days
- Incidence ranged from 3.3% to 23.6%
- Dams genetically superior for resisting BRD raise calves that are more susceptible
- Overall heritability estimates .07 to .19
- As the annual incidence increased the heritability estimate increased to .48

Factors Affecting % low Choice and % Premium Choice Rates

- n=220 lots of steers, heifers and mixed lots totaling 23,876 head
- Consigned to the Iowa Tri-County Steer Carcass Futurity (TCSCF) from 2003–07
- 15 states represented

  Midwest - Iowa, Missouri, Indiana, Illinois, and Minnesota
  Southeast - Georgia, Virginia, Alabama, South Carolina, Mississippi, Tennessee, Florida, North Carolina, West Virginia and Kentucky
- Minimum 28 day preconditioning period prior to feedlot delivery

Effect of Gender on Lot % low Choice or Better Rate

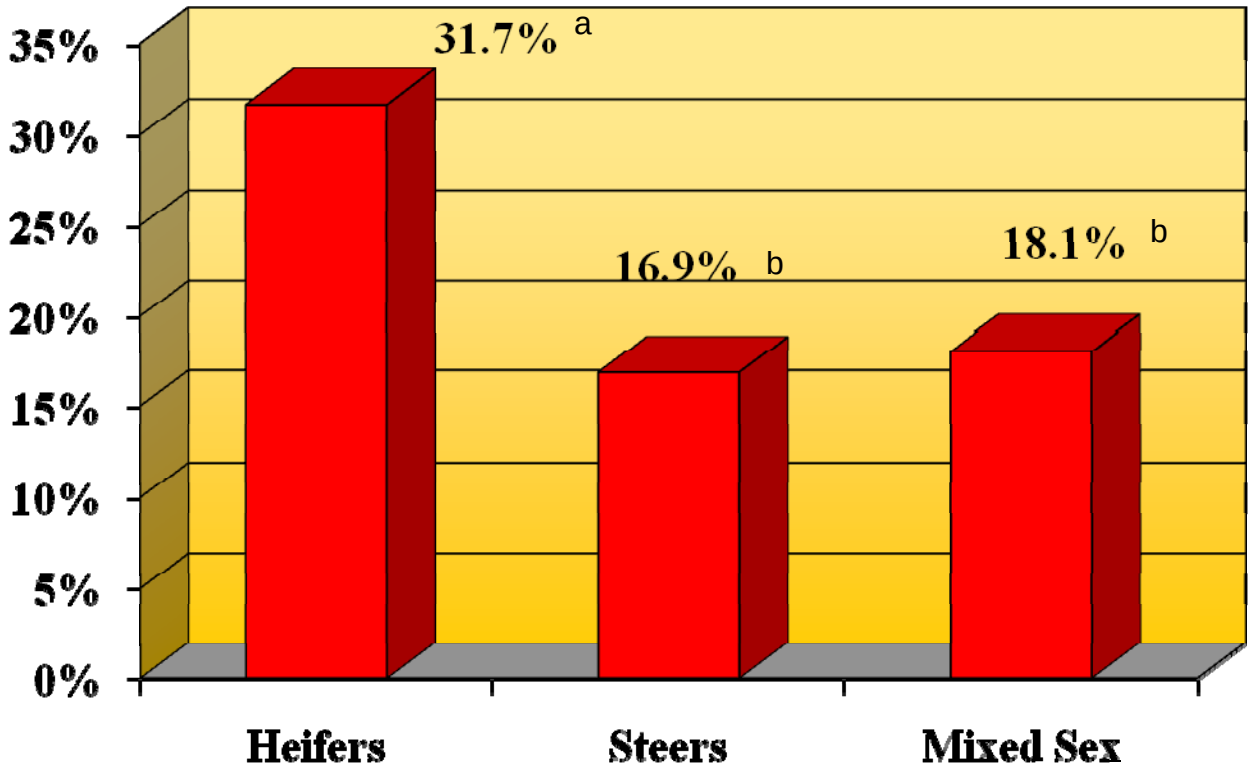


Overall effect
P<0.0001

% Choice

[ab]Means with unlike superscripts differ, P<0.05

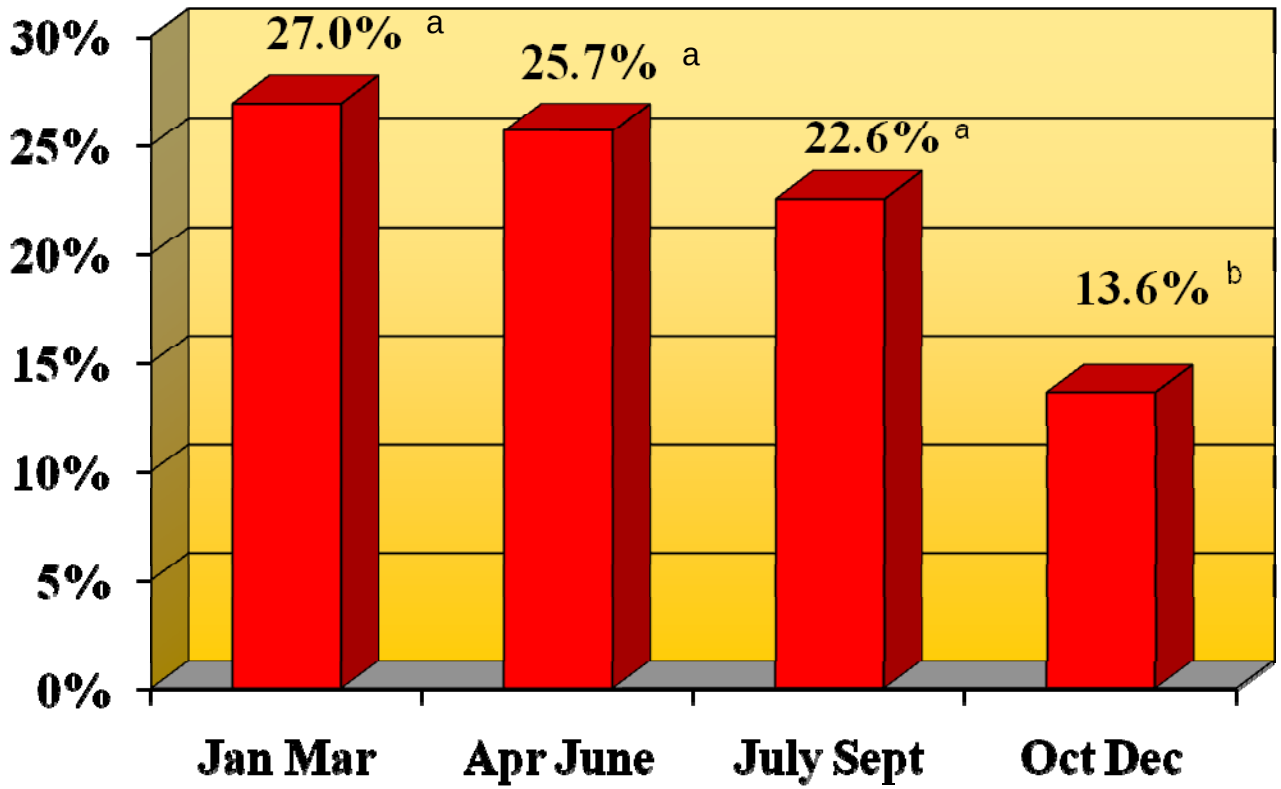
Effect of Gender on Lot CAB® Acceptance Rate



