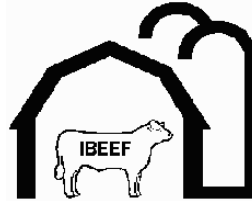


**2003-2004**  
**Indiana**  
**Beef**  
**Evaluation and**  
**Economics**  
**Feeding Program**



**IBEEF Description**



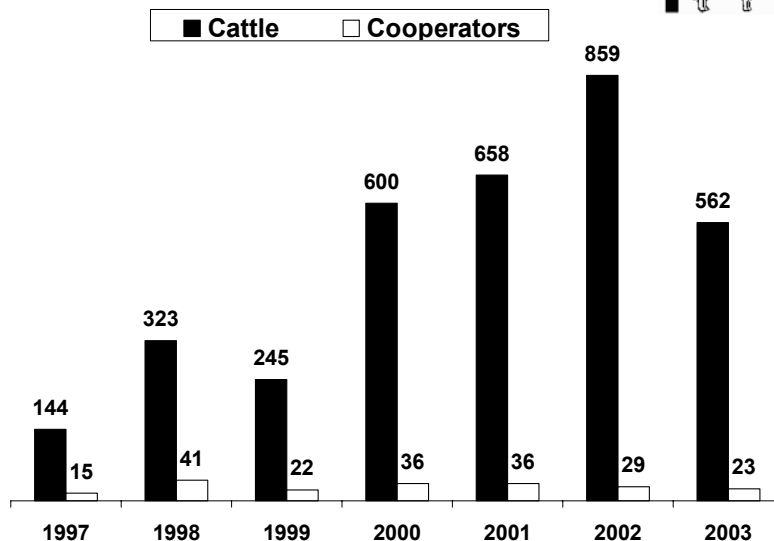
IBEEF is a steer and heifer feedout program that provides Indiana producers with a way to place cattle on feed and gather performance, carcass, and economic information to make genetic and management improvements in their herd. Cooperators receive individual and group feedlot performance, feedlot costs, and individual and group carcass information, including quality and yield grade, ribeye area, fat thickness, carcass weight, etc. IBEEF also allows producers to compare sires, as well as evaluate alternative marketing strategies and their impact upon profitability. The program also helps to improve the reputation of producer cattle by establishing a database of feedlot performance and carcass merit on their calves.

# 2003-2004 IBEEF Participation



- 23 cooperators
- 437 steers and 125 heifers
- Weaned at least 30 days before delivery
- Delivered October 20, November 10, and December 1, 2003
- 399 Steers and Heifers fed in Iowa
  - 41 steers and 72 heifers at Bentley East, Macedonia, IA
  - 233 steers and 53 heifers at SMB Farms, Macedonia, IA
- 163 Steers fed in Indiana
  - G&D Smoker Farm, Wanatah, IN

# History of Fall IBEEF



# Vaccination Requirements



## **At weaning or 2 weeks prior:**

- Four-way respiratory virus (IBR, BVD, PI3, and BRSV), may be killed or modified live (modified live preferred)
- Seven-way clostridial vaccine
- Pasturella vaccine

## **Two weeks before delivery:**

- Repeat four-way respiratory virus vaccine (modified live)

# 2003-2004 IBEEF Participation



- Sire breeds represented: Angus, Charolais, Chiangus, Gelbvieh, Gelbvieh Balancer, Hereford, Limousin, Maine Anjou, Salers, Shorthorn, Simmental, South Devon, Composite, and Cross
- Color: Black/BWF 73%, Red/RWF 14%, Brown 4%, White 4%, Smoke 3%, Gray 1%

## Feedlot Performance



	<u>Steer</u>	<u>Heifer</u>
Delivery Point Weight, lbs.	626	608
Feedlot In Weight, lbs.	612	598
Harvest Weight, lbs.	1218	1064
ADG	3.37	3.11
Days on Feed	181	151
Age at Harvest	421	395

## Carcass Characteristics



	<u>Steer</u>	<u>Heifer</u>
Hot Carcass Weight, lbs.	761	655
Ribeye Area	12.6	11.6
Backfat	0.46	0.46
Yield Grade	2.9	2.8
% YG 1 and 2	56.5	56.8
% YG 4	3.2	1.6
% Choice and Prime	78.7	84.8
% CAB	17.2	22.4

## Calf Value At Delivery



<u>Delivery Point Weight, lbs.</u>	<u>\$/cwt Steer</u>	<u>\$/cwt Heifer</u>
449 and below	\$105.00	\$100.00
450 - 499	\$102.50	\$97.50
500 - 549	\$100.00	\$95.00
550 - 599	\$97.50	\$92.50
600 - 649	\$95.00	\$90.00
650 - 699	\$92.50	\$87.50
700 - 749	\$90.00	\$85.00
750 - 799	\$87.50	\$82.50
800 and above	\$85.00	\$80.00

