

# Proceedings

Kansas State University Agricultural Experiment Station  
and Cooperative Extension Service



# Beef Stocker Conference 2006

September 28, 2006

## KSU Beef Stocker Unit

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## Beef Stocker Conference 2006

### Welcome

Welcome to the 2006 KSU Beef Stocker Conference. We appreciate your attendance and support of this educational event. We are fortunate to have assembled an outstanding list of presenters and topics that we believe are relevant to your bottom line.

As always, if you have any questions on the program or suggestions for future topics, please let us know. Our strength in delivering relevant information lies in working closely with you, our stakeholder.

Sincerely,

Dale A. Blasi, PhD  
Extension Beef Specialist  
Department of Animal Sciences and Industry  
College of Agriculture

## THANK YOU

We would like to express a special "THANK YOU" to Cargill Animal Nutrition for their support of today's educational program and activities for the beef stocker segment. With their financial assistance, we are able to deliver the caliber of programming that today's events have in store for you. Please take a moment to stop by their display to see the line of products that they have to offer.





## Beef Stocker Conference 2006

# Program Agenda

- 9:30 a.m. Registration/Coffee
- 10:15 a.m. Introductions
- 10:30 a.m. **Forces Shaping Change in the U.S. Beef Sector**  
*Jim Mintert, Kansas State University*
- 11:15 a.m. **Impact of Added Value Programs on Beef Stocker Producers**  
*Leann Saunders, IMI Global, Inc.*
- 12:00 Noon Barbecue Lunch
- 1:00 p.m. **Breakeven Stocker Management Strategies**  
*Bryan McMurry, Cargill Animal Nutrition*
- 2:00 - 5:00 p.m. **Breakout Sessions**
- Utilization of Individual Stocker Information for Value**  
*Brad White, Kansas State University*
- Are Stocker Implants Still Relevant for Targeted Quality Grade Programs?**  
*Chris Reinhardt, Kansas State University*
- Animal ID Technology Performance – Realistic Expectations**  
*Dale Blasi, Kansas State University*
- Variation in Forage Quality as it Relates to Stocker Performance**  
*KC Olson, Kansas State University and  
Pablo Guiroy, Cargill Animal Nutrition*
- 5:00 p.m. Tour of the new Beef Stocker Unit and evening barbecue

# FORCES SHAPING CHANGE IN THE U.S. BEEF SECTOR

JIM MINTERT  
KANSAS STATE UNIVERSITY

## Forces Shaping Change In The U.S. Beef Sector

James Mintert, Ph.D.  
Professor & Extension State Leader  
Department of Agricultural Economics  
Kansas State University

[www.agmanager.info/livestock/marketing](http://www.agmanager.info/livestock/marketing)  
[jmintert@ksu.edu](mailto:jmintert@ksu.edu)

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## Forces Shaping Change in U.S. Beef Sector

- Beef Demand
- International Trade
- Shifts in Optimum Firm Size
- Ethanol
- Putting It All Together

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## Beef Demand

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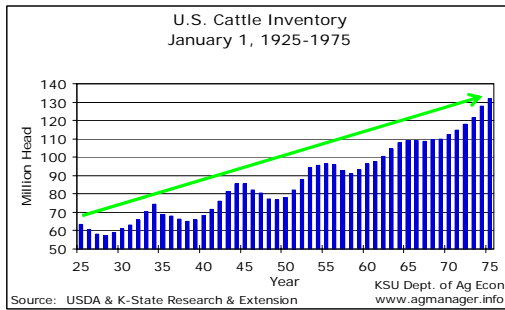
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## A Picture of A Healthy Industry



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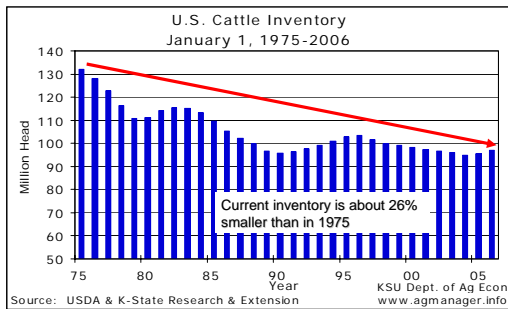
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## A Shrinking Industry Responding to a Lack of Profitability



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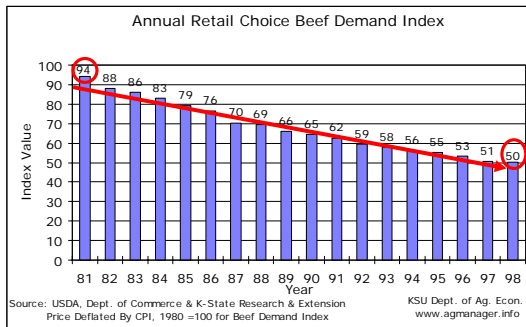
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## Measuring Changes In Beef Demand 1980-1998