Overall effect
P<0.0001

[ab]Means with unlike superscripts differ, P<0.05

Effect of Season of Harvest on Lot CAB® Acceptance Rate

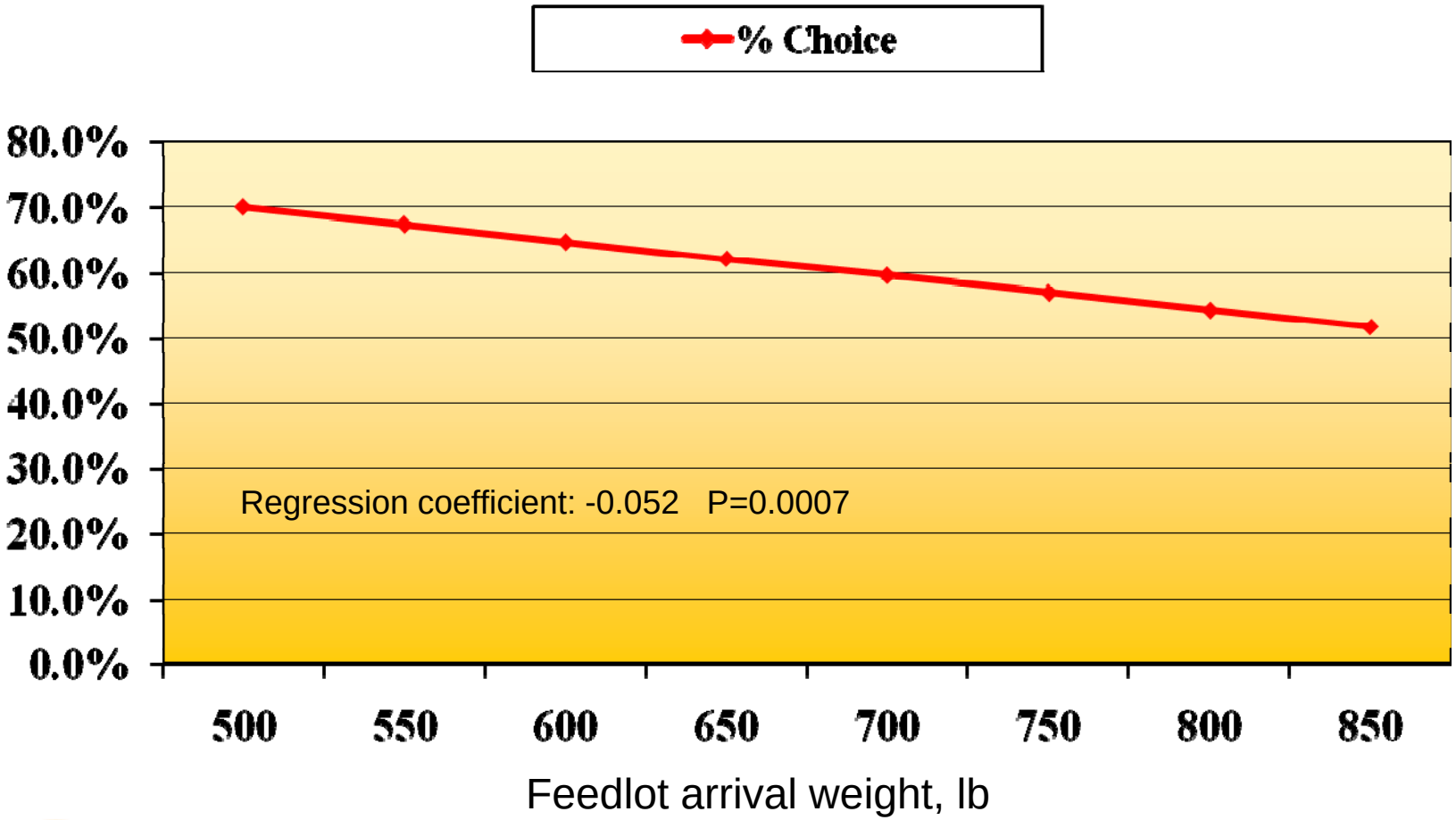


Overall effect
P<0.0001

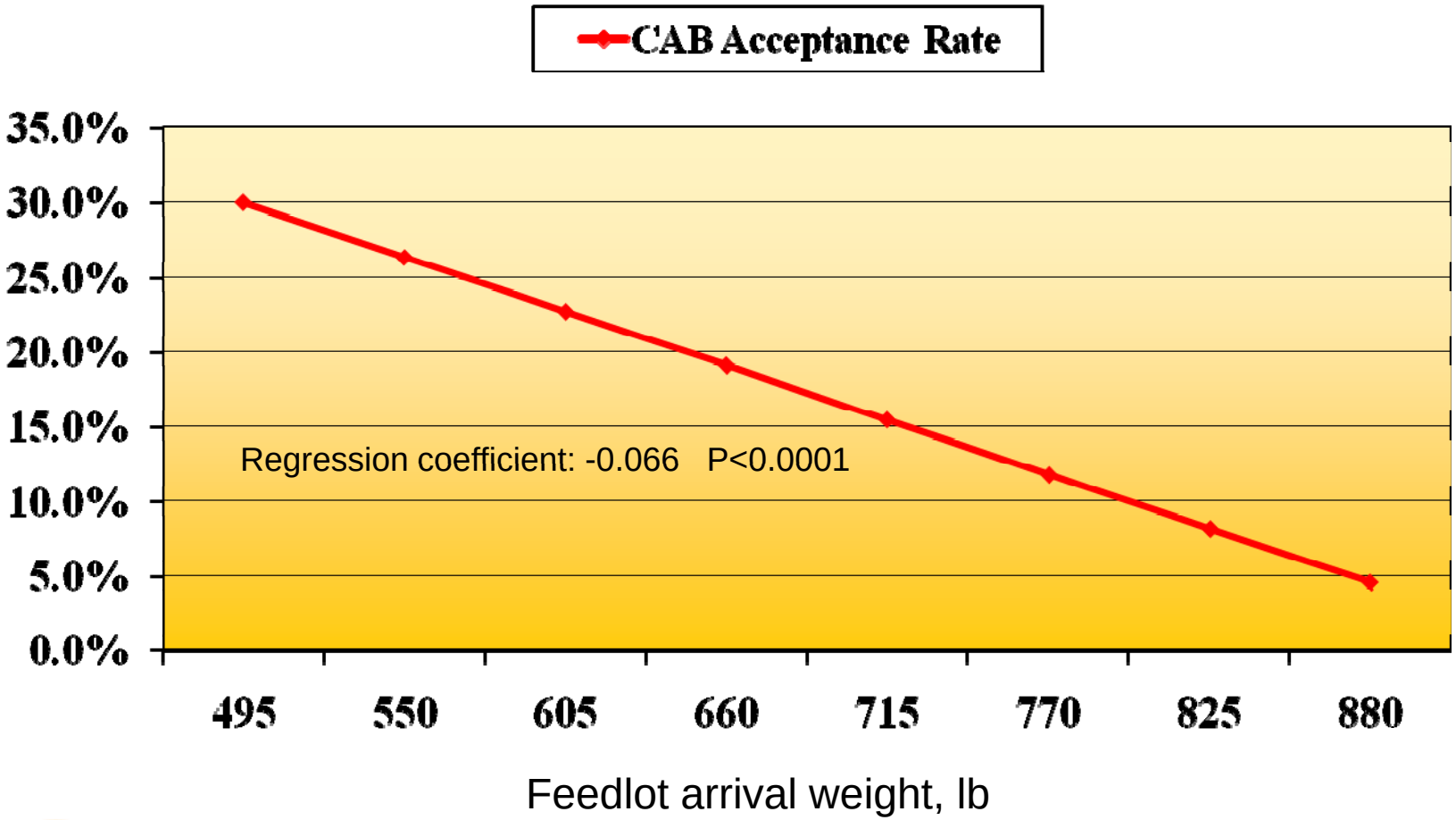
%CAB

[ab]Means with unlike superscripts differ, P<0.05

Effect of Feedlot Arrival Weight on Lot % low Choice or better Rate



Effect of Feedlot Arrival Weight on Lot CAB® Acceptance Rate



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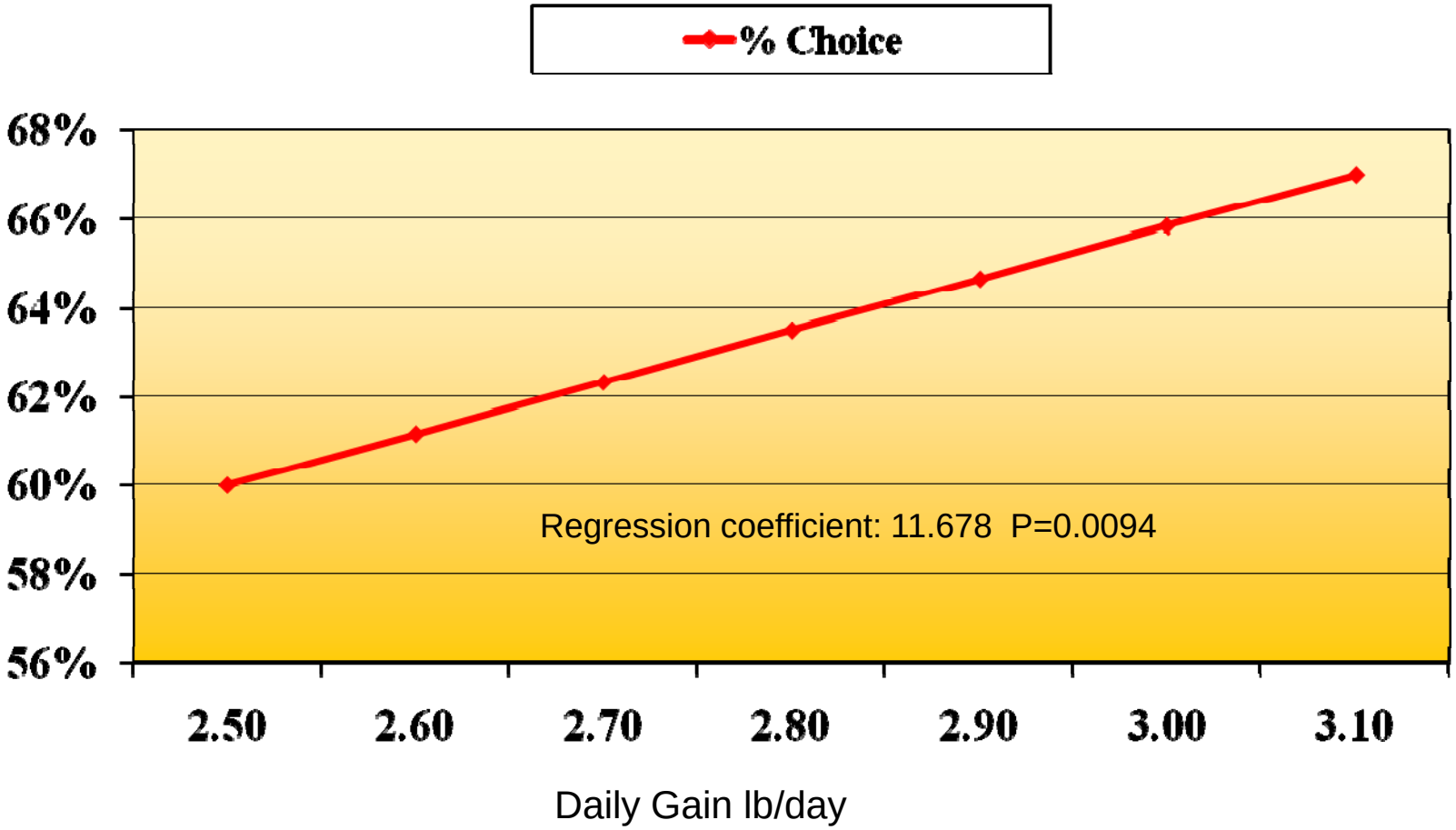
Effect of Daily Gain on Lot % low Choice or better Rate