## Economics



	<u>Steer</u>	<u>Heifer</u>
Feed Cost/cwt Gain	\$39.37	\$41.95
Nonfeed Cost/cwt Gain	\$16.03	\$18.97
Total Cost/cwt Gain	\$55.40	\$60.92
Carcass Price, \$/cwt	\$140.78	\$133.49
Sale Value	\$1,071.14	\$874.33
Calf Value	\$590.91	\$547.39
Profit	\$148.95	\$44.57
BE Feeder Calf Value/cwt	\$119.04	\$99.08

## IBEEF Cattle Compared to 2000 NBQA Native



	<u>Steer</u>	<u>Heifer</u>	<u>NBQA</u>
% Prime	0.7	4.0	1.6
% Prem. Choice	21.5	26.4	16.8
% Low Choice	56.5	54.4	32.2
% Select	20.6	15.2	42.9
% Standard	0.7	0.0	5.7
% YG 1&2	56.5	56.8	54.4
% YG 4	3.2	1.6	3.4

## Steers Compared to 2000 NBQA Steers



	<u>IBEEF</u>	<u>NBQA</u>
Yield Grade	2.9	3.2
Fat Thickness	0.46	0.47
Carcass Wt.	761	808
Ribeye Area	12.6	13.1
Marbling	SM 48	SM 18

## Heifers Compared to 2000 NBQA Heifers



	<u>IBEEF</u>	<u>NBQA</u>
Yield Grade	2.8	2.9
Fat Thickness	0.46	0.53
Carcass Wt.	655	741
Ribeye Area	11.6	13.0
Marbling	SM 73	SM 31



## Steers

## Steer Feedlot Performance (Cooperator Average)



	<u>Average</u>	<u>Range</u>
Delivery Point Weight, lbs.	638	537 to 761
Initial Value at Delivery, \$/cwt	\$93.97	\$88.29 to \$99.18
Feedlot In Weight, lbs.	615	501 to 740
Sale Weight	1230	1125 to 1379
Days on Feed	184	149 to 208
Daily Gain	3.36	2.67 to 3.99

## How Steers Were Sold Base Price and Grid



Sale Group	Sell Date	Base Price	Premiums		Select	Discounts		Avg. \$/cwt
			Prime	CAB		Standard	Y4	
02 IA	3/16	\$138.00	--	\$5.50	\$4.00	\$7.00	--	\$140.13
03 IA	4/7	\$132.16	--	\$7.65	\$4.40	--	\$15.00	\$135.37
05 IA	4/20	\$138.36	--	\$6.71	\$10.30	--	\$15.00	\$137.01
07 IN	4/26	\$135.96	--	\$7.97	\$9.80	--	\$15.00	\$136.39
08 IA	4/27	\$135.96	--	\$7.97	\$9.80	--	--	\$135.96
09 IN	5/12	\$145.66	\$23.00	\$3.66	\$12.40	--	\$15.00	\$143.99
10 IA	5/13	\$145.66	\$23.00	\$3.66	\$12.40	\$14.70	\$15.00	\$145.24
11 IA	5/13	\$145.66	--	\$3.66	\$12.40	--	--	\$147.82
13 IN	6/6	\$144.24	--	\$3.47	\$15.00	\$17.30	\$15.00	\$141.11
14 IA	6/15	\$143.84	\$21.95	\$6.73	\$15.10	--	\$15.00	\$143.87

Base price, premiums, and discounts are \$/cwt

Other Premiums: YG 1: \$6.50, YG 2: \$2.50

Other Discounts: Heavy carcass >950 lbs: \$1.87 (07 IN), \$15.92 (13 IN)

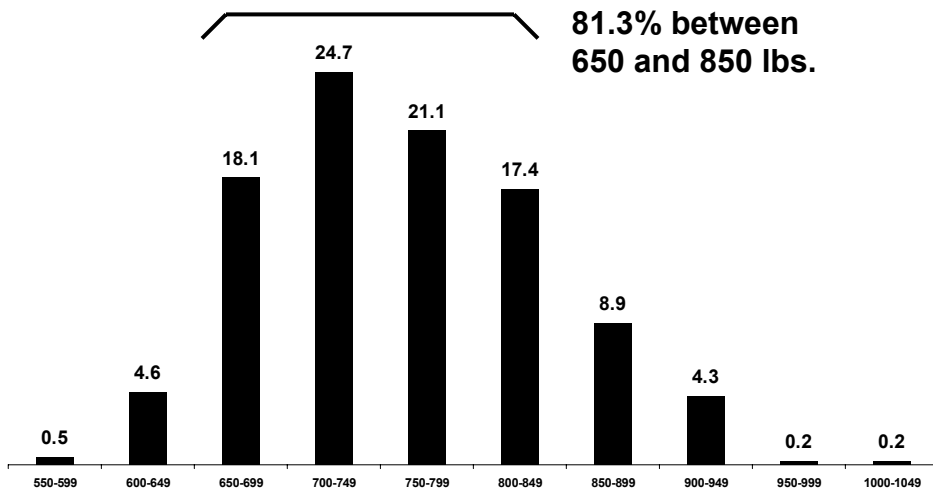
All cattle sold to IBP: Iowa cattle – Denison, IA; Indiana cattle – Joslin, IL