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## Beef Demand Decline Was Devastating

- What's the linkage between retail beef demand & cattle producers?
  - Retailers demand for wholesale beef is derived from demand for retail beef products
  - Packer demand for fed cattle is derived from demand for wholesale beef products
  - Feedlot demand for calves & feeder cattle is derived from demand for fed cattle

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## Beef Demand Decline Was Devastating

- Who bore brunt of long-term beef demand decline?
  - Feedlots & beef processors?
    - No, margin operators adjusted to demand reductions
  - Answer: Cow-calf producers
    - How?
      - Lower returns for cow-calf producers
        - Labor
        - Land
        - Other capital

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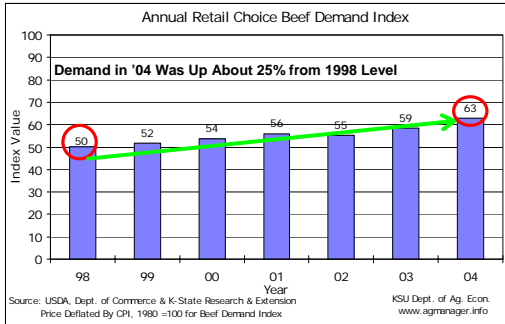
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## Measuring Changes In Beef Demand 1998-2004



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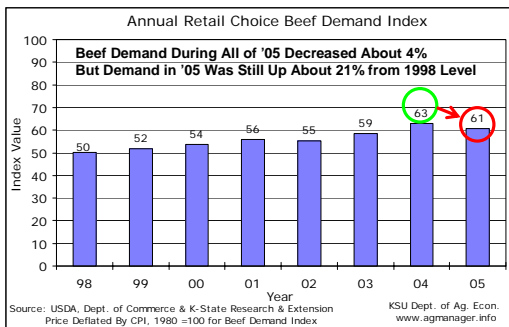
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## Measuring Changes In Beef Demand 1998-2005



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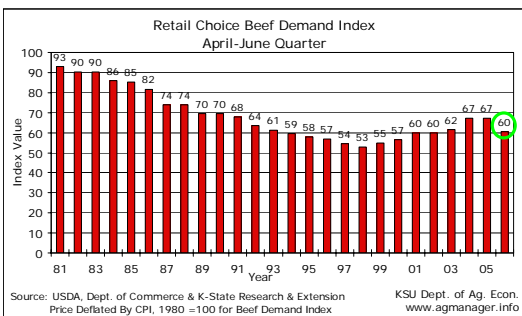
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## 2<sup>nd</sup> Quarter Demand Index Fell About 10% Below A Year Ago



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### Beef Demand Shifters What's been taking place recently?

- Low carb diet effect has worn off
- Consumer income growth slowing
- Expect more domestic demand weakness
- How do we turn this around?

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### Who Benefits Most from Beef Demand Increases?

- In the long run:
  - Cow-calf producers
- How?
  - Higher prices for calves & culls
    - Profitability Increases
    - Rise in profitability leads to industry expansion

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### Trade

- All trade is voluntary
- All trade is mutually beneficial
- International trade increases consumption possibilities

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### If Trade Is So Good, Why Is It Controversial?

- Free markets and free trade increase social welfare (benefits outweigh costs) for society at large
- But not all individuals and groups are made better off

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### Rapid Increase in Trade: Why?

- Huge benefits from specialization in comparative advantage and trade
- Floating (market-based) exchange rates: since 1973
- Tremendous advances in communication and transportation
- Free trade agreements: NAFTA, GATT, WTO

#### Result

- International trade stimulated economic growth

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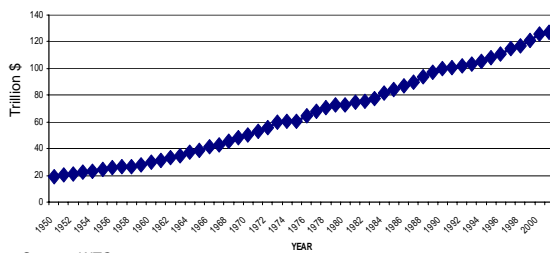
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### Increases in Trade Fueled Economic Growth

#### WORLD GDP (WTO)



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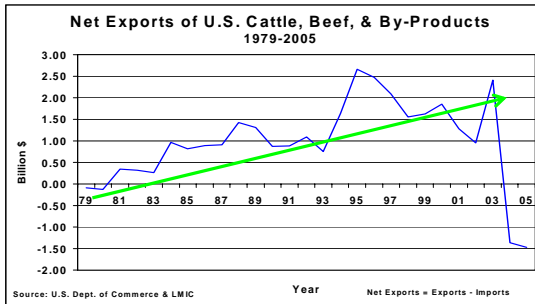
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### U.S. Has Been A Net Exporter Since 1981