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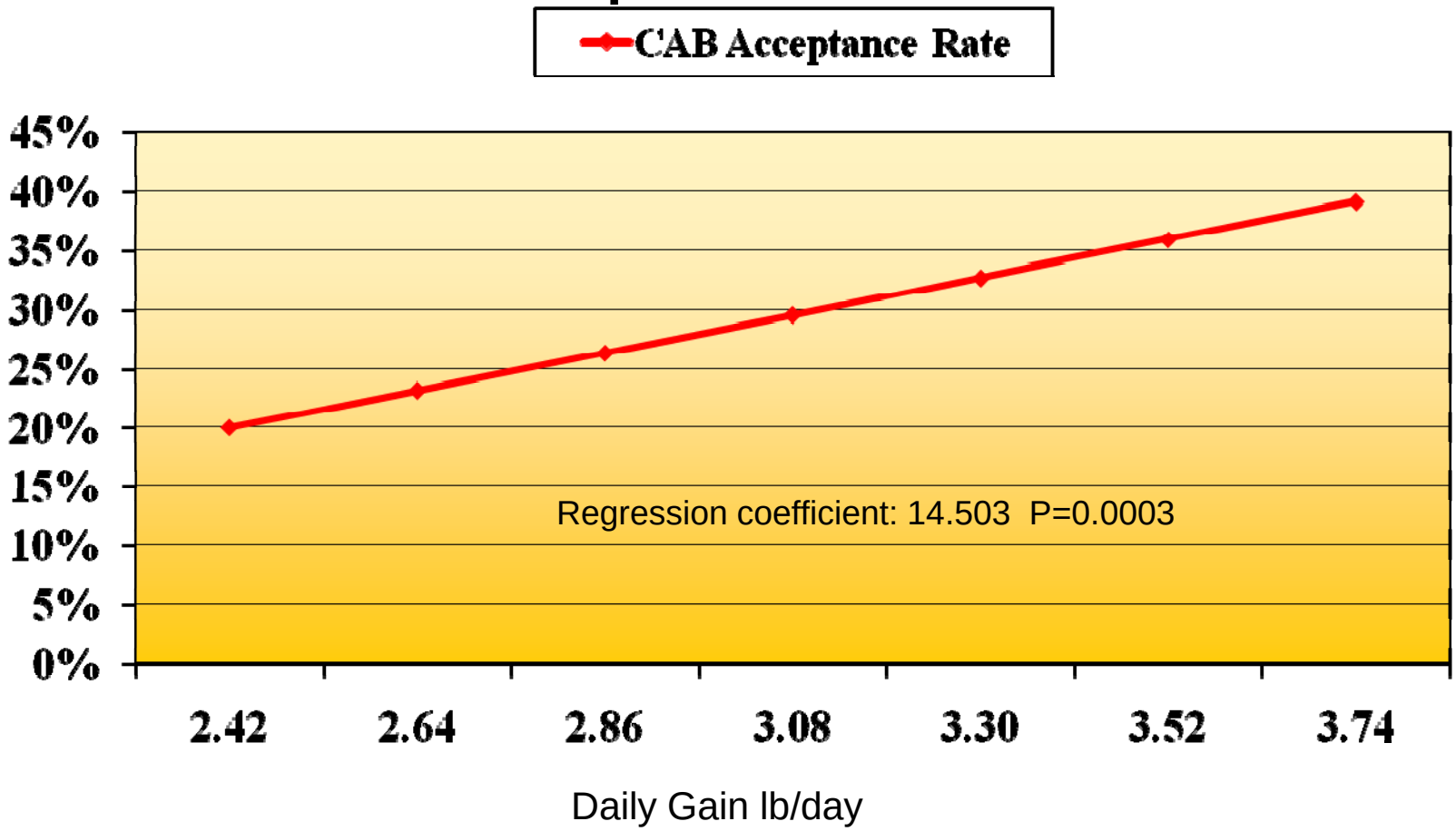
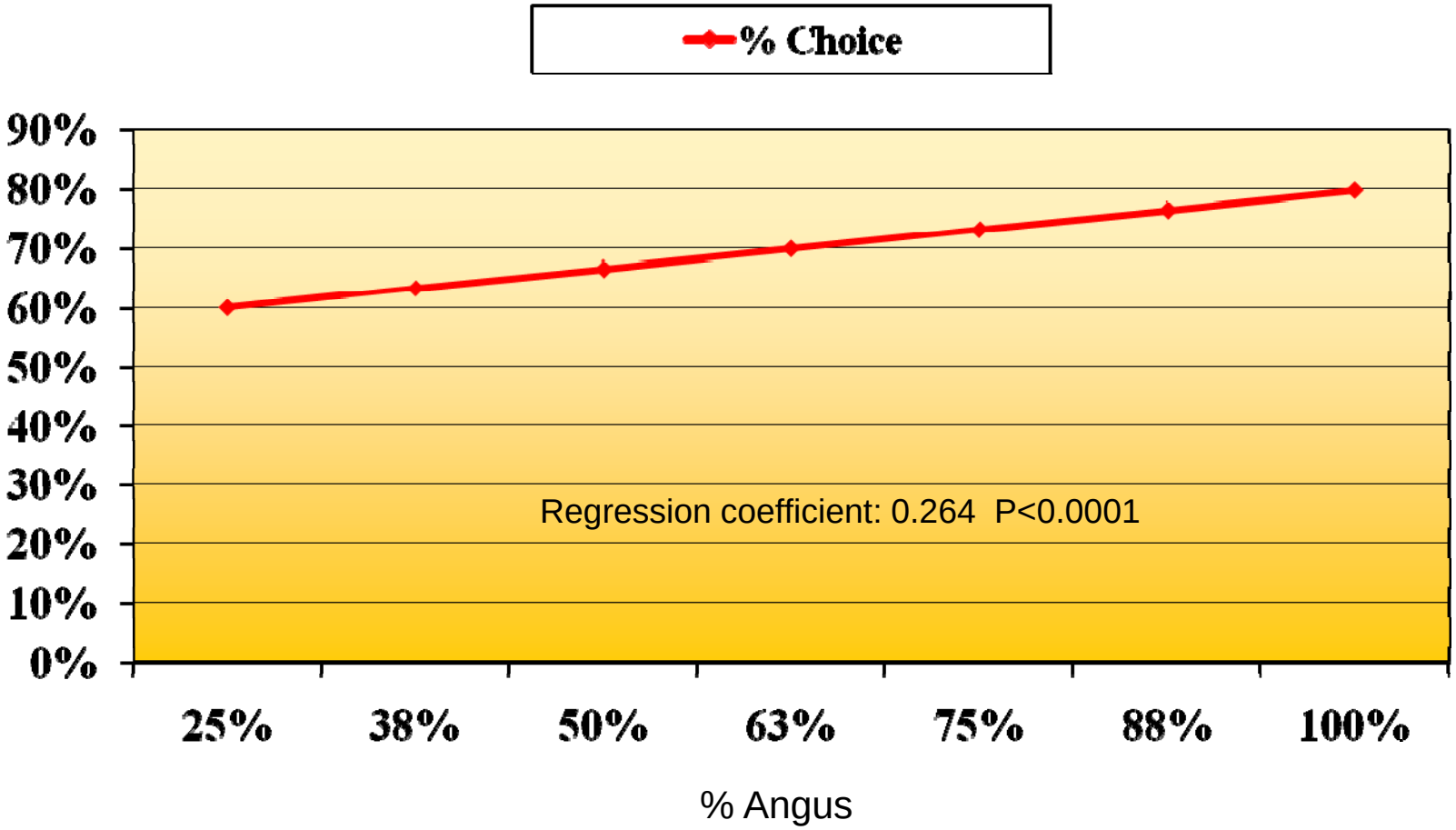
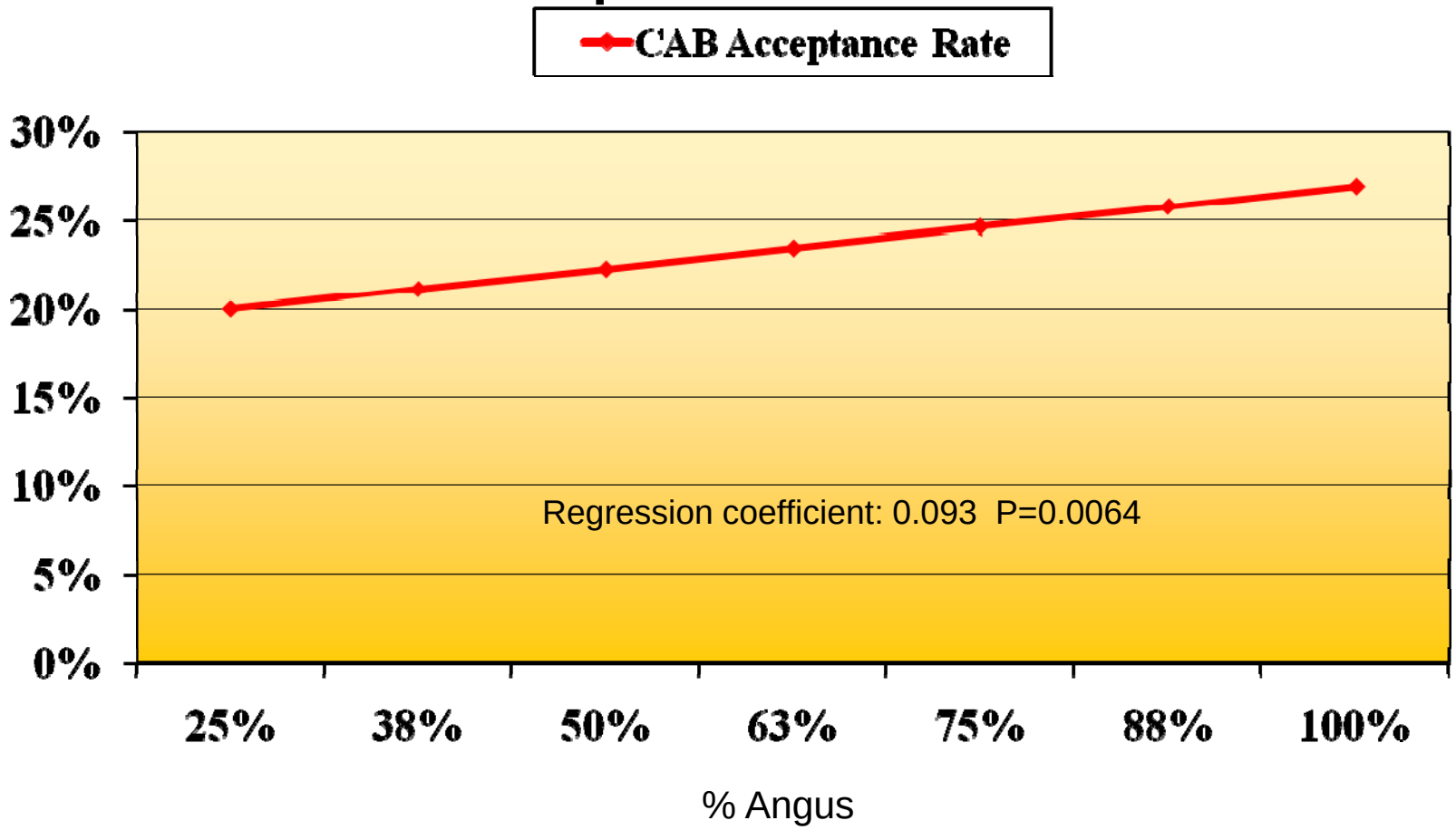
Effect of Daily Gain on Lot CAB® Acceptance Rate