## Steer Carcass Characteristics (Cooperator Average)

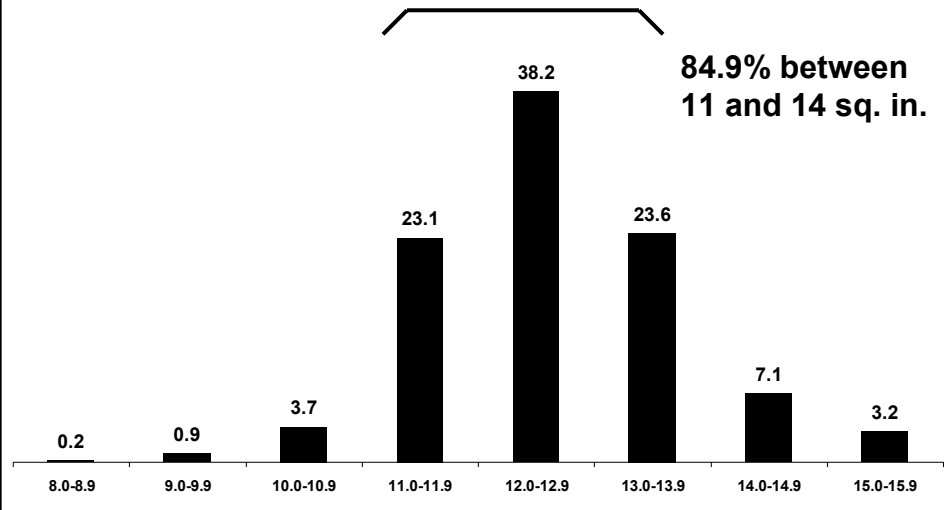


	<u>Average</u>	<u>Range</u>
Carcass Weight	770	692 to 871
Dressing %	62.5	60.7 to 64.8
Ribeye Area	12.7	11.6 to 13.5
REA/cwt carcass	1.66	1.52 to 1.85
Backfat	0.43	0.25 to 0.61
Yield Grade	2.8	2.1 to 3.5
% Choice or Prime	72.4	20.0 to 100.0
Sale Price, \$/cwt	\$140.49	\$135.26 to \$144.76
Sale Value/Hd.	\$1,081.43	\$960.99 to \$1,226.75

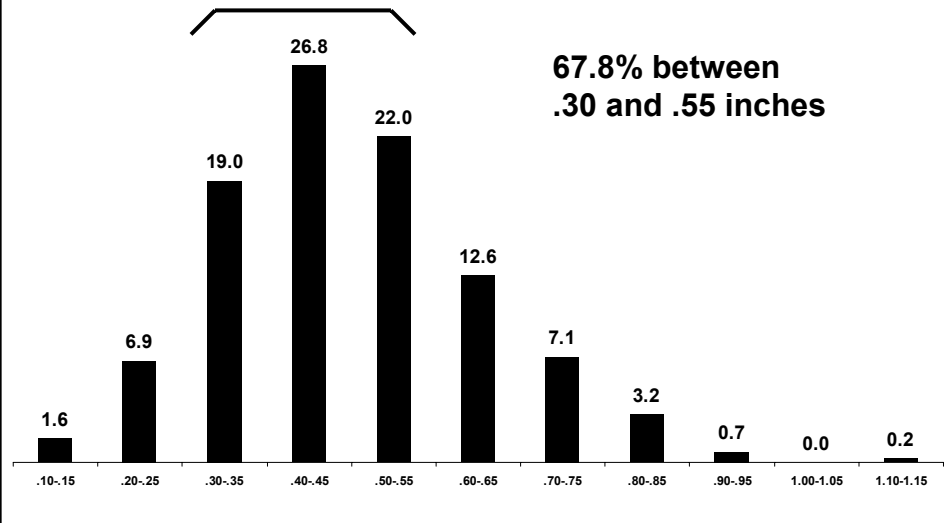
## Steers Carcass Weight



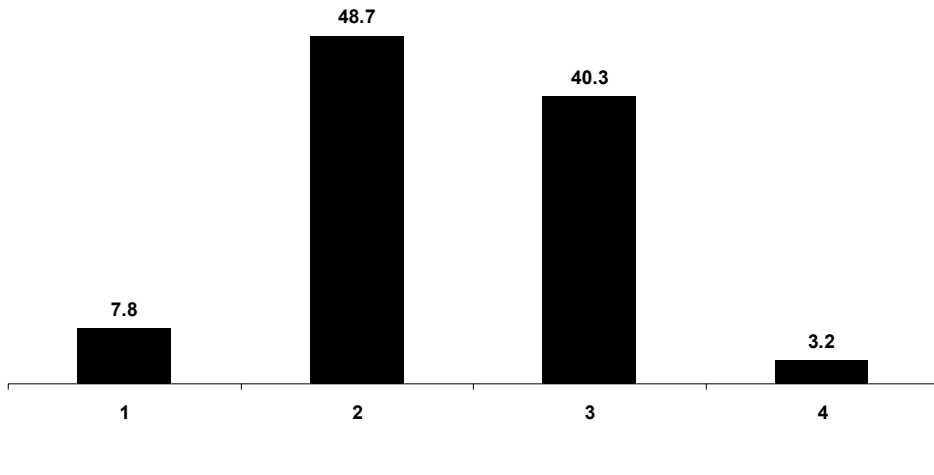
# Steers Ribeye Area



# Steers Backfat



## Steers Yield Grade



## Steer Feeding Cost (Cooperator Average)



	<u>Average</u>	<u>Range</u>
Feed	\$236.58	\$215.11 to \$256.12
Medication	\$3.63	\$0.00 to \$10.97
Yardage	\$52.86	\$43.68 to \$58.80
Misc. (processing, trucking, data collection)	\$40.69	\$35.53 to \$46.46
<b>Total</b>	<b>\$333.77</b>	<b>\$298.69 to \$363.11</b>