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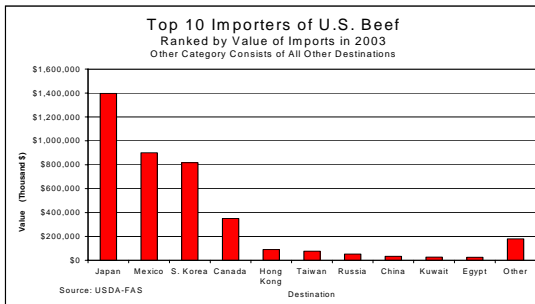
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### Top 5 Importers Accounted for 91% of U.S. Exports



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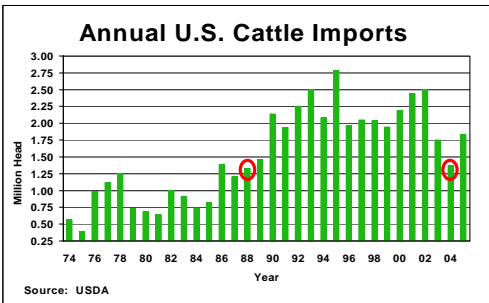
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### U.S.-Canada Border Closure Led To Smallest Cattle Imports Since Late-1980's



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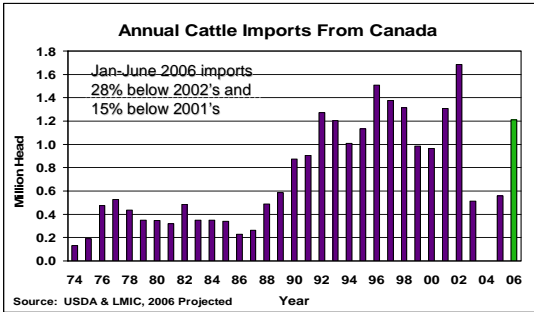
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**Cattle Imports from Canada Are Increasing  
But Remain Well Below 2002's Record Level**



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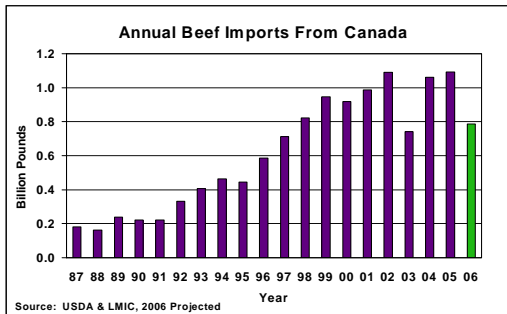
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**Beef Imports From Canada Decline**



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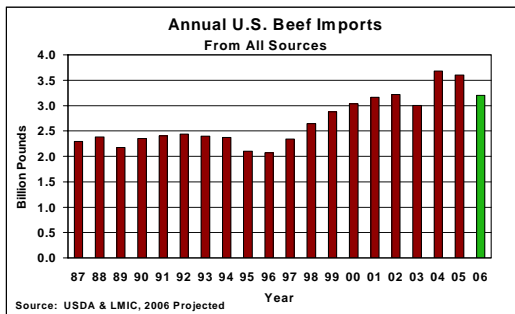
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**Result: U.S. Imports Falling Below 2005's**



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Increases in Beef Industry Concentration

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Cattle Feeding Concentration Increasing

1975

7 Major Feeding States

- 56,221 feedlots marketed 15 million cattle
- Average marketings/feedlot = 267 head
- Feedlots > 1,000 hd. (1,221 lots) marketed 74% of cattle

Source: USDA, Cattle On Feed      7 states = AZ, CA, CO, IA, KS, NE, TX

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Fewer But Larger Cattle Feeders

1995

7 Major Feeding States

- 23,472 feedlots marketed 20.2 million cattle
- Average marketings/feedlot = 858 head
- Feedlots >1000 hd. (1,584 lots) marketed 93% of cattle

Source: USDA, Cattle On Feed      7 states = AZ, CA, CO, IA, KS, NE, TX

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## Even Fewer But Larger Cattle Feeders

2004

### 7 Major Feeding States

- 14,932 feedlots marketed 20.4 million cattle
- Average marketings/feedlot = 1,369 head
- Feedlots >1000 hd. (1,632 lots) marketed 95% of cattle

Source: USDA, Cattle On Feed      7 states = AZ, CA, CO, IA, KS, NE, TX

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## Largest Cattle Feeding Firms, 2005

Rank	Firm	# of Lots	1-Time Cap. (head)
1	5 Rivers Ranch	10	811,000
2	Cactus	10	520,000
3	Cargill	4	300,000
4	Frona	4	275,000
5	AzTx	4	232,000