Effect of % Angus on Lot % low Choice or Better Rate



Effect of % Angus on Lot CAB® Acceptance Rate



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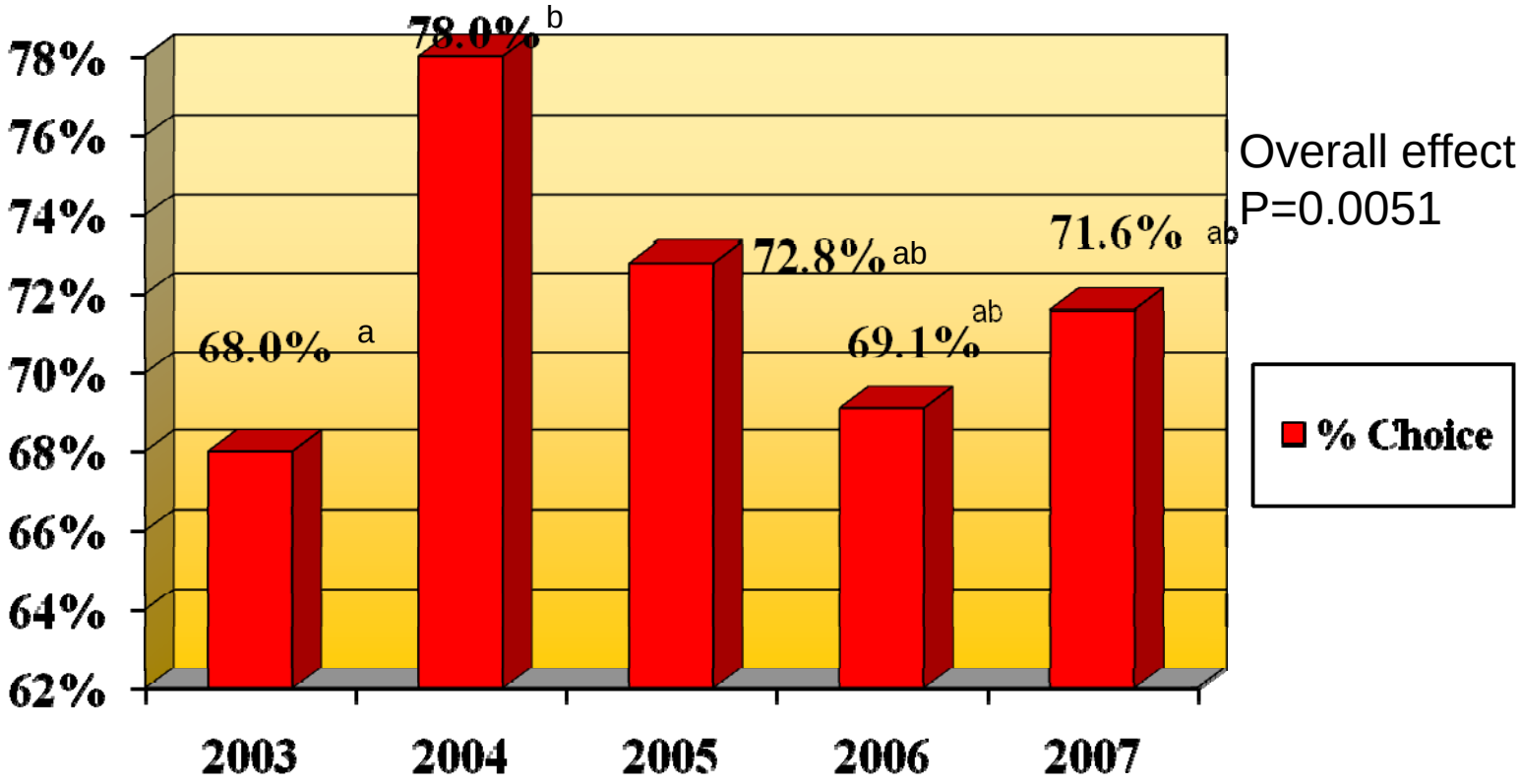
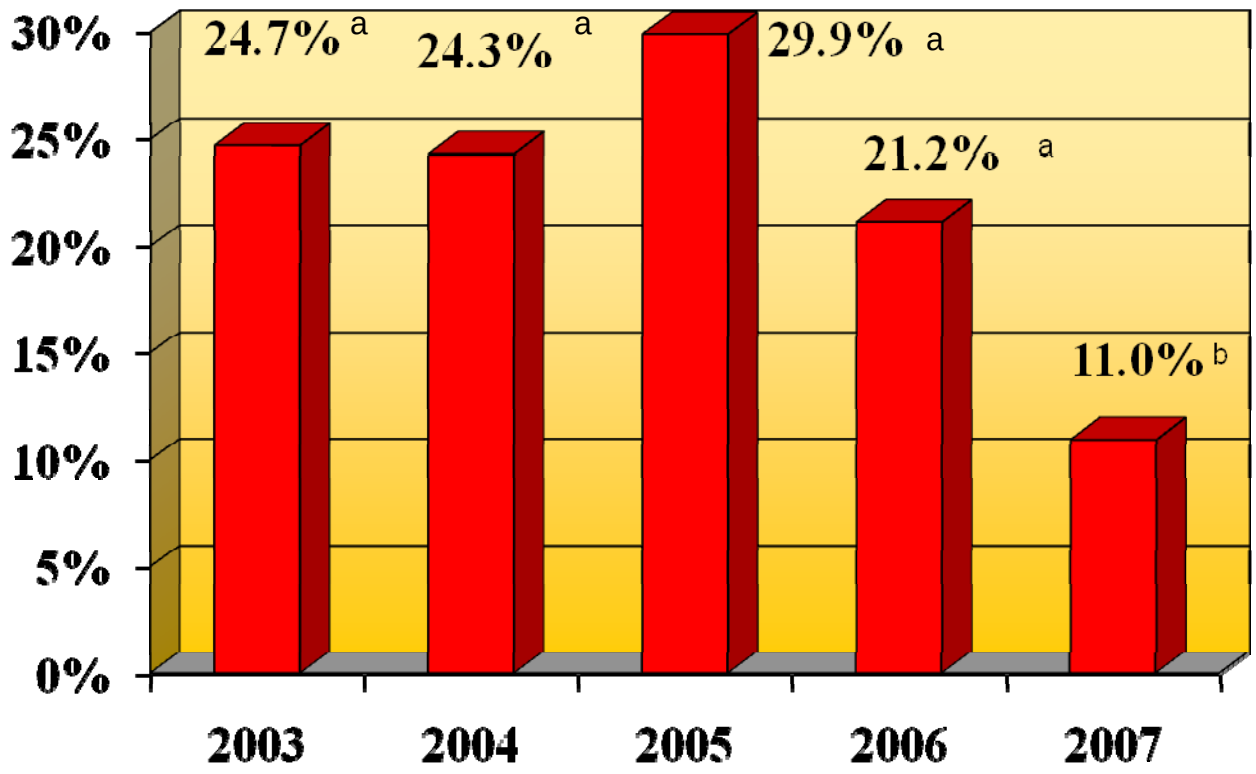
Effect of the Year of Harvest % low Choice or Better Rate