## Steers - The Bottom Line (Cooperator Average)



	<u>Average</u>	<u>Range</u>
Feed Cost of Gain, \$/cwt	\$38.99	\$34.16 to \$44.76
Nonfeed Cost of Gain, \$/cwt	\$16.06	\$13.97 to \$18.81
Total Cost of Gain, \$/cwt	\$55.05	\$50.02 to \$63.57
Profit/Head	\$149.62	\$16.07 to \$262.63
Break Even Feeder Calf Value, \$/cwt	\$118.19	\$94.25 to \$139.83

## Break Even Feeder Calf Value



Calculation:

$$\frac{\text{Harvest Sale Value} - \text{Feedlot Costs}}{\text{Calf Weight at Delivery}}$$

Example for Steers:

Harvest Sale Value = 761 lbs x \$140.78/cwt = \$1,071.34

Feedlot Costs = \$331.28

Net = \$1,071.34 - \$331.28 = \$740.06

Calf Weight at Delivery = 626 lbs

Break Even Calf Value = \$740.06/626 lbs = \$118.22/cwt

# Profit Groups



- Based on initial assigned feeder calf value at delivery, feeding costs, and harvest sale value, cattle were divided into profit group quartiles (109 or 110 steers/group)
- Profit = Sale Value - Feedlot Costs - Calf Value
- Example:  
Profit = \$1,071.14 - \$331.28 - \$590.91 = \$148.95

# Steer Profit Groups



<u>Profit Group</u>	<u>No. Steers</u>	<u>Profit \$/Hd.</u>	<u>Break Even Feeder Calf Value, \$/cwt</u>
1	109	\$274.53	\$138.81
2	109	\$175.83	\$123.58
3	109	\$112.29	\$113.18
4	110	\$34.22	\$100.76
<hr/>			
Average		\$149.22	\$119.08

## Differences Between High And Low Profit Groups *Feedlot Performance*



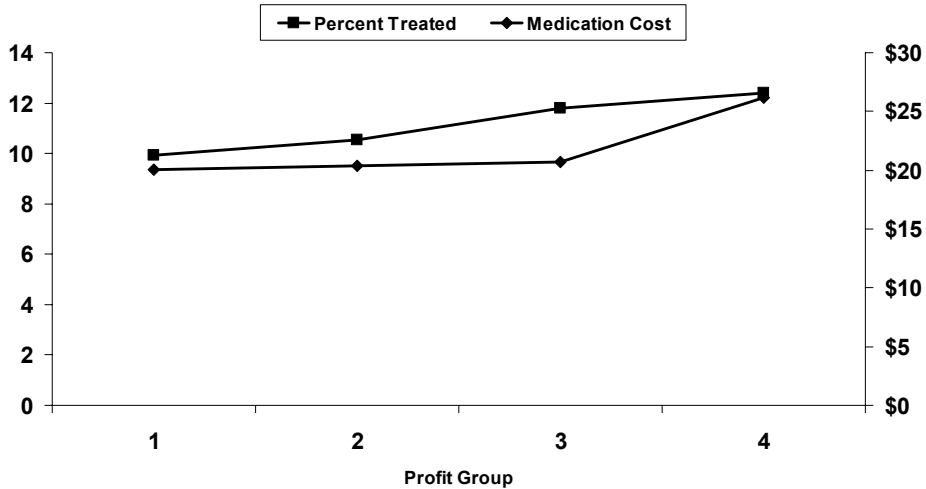
	<u>High vs. Low</u>
Delivery Point Weight, lbs.	630 vs. 622
Start Weight, lbs.	615 vs. 606
% Shrink (delivery - feedlot in)	-2.12 vs. -2.39
Final Weight, lbs.	1304 vs. 1133
Feedlot Daily Gain	3.67 vs. 3.04
Medication Cost	\$2.95 vs. \$4.76
Total Feedlot Cost	\$349.45 vs. \$313.09
Cost of Gain, \$/cwt	\$51.00 vs. \$59.79
Days on Feed	189 vs. 174

## Differences Between High And Low Profit Groups *Carcass Characteristics*



	<u>High vs. Low</u>
Hot Carcass Weight, lbs.	830 vs. 693
Ribeye Area	13.3 vs. 11.9
Backfat	0.45 vs. 0.46
% Yield Grade 4	1.8 vs. 7.3
% Yield Grade 1 and 2	56.9 vs. 63.6
% Choice or Prime	99.1 vs. 58.2
Carcass Price, \$/cwt	\$146.79 vs. \$135.28