Source: Cattle Buyers Weekly

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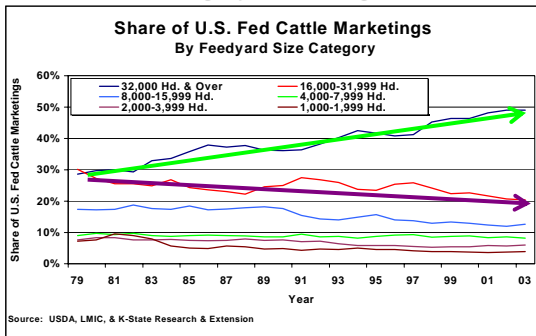
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## Which Size Category Is Gaining Market Share?



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### Why Is Feedlot Concentration Increasing?

- Lower costs for larger firms
- Why?
- Larger firms in better position to utilize
  - Technology
  - Management skills
    - Labor management
    - Financial management
    - Marketing management
- Implication: Small & medium size feeders operate at a cost disadvantage

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### Beef Packing Sector Concentration Increased Dramatically

- 4-Firm Concentration Ratio (CR4) increased from 41% to 78% during '80's
  - Transition to large plant sizes was dramatic
  - 1972
    - 70% of all slaughter in plants handling less than 250,000 hd/year
    - 35% of all slaughter in plants handling less than 100,000 hd/year
  - 1992
    - 70% of all slaughter in plants handling over 500,000 hd/year
    - 4% of slaughter in plants handling less than 100,000 hd/year

Source: McDonald & Ollinger, 2005

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### Large Packing Plants Have Lower Costs

- Eliminating wage differentials across plant sizes provided incentive to build large packing plants
- Large plants paid higher wages in '60's & '70's
  - 1960-1972
    - Plant size ↑1% -wages 9% ↑ than mid-size plant
  - 1982
    - Plant size ↑1% -wages 6% ↑ than mid-size plant
  - 1992
    - Plant size ↑1% -no change in wages

Source: McDonald & Ollinger, 2005

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### What Motivated Shift to Large Plants in 1980's?

- Change in packing plant labor costs facilitated shift to larger plants in the Plains
  - 1978, 45% of meat product workforce was unionized
  - Union workers wages 29% > non-union workers
  - 1987, just 21% of workforce unionized
  - In 1960's & 1970's, meatpacking wages 14 to 18% > than manufacturing wages
  - 2002, meatpacking wages were 25% below manufacturing wages

Source: McDonald & Ollinger, 2005

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### Have Packing Industry Changes Been Good or Bad?

- Meat packing labor productivity increased
  - Index of output per hour rose 80% from 1970 to 1998
- 1970 -1998, inflation adjusted spread between live and wholesale beef prices declined 57%
- Technology & productivity improvements
  - reduced farm-wholesale price spread by \$0.23/cwt.
  - boosted live cattle prices \$1.75/cwt.

Source: Marsh & Brester, 2001

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### Have Packing Industry Changes Been Good or Bad?

Shift toward larger plant sizes reduced costs dramatically

#### Industry Weighted Average Processing Costs

<u>Year</u>	<u>Per Head Cost (1992\$)</u>
1977	\$131.42
1992	\$96.58
1997	\$90.65
2002	\$85.09

Source: McDonald & Ollinger, 2005

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## What About the Rest of the Food Supply Chain?

### Beef Packer & Retail Grocer Concentration 2004 concentration levels (approximate)

<u>Top 4 Beef Packers</u> (steer & heifer slaughter)	<u>Top 4 Retail Grocers</u>
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82% Market Share

33% Market Share

Tyson  
Cargill  
Swift & Co.  
National Beef

Wal-Mart (15%)  
Kroger (7%)  
Costco (6%)  
Albertsons (5%)

Sources: GIPSA-USDA, Cattle Buyers Weekly, and Supermarket News, Top 75 Grocery Retailers

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## Corn Prices & Ethanol

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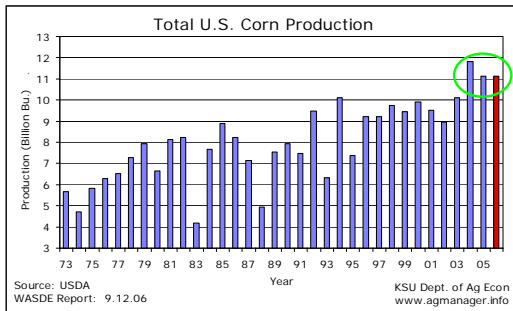
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## 3 Largest Corn Crops On Record