Overall effect P=0.0051

ab Means with unlike superscripts differ, P<0.05

Effect of the Year of Harvest on Lot CAB® Acceptance Rate



Overall effect
P<0.0001

%CAB

[ab] Means with unlike superscripts differ, P<0.05

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Factors That Did Not Have Significant Effect on Lot % low Choice or Better Rates

- Final mud score
- Individual treatment cost per head
- Number of harvest groups
- Days on feed
- Cost of gain
- Lot size
- Geographic region of origin
- Season of harvest
- Adjusted final weight
- Mortality rate

Factors That Did Not Have Significant Effect on Lot CAB® Acceptance Rates

- Final mud score
- Individual treatment cost per head
- Number of harvest groups
- Days on feed
- Cost of gain
- Lot size
- Geographic region of origin
- Average disposition score
- Adjusted final weight
- Mortality rate

SE vs. MW Cattle

- n=27,538 steers and heifers
  - 15 states represented
    - Midwest States - Iowa, Missouri, Indiana, Illinois, and Minnesota
    - Southeast States - Georgia, Virginia, Alabama, South Carolina, Mississippi, Tennessee, Florida, North Carolina, West Virginia and Kentucky
  - Consigned to the Iowa Tri-County Steer Carcass Futurity (TCSCF) from 2002–07
- Minimum 28 day preconditioning period prior to feedlot delivery

Effect of region of origin on ADG, Final Wt, Pulls & Death Loss

Item	Southeast	Midwest
No of Head	18,228	9,310
Arrival Wt, lb	640[a]	628[b]
Delivery Age, days	324.3[a]	252.9[b]
Final Wt, lb	1173[a]	1181[b]
Overall ADG, lb	3.17[a]	3.21[b]
Morbidity Rate	15.22%[c]	20.76%[d]
Treatment Cost, $/hd	$5.01[c]	$7.38[d]
Mortality Rate	1.43%[c]	1.76%[d]

[a b] P<.001 [c d] P<.05

Effect of region of origin on Carcass Traits and Yield Grades

Item	Southeast	Midwest
No of Head	18,228	9,310
Hot Carcass Wt, lb	723 [a]	727 [b]
Fat Cover, in	.44 [a]	.43 [b]
Ribeye Area, sq in	12.2 [a]	12.4 [b]
Calculated Yield Grade	2.84 [a]	2.78 [b]
% Yield Grade 1 & 2	58.57 [a]	63.53 [b]
% Yield Grade 3	39.39 [a]	34.95 [b]
% Yield Grade 4 & 5	2.04 [c]	1.52 [d]

[a b] $P<.001$ [c d] $P<.05$

Effect of region of origin on Quality Grade

Item	Southeast	Midwest
No of Head	18,228	9,310
% Prime	1.14%	1.01%
% Choice	67.94%	69.28%
% Select	28.33%	27.22%
% Standard	2.59%	2.48%
% CAB	21.57% [a]	19.02% [b]

[a b] P<.001

Effect of region of origin on profit

Item	Southeast	Midwest
No of Head	18,228	9,310
Profit $/Hd	$48.63 [a]	$37.31 [b]

[a b] P<.001

- Market value at home determined by USDA AMS Market Reporter

- Trucking bill charged to each calf based on feedlot arrival weight

- Value of dead cattle and expenses included in profit analysis

Summary

In 27,538 calves originating from 15 states fed in 10 southwest Iowa feedlots

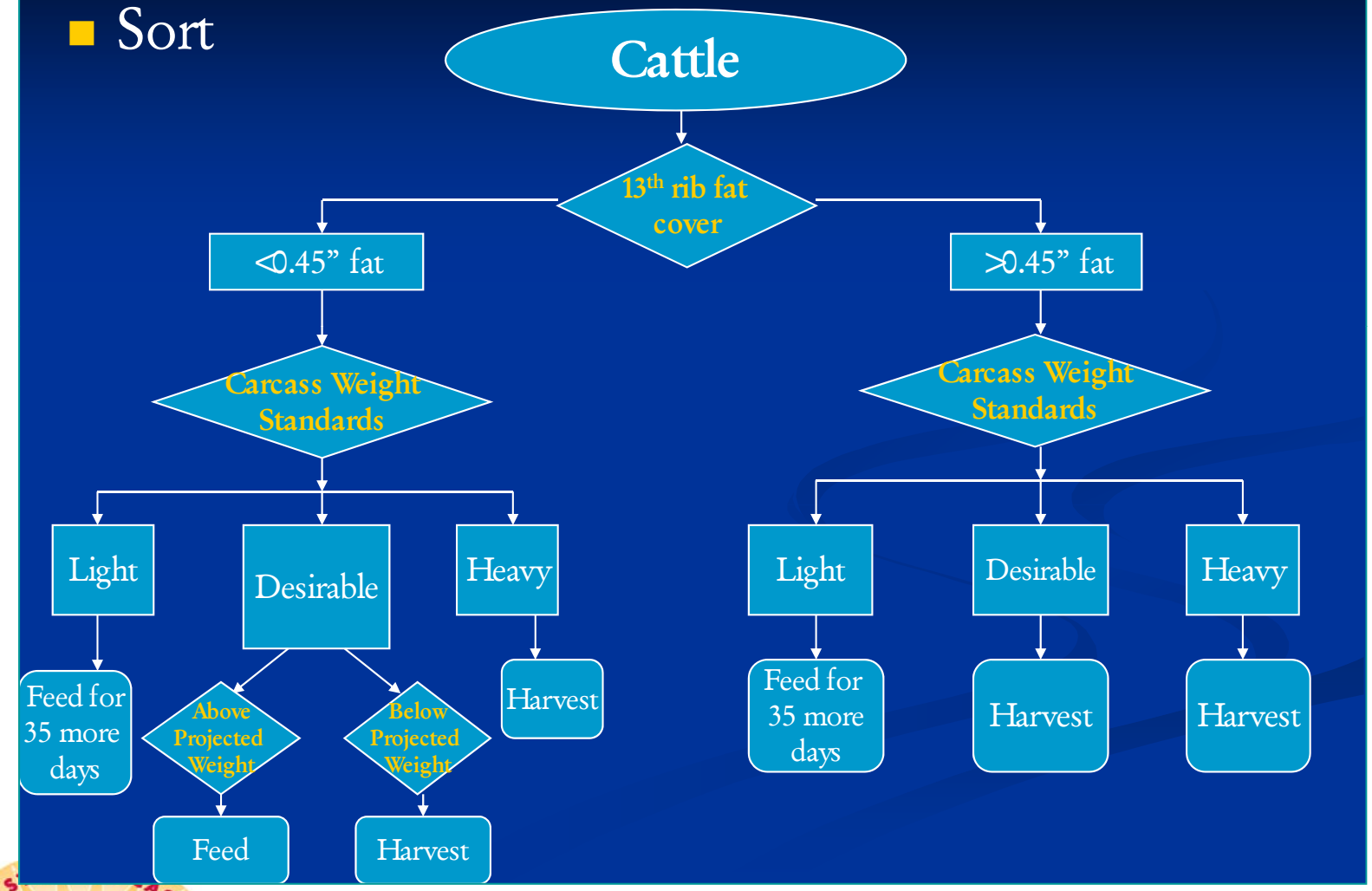
- SE calves compared to MW calves were:
  1. Heavier on delivery to feedlot – 11 lb.
  2. Older on delivery to feedlot – 71.4 days of age.
  3. Health treatments were 5.54% less.
  4. % Choice or better was not different.
  5. CAB acceptance was greater by 2.55%
  6. Returns were greater by $11.32.