# Impact of Health on Profit



# % of Steers in Each Category Which are in the 4 Profit Groups



<u>Category</u>	<u>No. Steers</u>	<u>Profit Group</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Breed of Sire					
Angus	226	23.5	17.7	31.4	27.4
Charolais	25	0.0	40.0	16.0	44.0
Gelbvieh	11	27.3	18.2	27.3	27.3
Gelbvieh Balancer	24	33.3	29.2	20.8	16.7
Hereford	20	5.0	50.0	15.0	30.0
Other Breeds	26	23.1	50.0	11.5	15.4
Salers	10	40.0	20.0	20.0	20.0
Shorthorn	22	50.0	27.3	18.2	4.5
Simmental	36	19.4	22.2	25.0	33.3
South Devon	12	58.3	16.7	16.7	8.3
Unknown	25	36.0	36.0	12.0	16.0

"Other Breeds" = Breeds with fewer than 10 steers. Includes Chiangus (8 steers), Composite (8), Cross (5), and Limousin (5).

% of Steers in Each Category  
Which are in the 4 Profit Groups



<u>Category</u>	<u>No. Steers</u>	<u>Profit Group</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Color					
Black	324	25.3	22.8	27.2	24.7
Other	113	23.9	31.0	18.6	26.5
Delivery Date					
10/20/03	233	4.3	19.3	36.5	39.9
11/10/03	163	49.1	31.9	11.7	7.4
12/1/03	41	46.3	29.3	12.2	12.2

% of Steers in Each Category  
Which are in the 4 Profit Groups



<u>Category</u>	<u>No. Steers</u>	<u>Profit Group</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Sale Group					
02 IA 3/16	78	3.8	16.7	48.7	30.8
03 IA 4/7	50	0.0	14.0	24.0	62.0
05 IA 4/20	41	2.4	17.1	26.8	53.7
07 IN 4/26	39	48.7	33.3	7.7	10.3
08 IA 4/27	1	0.0	0.0	0.0	100.0
09 IN 5/12	45	51.1	33.3	8.9	6.7
10 IA 5/13	64	9.4	28.1	37.5	25.0
11 IA 5/13	18	50.0	38.9	11.1	0.0
13 IN 6/6	79	48.1	30.4	15.2	6.3
14 IA 6/15	22	45.5	22.7	13.6	18.2



## Heifers

### Heifer Feedlot Performance (Cooperator Average)



	<u>Average</u>	<u>Range</u>
Delivery Point Weight, lbs.	569	470 to 702
Initial Value at Delivery, \$/cwt	\$92.54	\$85.68 to \$97.33
Feedlot In Weight, lbs.	566	483 to 661
Sale Weight	1034	977 to 1091
Days on Feed	161	137 to 175
Daily Gain	2.94	2.42 to 3.36

## How Heifers Were Sold Base Price and Grid



Sale Group	Sell Date	Base Price	Premiums		Discounts			Avg. \$/cwt
			Prime	CAB	Select	Standard	Y4	
01 IA	2/27	\$122.52	\$32.80	\$4.66	\$5.89	--	--	\$123.70
04 IA	4/7	\$131.72	\$27.50	\$7.65	\$4.40	--	--	\$135.46
06 IA	4/20	\$137.67	--	\$6.71	\$10.30	--	--	\$140.42
12 IA	5/25	\$139.17	\$18.80	\$3.03	\$15.25	--	\$15.00	\$140.33

Base price, premiums, and discounts are \$/cwt

Other Premiums: YG 1: \$6.50, YG 2: \$2.50

Other Discounts: <550 lbs: \$12.55 (12 IA); No Prime premium given if YG 4 (12 IA).