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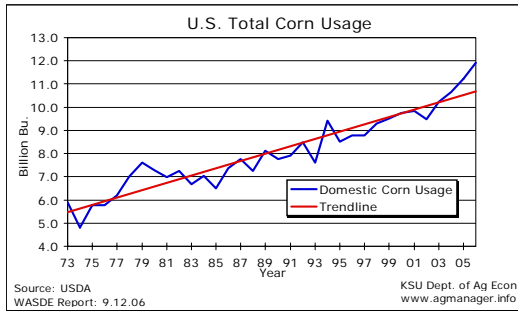
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## But Corn Usage Has Been Growing Rapidly



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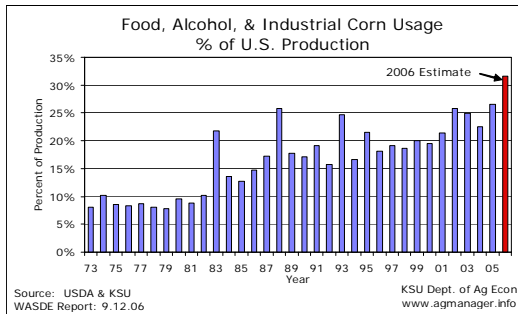
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## Ethanol Usage Growing Rapidly



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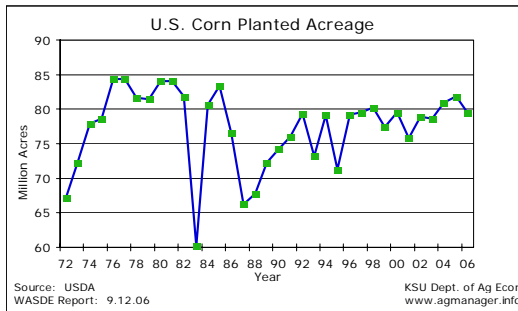
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## U.S. Will Need More Corn Acres How Do We Get Them?



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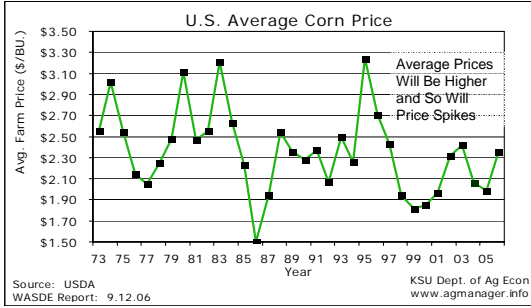
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## It Will Take Higher Prices To Push Acreage Higher



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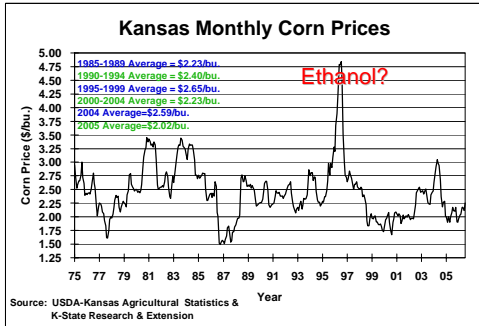
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## Where Are Corn Prices Headed? Higher Corn Prices Spell Trouble for Livestock Producers



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## Where Are We Headed?

### Trade

- U.S. strength is in high quality beef products
- Other countries may have comparative advantage in cow-calf production
- Exports to Pacific Rim ramping up in '07
- Regaining market share could take several years
- Consumer incomes in importing countries are key to long-run growth in exports

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## Where Are We Headed?

### Beef Packing Sector

- Lower costs encouraged growth of large packing plants
- Lower costs, procurement, marketing and food safety advantages have all encouraged growth of large firms
- Bulk of gains from transition to large plants & firms have already been realized
- Future developments likely to be in more vertical alliances or integration
- Small packing plants operate at huge cost disadvantage
  - Future Beef (Winfield, KS) - Bankrupt
  - Iowa Quality Beef Supply Network (Tama, IA) - Bankrupt

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## Where Are We Headed?

### Beef Demand

- Low-Carb Diet Fad Has Run Its Course
- Weaker Domestic Demand Lies Ahead
- Strengthening Export Markets Could Help Offset Domestic Weakness
- Opportunities abound for innovators

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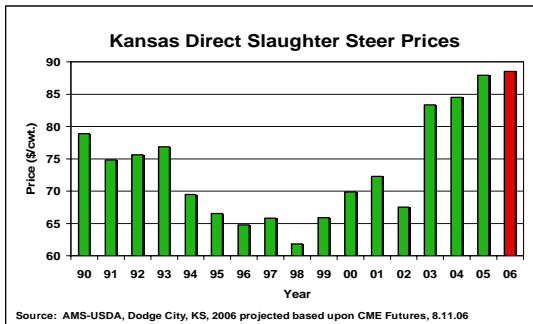
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## Prices Could Wind Up Record High Again in '06