Best Management Practices Have No Boundaries

- Cow-calf producers who retain ownership are financially responsible for genetics, health and management of their calves
- Early adopters of genetic evaluation tools
- Utilize a team of advisors to adopt available technologies to improve calf health and performance
- Tired of someone else benefiting from their efforts in health and management
- Believe in working and sharing information with other producers

Methodology

- Sort



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Estimated Cost to Sort*
P. Beedle, 2009

Item	500 hd	1000 hd	1500 hd
Eqpmt cost/hd	$.70	$.35	$.23
Labor cost/hd	$.51	$.51	$.51
Total cost/hd	$1.21	$.86	$.74

*Assumes two turns per year and yard at 85% capacity.

Estimated Cost to Sort
P. Beedle, 2009

Table10.

Total Improvement by Combining Yield Grade, Quality Grade and Hot Carcass Weight Improvement

	YG Imprvmnt Per Hd.	QG Imprvmnt Per Hd.	HCW Imprvmnt Per Hd.	Total Imprvmnt Per Hd.	Total Imprvmnt Per Lot
Heifers					
1st Sort	$10.44	$2.67	$5.53	$18.64	$1,006.56
2nd Sort	$5.18	$1.12	$5.11	$11.41	$444.97
Steers					
1st Sort	$10.30	($1.69)	$5.36	$13.97	$1,299.21
2nd Sort	$13.30	($2.62)	$4.82	$15.50	$1,271.00

Fat Cover - Feed to Gain –Quality & Yield Grade

2006 to 2008 TCSCF data - 23,661 Cattle

Fat Cover Group	No of Cattle	Delivery Weight	Final Weight	ADG	Feed to Gain	Feed Cost $/cwt at $150/T DM
Less than .20	121	633	1122	2.68	6.65	$49.88
.20 to .29	1491	653	1168	2.96	6.65	$49.88
.30 to .39	4685	663	1185	3.13	6.66	$49.95
.40 to .49	7559	665	1191	3.19	6.80	$51.00
.50 to .59	5385	666	1191	3.21	6.95	$52.13
.60 to .69	2928	672	1202	3.27	7.12	$53.40
.70 to .79	1009	679	1210	3.26	7.37	$55.28
.80 or greater	483	672	1210	3.28	7.76	$58.20

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Fat Cover - Feed to Gain –Quality & Yield Grade

2006 to 2008 TCSCF data - 23,661 Cattle

Fat Cover Group	% Yield Grade 1 & 2	% Yield Grade 4 & 5	% Prime	% Premium Choice	% Low Choice	% Low Choice or Better	% Select	% Std
Less than .20	99.2%	0.0%	0.0%	0.0%	13.2%	13.2%	48.8%	36.4%
.20 to .29	99.4%	0.0%	0.5%	3.4%	28.7%	32.9%	54.8%	12.3%
.30 to .39	96.1%	0.0%	0.3%	6.0%	41.8%	48.1%	46.6%	5.2%
.40 to .49	69.8%	0.0%	0.5%	9.3%	53.5%	63.4%	34.6%	1.9%
.50 to .59	33.0%	0.2%	0.8%	13.1%	56.2%	70.3%	28.3%	1.3%
.60 to .69	8.1%	1.3%	1.1%	16.0%	57.3%	74.4%	24.8%	0.8%
.70 to .79	1.3%	14.2%	1.1%	21.1%	57.9%	80.1%	19.0%	0.6%
.80 or greater	0.0%	72.5%	1.0%	12.8%	65.6%	79.5%	19.3%	0.8%

TRI-COUNTY STEER CARCASS FUTURITY

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Beef Carcass Merit Grid

Premiums and Discounts July 8, 2009 Ave Beef Price $131.48

Quality Grade	Yield Grade 1	Yield Grade 2	Yield Grade 3	Yield Grade 4	Yield Grade 5
Prime	$145.11	$141.11	$139.11	$127.71	$119.78
Prem Choice	$138.80	$136.80	$134.80	$123.40	
Choice -	$135.48	$133.48	$131.48	$120.08	$112.15
Select	$129.01	$127.01	$125.01	$113.61	$105.68
Standard	$118.78	$116.78	$114.78	$103.38	$95.45

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Fat Cover - Feed to Gain –Quality & Yield Grade

2006 to 2008 TCSCF data - 23,661 Cattle

Fat Cover Group	Feed Cost $/hd at $150/Ton DM, $3.10/bu corn	Carcass Price $/Hd from Base July 8, 2009	Total Difference in Feed and Carcass Price $/Hd
Less than .20	$6.07	$-46.12	$-40.04
.20 to .29	$6.23	$-18.30	$ -12.07
.30 to .39	$5.65	$- 5.86	$ -0.21
.40 to .49	$ 0.00	$ 0.00	$ 0.00
.50 to .59	$-5.54	$-2.12	$-7.66
.60 to .69	$-12.26	$-4.54	$-16.80
.70 to .79	$-22.28	$-12.88	$-35.17
.80 or greater	$-37.56	$-66.76	$-104.32

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What is Disposition?

- Measure of how docile, wild and handling ability of animals during processing
- An animal's disposition is inherited and influenced by management
- Easily excitable animals compromise their own safety and the safety of each of us

Cattle Handling Injuries

Oklahoma State University 1997

- Evaluated conditions associated with 150 cattle handling injuries on 100 Oklahoma cow-calf operations
- More than 50% of the injuries were due to human error
- 25% of the injuries were perceived to be equipment and facilities
- Better understanding of how an animal may respond to human interaction will keep the handler from becoming an injury victim

Disposition Effects on ADG, Feed to Gain, Pulls & Death Loss

Item	Docile	Restless	Aggressive
No of Head	9,791	2,954	785
% of Total	72.4%	21.8%	5.8%
Arrival Wt	631	626	611
Overall ADG	3.17 [a]	3.11 [b]	2.91 [c]
Feed to Gain	7.10 [a]	7.13 [a]	7.23 [b]
Morbidity Rate	19.2% [a]	16.8% [b]	16.2% [b]
Mortality Rate	1.09%	1.02%	1.91%

Why more pulls with docile calves?

- Feedlots use DART assessment for BRD management
  - Depression
  - Appetite
  - Respiratory Index
  - Temperature
- Calves most likely do not look depressed when they have their head up watching your every move
- Appetite as measured by coming to the bunk
- Human nature do I really want to pull that calf
- After presenting 2002-04 data to feedlots they are pulling a higher % of wild cattle but the wild cattle continue to have a higher % death loss

Mass Medication on Arrival Interacts With Disposition Texas A&M 2007

- Used exit velocity to measure disposition
- 119 cattle weigh on day 0, 14 and 28
- Half treated with Excede 1.5 ml/100 lbs
- Only 1 steer clinically morbid during trial
- Growsafe system to evaluate feeding times
- Calm cattle no ADG response to Excede
- Excitable cattle treated with Excede spent 17min/day more eating
- Excitable cattle improvement in DMI and ADG

Disposition Effects on Quality Grade

Item	Docile	Restless	Aggressive
No of Head	9,791	2,954	785
% of Total	72.4%	21.8%	5.8%
% Prime	1.7%	1.2%	0.1%
% Choice	72.4%	67.9%	58.1%
% Select	23.3%	27.5%	36.2%
% Standard	2.6%	3.4%	5.6%
% CAB	29.1%	22.8%	14.3%