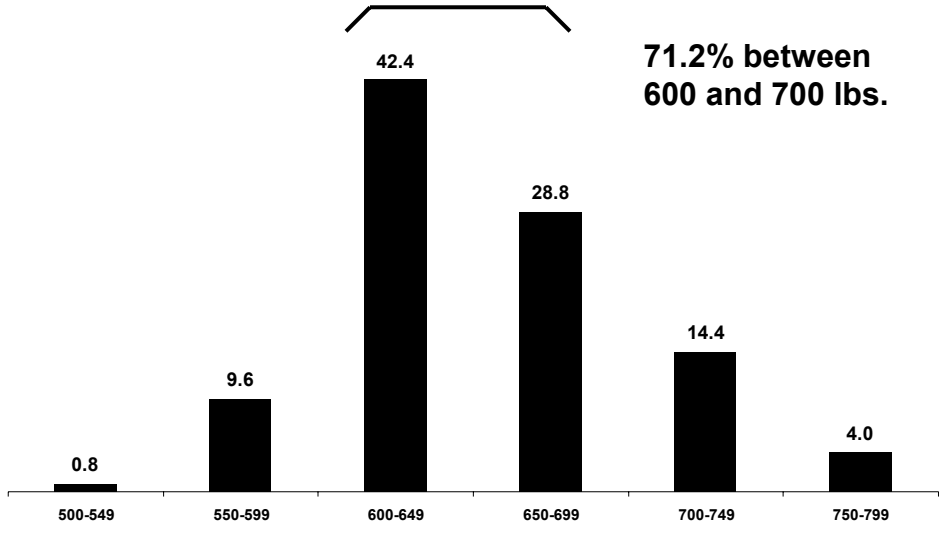
All cattle sold to IBP - Denison, IA

## Heifer Carcass Characteristics (Cooperator Average)

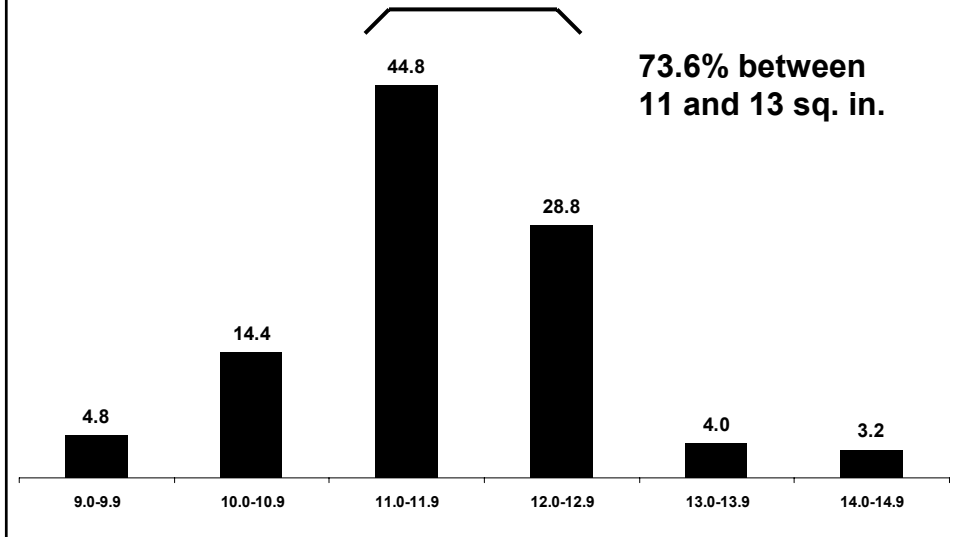


	<u>Average</u>	<u>Range</u>
Carcass Weight	635	596 to 673
Dressing %	61.4	60.1 to 62.9
Ribeye Area	11.6	10.6 to 12.6
REA/cwt carcass	1.84	1.71 to 2.12
Backfat	0.44	0.26 to 0.70
Yield Grade	2.7	1.8 to 3.7
% Choice or Prime	77.2	50.0 to 100.0
Sale Price, \$/cwt	\$134.48	\$126.74 to \$142.78
Sale Value/Hd.	\$854.38	\$805.16 to \$957.64