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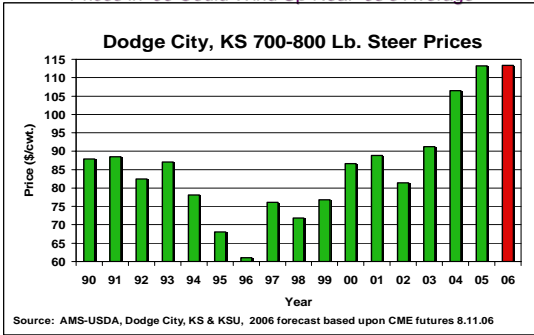
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Feeders In '05 Averaged A Record High of \$112/cwt.  
Prices in '06 Could Wind Up Near '05's Average



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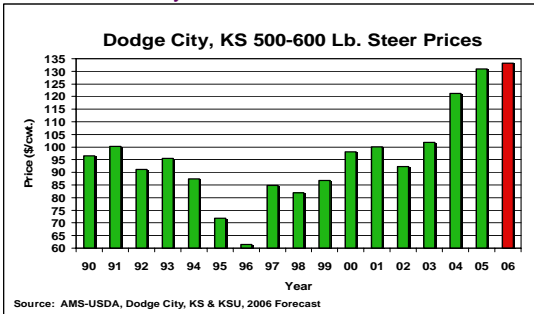
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Record High Calf Prices Again In '05  
Cycle Peak in '05 & '06



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## CHINESE PROVERB

- If you want happiness for an hour,  
– take a nap.
- If you want happiness for a day,  
– go fishing.
- If you want happiness for a week,  
– take a vacation.
- If you want happiness for a year,  
– inherit a fortune.
- If you want happiness for all your life,  
– help others.

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# IMPACT OF ADDED VALUE PROGRAMS ON BEEF STOCKER PRODUCERS

LEANN SAUNDERS  
IMI GLOBAL, INC.


**USVERIFIED**

Impact of Added Value Programs  
on Beef Stocker Producers

*Leann Saunders*  
*IMI Global*

**Beef Stocker Field Day 2006**

[www.usverified.com](http://www.usverified.com)  
[www.cattlenetwork.com](http://www.cattlenetwork.com)  
[www.imiglobal.com](http://www.imiglobal.com)



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**USVERIFIED**

**What Do I Do? Where Do I  
Focus?**

- Who is your customer?
- What is it that your customer expects?
- How can you add value?



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**US VERIFIED**

## It All Starts With the Consumer

- Food production practices, they want to know more
  - WHO, WHAT, WHEN WHERE?
- Brands establish specifications
- Brands must differentiate to survive
- Verification of Claims
  - Source Verification
  - Age Verification
  - “All Natural” and “Organic” Movement
  - Humanely Handled
  - Local
- Creating an Emotional Connection




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**US VERIFIED**

## Promoting Consumer Confidence – Credence Attributes

- Credence—Acceptance as true or valid
- Attribute—genetics, health, management, etc...
- “Many valuable animal attributes are not evident to the naked eye or specialized equipment”

*This is your greatest opportunity to create the fastest growing category in the country—naturally*  
(while supplies last)



**WHY WILL YOUR CUSTOMERS UPGRADE TO ORGANIC SMART CHICKEN?**

- ✓ USDA Certified 100% Organic
- ✓ Free Range
- ✓ No Added Water
- ✓ Cholesterol-free
- ✓ Noantibiotics
- ✓ No Fat Animal Byproducts
- ✓ Sustainably Farmed
- ✓ Proven Better for Your Family!
- ✓ 100% All Natural

Call the Mission of the USDA Poultry Division at 800-858-9888 to become the United States of Smart Chicken® Organic. **Altogether!** Evaluation begins in May/September 2006 when the first all-natural organic product is introduced to the marketplace.




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**US VERIFIED**

## Jim Riemann Of Certified Angus Beef®

- 18% of all US beef retailers carries one of the 63 brands certified by the USDA
- Two years ago, 26 certified brands used “Angus” in their name; in 2006 there are 46
- In the last six months, CAB has created two “brand extensions”—CAB Natural and CAB USDA Prime



Source: Jim Riemann at Beef Australia, May 2006




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**US VERIFIED**

## Natural Foods Phenomenon

- "If you can't beat them join them. That seems to be the consensus among conventional retailers when it comes to the natural foods phenomenon."
- Whole Foods and Wild Oats have been realizing growth rates of 15% annually. "That's not a fad, but a trend", says Alan Warren, Ukrop's Supermarkets

Source: Meat and Seafood Merchandizing, May 2004




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
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**US VERIFIED**

## Degrees of "Natural"

- "Minimally processed, no artificial ingredients"
- "Tested for Antibiotics and Pesticides"
- "No added hormones and No antibiotics for the last 120 days"
- "No added hormones and No antibiotics EVER"—"Never, Ever"
- USDA Non-Hormone Treated Cattle Program (NHTC)