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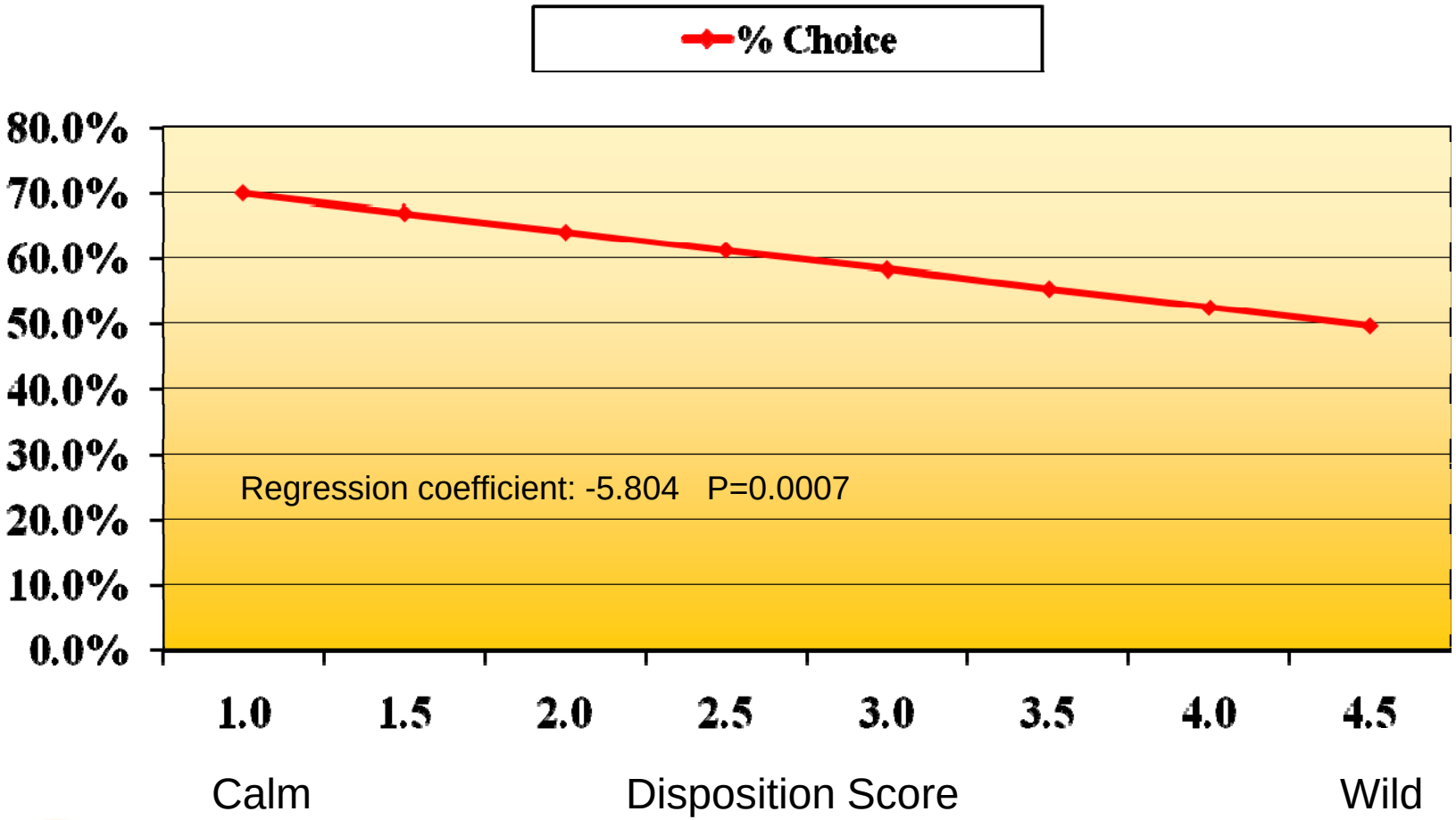
Effect of Disposition Score on % low Choice or Better Rate



Disposition Summary

In 13,315 calves originating from 12 states fed in 8 southwest Iowa feedlots

- Docile calves compared to aggressive calves were:
  1. Feedlot gain was reduced by 8.2%
  2. Feed/Gain as determined by the Cornell Net Carbohydrate Model was reduced by 1.8%
  3. % Choice or better was reduced by 15.9% points or 20%
  4. Standards were increased by 3% points or 115%
  5. CAB acceptance was reduced by 14.8% points or 51%
  6. Returns were reduced by $62.19.

Disposition's Impact on Shrink

ISU Armstrong Research Farm July 2005

- Disposition was not good from one source of cattle
- Our research protocol is to weigh cattle 2 consecutive days to attain on test weight
- Steers were disposition scored on day 1
- 252 yearling steers weighed 2 consecutive days

Disposition's Impact on Shrink

	Docile	Restless	Aggressive	All
Head	152	59	41	252
Disposition Score	1.6	3.4	5.3	2.6
Wt on 08/04	945	894	856	918
Wt on 08/05	943	880	833	910
Average Wt	944	887	845	914
Wt Change	-1.3	-14.2	-23.5	-7.9
% Shrink	-0.1%	-1.6%	-2.8%	-0.9%

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What determines disposition?

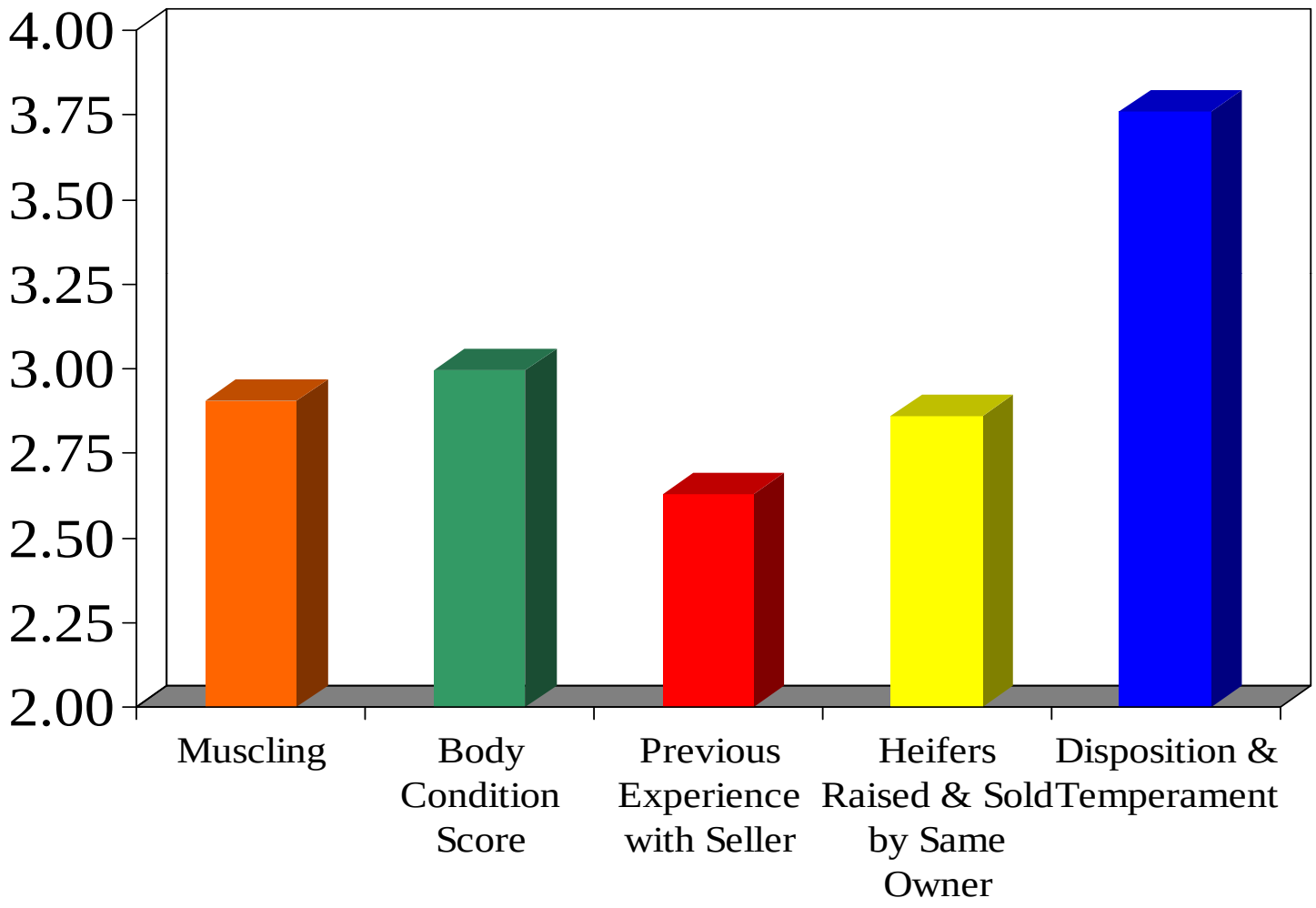
- Similar to calving ease, marbling and average daily gain
- Disposition or temperament is moderately heritable

Effect of sire breed on average disposition score – TCSCF 2005

Sire Breed	Number of Calves	Average Disposition Score
Hereford/ Polled Hereford	651	1.297
Simmental	894	1.589
Red Angus	464	1.617
Angus	6,914	1.618
Gelbvieh	579	1.701
Charolais	561	1.834
Limousin	263	1.860
Brangus	479	2.243

Ranking of Importance of Heifer Quality Characteristics

(4 = extremely important ..... 1= not important)



Effect of disposition on average sale price of heifers – 2003 Calhoun GA Heifer Evaluation and Reproductive Development Sale

Number of Heifers	Average Disposition Score	Average Sale Price
69	1.0 to 1.7	$923
67	2.0 to 2.7	$863
25	3.0 to 3.7	$746
8	4.0 to 4.7	$728

Process Verification

- The old way “My word is my bond”
  - Guaranteed open
  - Had all their shots
  - They were fine when they left home
- The business way “If you can’t prove it, it didn’t happen”
- Feedlot manager I do not believe anything on vaccinations unless the producer and veterinarian signed and dated the document
- Cow-calf producer what do a few days mean to a calf

What is Age Source and Process Verification?