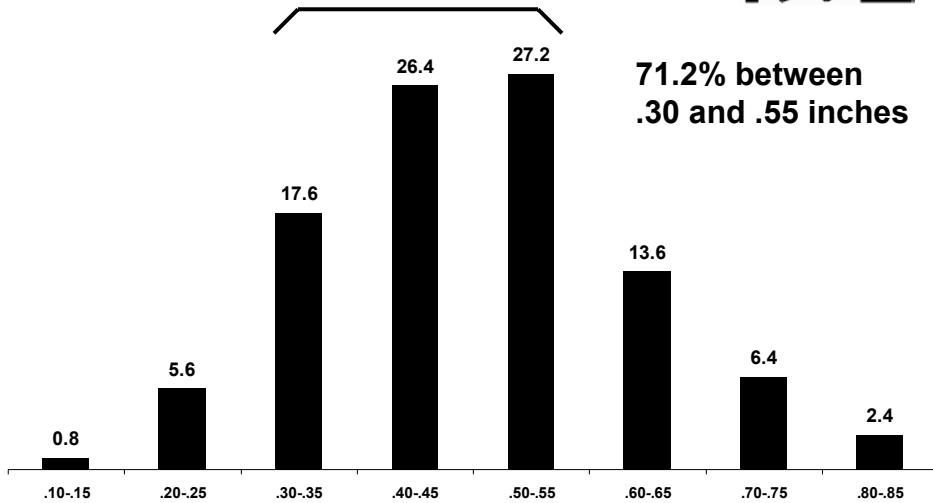
# Heifers Carcass Weight



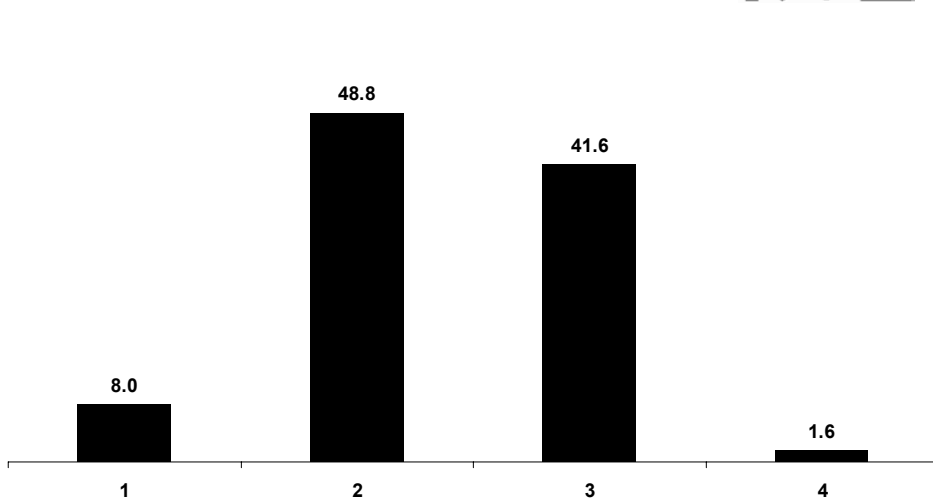
# Heifers Ribeye Area



# Heifers Backfat



# Heifers Yield Grade



## Heifer Feeding Cost (Cooperator Average)



	<u>Average</u>	<u>Range</u>
Feed	\$198.86	\$165.64 to \$243.27
Medication	\$9.08	\$0.00 to \$26.06
Yardage	\$47.06	\$40.63 to \$50.75
Misc. (processing, trucking, data collection)	\$35.46	\$33.95 to \$36.70
<b>Total</b>	<b>\$290.46</b>	<b>\$243.47 to \$335.37</b>

## Heifers - The Bottom Line (Cooperator Average)



	<u>Average</u>	<u>Range</u>
Feed Cost of Gain, \$/cwt	\$42.51	\$34.52 to \$49.93
Nonfeed Cost of Gain, \$/cwt	\$19.89	\$15.77 to \$23.41
Total Cost of Gain, \$/cwt	\$62.40	\$57.53 to \$71.21
Profit/Head	\$39.48	-\$29.07 to \$137.17
Break Even Feeder Calf Value, \$/cwt	\$100.20	\$84.55 to \$123.08

## Heifer Profit Groups



<u>Profit Group</u>	<u>No. Heifers</u>	<u>Profit \$/Hd.</u>	<u>Break Even Feeder Calf Value, \$/cwt</u>
1	31	\$155.80	\$122.19
2	32	\$77.18	\$104.66
3	31	\$7.63	\$90.39
4	31	-\$63.39	\$78.89
Average		\$44.31	\$99.03

## Differences Between High And Low Profit Groups *Feedlot Performance*



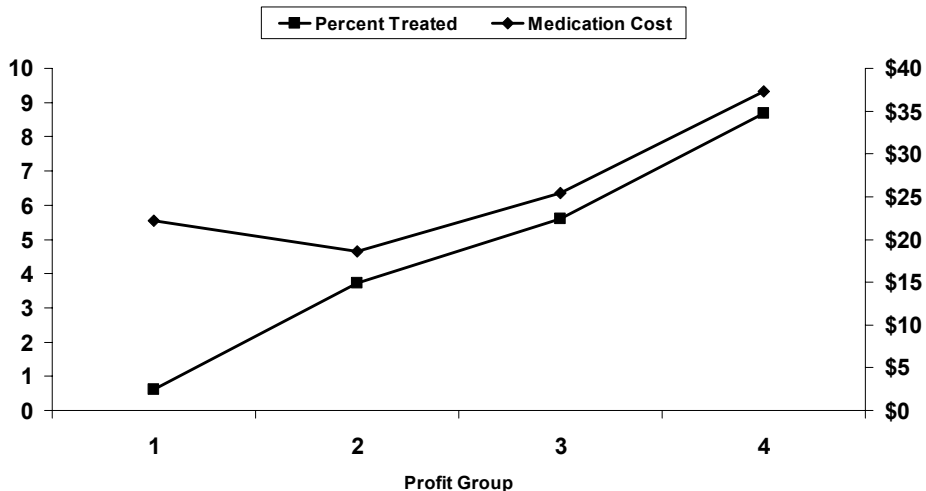
	<u>High vs. Low</u>
Delivery Point Weight, lbs.	552 vs. 641
Start Weight, lbs.	557 vs. 619
% Shrink (delivery - feedlot in)	+1.07 vs. -3.10
Final Weight, lbs.	1091 vs. 1029
Feedlot Daily Gain	3.31 vs. 2.99
Medication Cost	\$0.72 vs. \$16.85
Total Feedlot Cost	\$308.71 vs. \$266.43
Cost of Gain, \$/cwt	\$57.93 vs. \$65.16
Days on Feed	162 vs. 139

## Differences Between High And Low Profit Groups *Carcass Characteristics*



	<u>High vs. Low</u>
Hot Carcass Weight, lbs.	679 vs. 627
Ribeye Area	12.0 vs. 11.2
Backfat	0.44 vs. 0.49
% Yield Grade 4	0.0 vs. 6.5
% Yield Grade 1 and 2	61.3 vs. 54.8
% Choice or Prime	100.0 vs. 58.1
Carcass Price, \$/cwt	\$144.18 vs. \$123.10

## Impact of Health on Profit



## % of Heifers in Each Category Which are in the 4 Profit Groups



<u>No.</u> <u>Category</u>	<u>No.</u> <u>Heifers</u>	<u>Profit Group</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
<b>Breed of Sire</b>					
Angus	64	21.9	23.4	31.3	23.4
Gelbvieh Balancer	11	63.6	27.3	0.0	9.1
Other Breeds	28	14.3	21.4	28.6	35.7
Simmental	22	27.3	36.4	13.6	22.7

“Other Breeds” = Breeds with fewer than 10 heifers. Includes Hereford (8 heifers), Chiangus (6), Limousin (4), Cross (3), Gelbvieh (2), Maine Anjou (2), Unknown (2), and Salers (1).