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
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## "No added Hormones, No Antibiotics"

Ground Beef		
King Sooper's (private label)	80% lean	\$2.99/lb
Coleman's ("Never, Ever")	85% lean	\$4.99/lb
Laura's Lean	92%lean	\$5.99/lb
Coleman's ("Never, Ever")	93% lean	\$6.49/lb
King Sooper's (private label)	96% lean	\$4.79/lb
Ribeye Steaks		
Choice Tender Aged	Lower 1/3 Choice	\$11.99/lb
Butcher's Premium Angus	Upper 2/3 Choice	\$13.99/lb
Coleman "Never, Ever"	Lower 1/3 Choice	\$15.99/lb
Top Loin Steaks		
Choice Tender Aged	Lower 1/3 Choice	\$12.99/lb
Butcher's Premium Angus	Upper 2/3 Choice	\$14.99/lb
Coleman "Never, Ever"	Lower 1/3 Choice	\$16.99/lb

Source: Gary C. Smith (Colorado State University) June 2006


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## Valuable Export Customers






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## U.S. Beef Export Summary

Market impact from closing the borders.



**Beef Cut Exports**  
\$9.50 to \$10.00/cwt

**Variety Meat Exports**  
\$3.00 to 4.00/cwt

**Other Export Value**  
\$.50 to \$1.00/cwt

**TOTAL IMPACT**  
\$13 to \$15 per cwt  
\$165 to \$190 per head

Funded by America's Beef Producers. SOURCE: CattleFax 2004

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### Verification Programs Required to Export

- EV- Export Verification
- USDA PVP- Process Verified Program
- USDA QSA- Quality Systems Assessment
  - Age (30 month of age or less for most countries)
  - Japan (20 months of age or less)
  - Europe (No-Hormone Treated Cattle)






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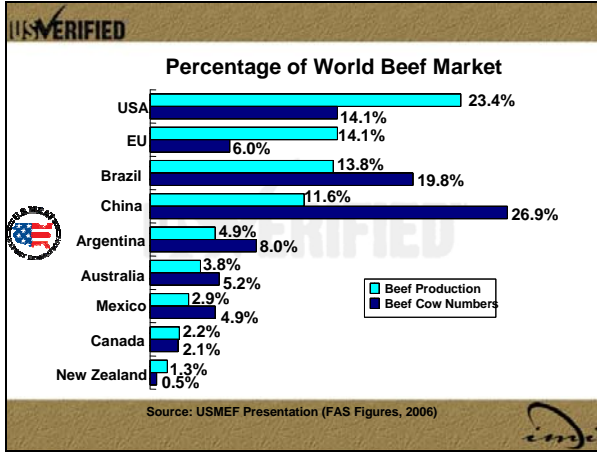
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### More Than a Food Purchase

- Increasing global concern regarding “authority buying” (e.g. 41% of all EU food purchasers want to know the “who”, “what”, “where” and “when” of food production).
- Increasing global concern about “animal welfare” (of particular concern are confinement and transport).
- Increasing global concern in “social responsibility” (e.g., enteric methane production by ruminants, holistic resource management, environmental/ecological sustainability).

Source: Ruben Rose (MLA) Beef Australia, May 2006, excerpt from Dr. Gary Smith’s Slides (Colorado State University)

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# KNOW YOUR CUSTOMER!!

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## Coleman Eco-Project

20 million ways for you to make an impact

My dad, Mel Coleman Sr., Allen (founder of [Petaluma Poultry](#)) and I strongly **share a belief that if our lands are properly managed, watersheds and wildlife benefit along with humans.** That's why this year we started a decade-long cause-related **partnership with two of the most respected non-profit organizations in the country – [American Farmland Trust \(AFT\)](#) and [American Forests \(AF\)](#) – by founding the Coleman Eco-Project 2015. **The next 10 years will be dedicated to joint efforts designed to improve and preserve the environment, and to strengthen the future of American agriculture.****

Source: [www.colemannatural.com](http://www.colemannatural.com), June 2006




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## Passion and a Purpose



• **"We care about more than just selling our products.** The Coleman family and company have always been dedicated to preserving the environment."

• This year natural/organic and conventional grocery retailers [Wild Oats Markets](#), [Dorothy Lane Markets](#), [Knowlan's](#), [the North Atlantic region of Whole Foods Markets](#) and select A&P stores will display a tear pad with a UPC code that will permit customers to make a one-dollar contribution at each store checkout to the Coleman Eco-Project 2015

Source: [www.americanforest.org](http://www.americanforest.org), June 2006




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## Better Beef from Start to Finish.