- It is NOT a federally mandated NAIS
- USDA marketing option to gain access to Japanese markets
- Source and age verification simply means that you prove to a third party the age and origin of your cattle to add value
- If your cattle are source and age verified through a USDA program they are qualified for Japan markets
- It is optional, but does require on-site audits and paper trails
- Signed affidavits at the sale barn do NOT qualify

Is Age Verification Worth the Effort?

- TCSCF – Tyson Quality System Assurance requires documentation and time to complete audit forms
- From March 19, 2007 to July 1, 2009, TCSCF marketed 20,049 hd with $26.88/hd premium
- Direct cost $1.55/hd
- Indirect cost time ½ hr training & ½ hr records
- Return to producer $25.33/hd or $507,896

Health Related Considerations

- Medicine costs
- Labor/chute charges
- Mortality rate
- Feedlot gain
- Carcass merit

Death loss in the feedlots

- Health problems are increasing
- Death loss is increasing
- NAHMS 2.1% death loss in 2000
- NAHMS 2.5% death loss in 2005
- Vet Life Heifers death loss 1.3% 2000
- Vet Life Heifers death loss 1.6% 2005
- TCSCF .75% death loss in 2000
- TCSCF 1.04% death loss in 2005
- TCSCF 1.60% death loss in 2008
- TCSCF 1.08% death loss in 2009

Materials & Methods

- **Detailed health records used to classify cattle:**
  - **No treatment (NT) n=10,987**
  - **Single treatment (ST) n=1,440**
  - **Two or more treatments (2T) n=894**
    - **17.5% of all cattle (n=2,334) were treated as a primary result of bovine respiratory disease (BRD)**
    - **Primarily within the first 45 days on feed**
- **Cattle were harvested when visually evaluated to have .40 inches of external fat cover**
- **USDA and detailed carcass measures recorded**

Effect of morbidity on feedlot gain and feed efficiency

	NT	ST	2T
ADG, lb	3.19[a]	3.01[b]	2.93[c]
F:G	7.15[a]	6.99[b]	6.86[c]

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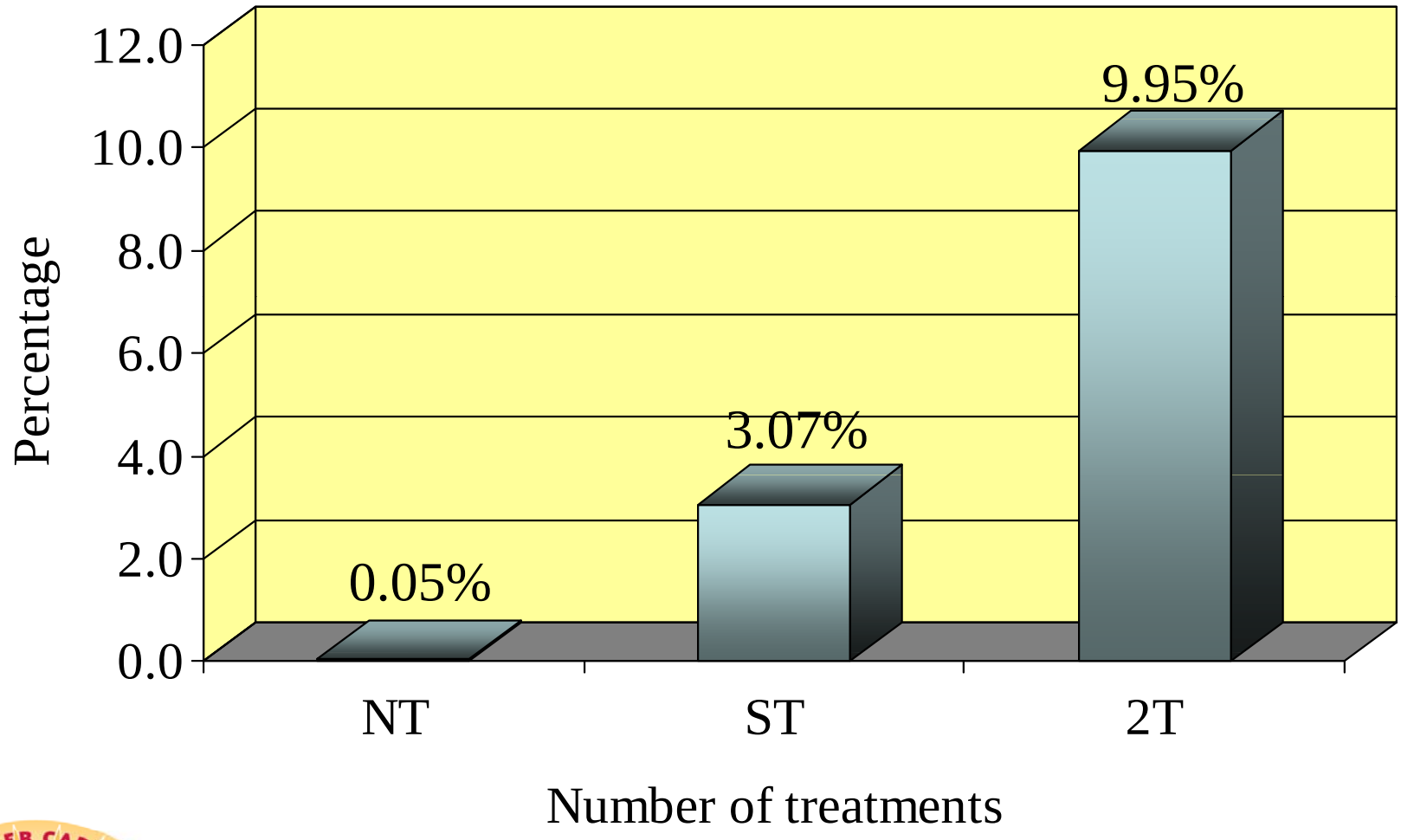
Effect of morbidity on mortality rate



Mantel-Haenszel Chi-square P-value <0.01

Effect of morbidity on USDA quality grade* distribution

	Number of treatments			
	NT	ST	2T	P-value
Prime, %	1.61	0.90	0.90	<0.02
Premium Choice, %	21.68	19.10	14.56	<0.01
Low Choice, %	51.00	44.65	42.11	<0.01
Select, %	23.55	30.42	33.15	<0.01
Standard, %	2.15	4.93	9.29	<0.01

**Premium and Low Choice determination based on marbling score.*
P-value represents Mantel-Haenszal Chi-square.

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Difference in dollars returned per head relative to the number of treatments

	Number of treatments		
	NT	ST	2T
Death loss discount*, $	PAR	–31.07	–100.04
Treatment cost**, $	PAR	–20.60	–48.43
ADG reduction#, $	PAR	–24.49	–35.71
Yield grade premium, $	PAR	+2.90	+4.59
Quality grade discount, $	PAR	–10.39	–19.41
Light carcass discount, $	PAR	–1.55	–1.58
Dark cutter adjustment, $	PAR		–0.58
Total difference, $	**PAR**	–85.02	–201.16

**Accounts for cost of gain investment and lost carcass value.*
***Includes medicine, labor and chute/equipment charges.*
#Based on additional carcass weight gained during the feeding period.

Health Treatment Impact on Tenderness (Engelken, et al 2009)

Item	Untreated	One Treatment	Two or more Treatments
Number of calves	203	94	62
Overall ADG	3.32[a]	3.34[a]	3.08[b]
Marbling Score	SM 51[a]	SM 16[a]	SL 99[b]
Premium Choice %	15.3%	7.6%	3.6%
Choice - %	65.5%	56.5%	50.0%
Select %	19.2%	35.9%	46.4%
Warner-Bratzler Shear lb	6.01[a]	6.47[b]	6.47[b]
Profit or (loss)	$62.21[a]	$58.96[a]	($38.24) [b]

[a,b] Numbers within same row without a common superscript are significantly different ($p \leq .05$)

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Iowa Sale Barn Research

- Data collected by 4 Reporters hired by Iowa Beef Center at Iowa State University
- 9 Auction Markets reported by USDA
- 105 sales from Oct 20, 2005 to Feb 24, 2006
  - 20 Pre-conditioned
  - 5 Featured sales
  - 80 Regular “Special” sales
- 20,859 Lots of cattle sold

Results After Other Variables
Feeder cattle price $/cwt

Certified Vacc & Weaned 30+ days	6.15[a]
Uncertified Vacc & Weaned 30+ days	3.40[b]
Vacc & “Weaned” (No date or < 30)	3.14[b]
Vacc, but Not Weaned	2.42[c]
Weaned, but Not Vacc	1.70[c]
Not Vaccinated and Not Weaned	Base[d]

Coefficients with different superscripts are statistically different at P<.001

Model R2=.71

More Detailed Reports

- TCSCF.com
  - Sire summaries
  - Research updates
- IowaBeefCenter.org
  - Research reports
  - Summaries of Cull Cows & Tenderness Projects
- Call 712.769.2600
- Email dbusby@iastate.edu

Tri-State Cow/Calf Conference

The conference is presented under a grant from the Southern Region Risk Management Education Center with additional support from the University of Tennessee Extension, Virginia Cooperative Extension and North Carolina Cooperative Extension.

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