## % of Heifers in Each Category Which are in the 4 Profit Groups



<u>Category</u>	<u>No.</u> <u>Heifers</u>	<u>Profit Group</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
<b>Color</b>					
Black	89	25.8	24.7	24.7	24.7
Other	36	22.2	27.8	25.0	25.0
<b>Delivery Date</b>					
10/20/03	72	5.6	22.2	38.9	33.3
12/1/03	53	50.9	30.2	5.7	13.2

## % of Heifers in Each Category Which are in the 4 Profit Groups



<u>Category</u>	<u>No. Heifers</u>	<u>Profit Group</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Sale Group					
01 IA 2/27	43	2.3	7.0	39.5	51.2
04 IA 4/7	29	10.3	44.8	37.9	6.9
06 IA 4/20	17	52.9	41.2	0.0	5.9
12 IA 5/25	36	50.0	25.0	8.3	16.7

## Factors That Affect Profitability



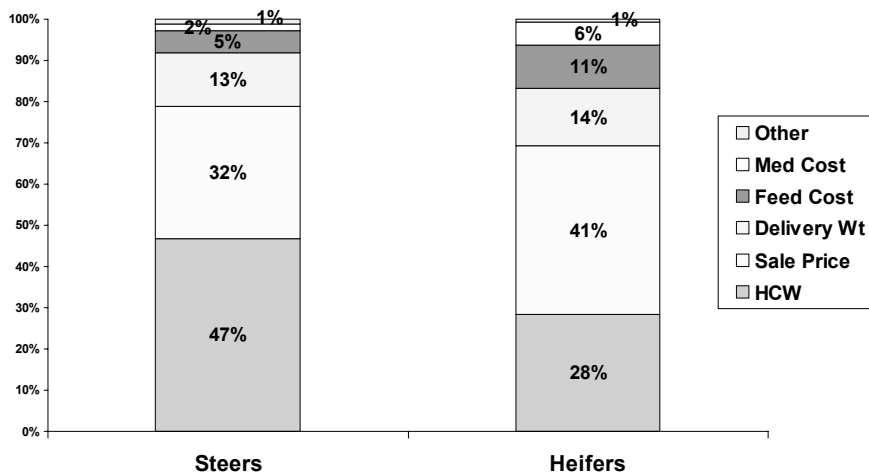
- Health
- Feedlot Daily Gain
- Harvest Weight
- Quality Grade
- Yield Grade

# Profit



- Profit = Value – (Feeding Cost + Calf Value)
- Steers:  
 $\$148.95 = \$1,071.14 - (\$331.28 + \$590.91)$
- Heifers:  
 $\$44.57 = \$874.33 - (\$282.36 + \$547.39)$

# Factors Affecting Variation in Profit



## Factors Affecting Variation in Profit



- Steers

Profit = -1314.18  
+7.64 Sale Price  
+1.33 HCW  
-0.59 Delivery Wt  
-1.06 Feed Cost  
-1.17 Med Cost

$R^2 = .989$

- Heifers

Profit = -1113.03  
+6.24 Sale Price  
+1.37 HCW  
-0.58 Delivery Wt  
-1.06 Feed Cost  
-1.02 Med Cost

$R^2 = .994$

## Factors Affecting Variation in Profit



- Steers

\$1.00 ↑ in Sale Price ⇒ \$7.64 ↑ in Profit  
1 lb ↑ in HCW ⇒ \$1.33 ↑ in Profit  
1 lb ↑ in Delivery Wt ⇒ \$0.59 ↓ in Profit  
\$1.00 ↑ in Feed Cost ⇒ \$1.06 ↓ in Profit  
\$1.00 ↑ in Med Cost ⇒ \$1.17 ↓ in Profit

## Factors Affecting Variation in Profit



- Heifers

\$1.00 ↑ in Sale Price ⇒ \$6.24 ↑ in Profit

1 lb ↑ in HCW ⇒ \$1.37 ↑ in Profit

1 lb ↑ in Delivery Wt ⇒ \$0.58 ↓ in Profit

\$1.00 ↑ in Feed Cost ⇒ \$1.06 ↓ in Profit

\$1.00 ↑ in Med Cost ⇒ \$1.02 ↓ in Profit

IBEEF Participation



Data



Information



Knowledge



Action



## For more information about IBEEF:



- <http://www.ansc.purdue.edu/ibeeff/>
- Kern Hendrix, Purdue University (ANSC)
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