Every step from ranch to retail to **Produce Perfect**

**You husband the herd, we husband the cattle.**

**You husband your name and we'll husband the land.**

**Steaks for Grilling/Smoking**  
**Beef for Steeking**  
**Beef for Stir Frying**  
**Beef Steaks**  
**Beef Steaks for Marinating**  
**Steaks for Smoking**  
**Ground Beef**  
**Beefsteak Packs**





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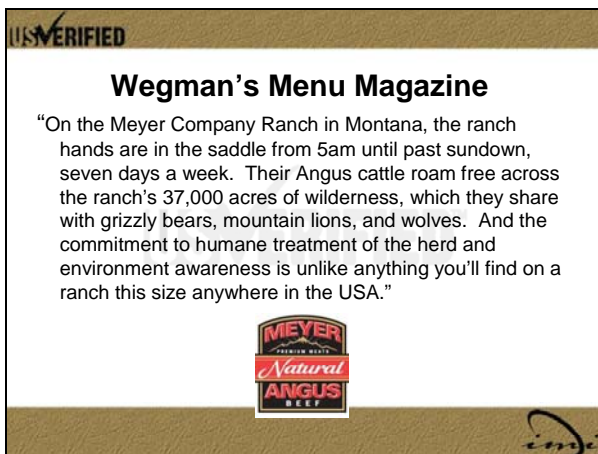
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## “Trends to Track”

- #1 Continued Growth Of Brands
- #2 More Beef with a Story
- #3 More Detailed Meat Labels
- #4 More Specialty Meat Products
- #5 Consumers Want to Know How You Produced It
- #6 Convenience is Still Key

Source: BEEF, May 2006




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## Determine Your Fit

- Know the buyer’s needs—Align with a System
- Establish a target based on market demands
  - Pre-conditioning
  - PI-Free
  - Source Verified
  - Age Verified
  - All Natural
  - Non-Hormone Treated Cattle for Europe
  - Breed Specific
  - Humanely Handled
  - Animal Identification and Traceability (Identity Preservation)




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## The More Options the More Value

		Source and Age	NHTC
		Natural	Source and Age Natural
VAC 45	Source	VAC 45	Historical Performance
Historical Performance	VAC 45	PI-Free	VAC 45
	Historical Performance	Historical Performance	PI-Free
		Humanely Handled	Humanely Handled
			Breed Claim




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### Verifying Claims- Requires Quality Management Systems

- USDA PVP- Process Verified Programs
- USDA QSA – Quality Systems Assessment Programs
  - Source and Age
  - NHTC (No- Hormone Treated Cattle)
  - No Antibiotics
  - Just the beginning



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### Your Quality Management System ... Must be an Auditable System



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
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### Quality System Requirements

- Communicate Requirements
- Approve Suppliers (Supplier Evaluations)
- Transfer of information with “groups”
- Preserve Identity
  - DOCUMENTED PROCEDURES!!
    - RECEIVING
    - IDENTIFICATION AND TRACEABILITY
    - SHIPPING
    - HOW I HANDLE NON-CONFORMING CATTLE



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## Quality System Requirements

- Employee Training
- Customer Focus/Satisfaction
- Continuous Improvement
- Records to Support Identity Preservation
  - Cattle Movement Records
  - Health Records
  - Feed Records
  - Receiving, Shipping, Processing, etc...
- Monitoring and Measuring
- You are a Supplier---you will be evaluated




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## Quality System/PVP or QSA REVEALED



Current Practices & Management Documented

Annual audits to Verify your system

Business as usual - maybe even BETTER




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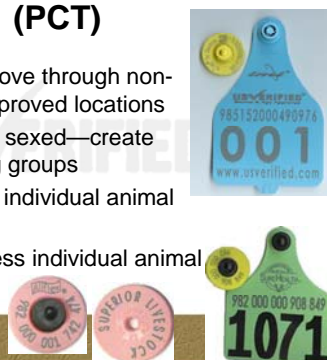
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## Value of Program Compliant Tag (PCT)

- Allows cattle to move through non-QSA and PVP approved locations
- Sorted, sized and sexed—create optimal marketing groups
- Serves as unique individual animal identifier
- Buyers must access individual animal age information




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## Where Do I Start?

- Align with a system interested in value-added cattle based on your best target opportunities
- Look at your own QSA or PVP or look at those companies that already have approved programs
  - Feedlot's with approved programs
  - States
  - Marketing (Superior, Livestock Markets)
  - IMI Global has an approved program (source, age, NHTC)

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Trust Our Experience  
"Your Solution for Verification and Data Management Systems"

[www.USVerified.com](http://www.USVerified.com)

- ▶ QSA (Quality System Assessment)
- ▶ PVP (Process Verified Programs)
- ▶ SUPPLY VERIFICATION
- ▶ UPCOMING QSA SALES
- ▶ IMI GLOBAL
- ▶ CATTLE STOCK
- ▶ SOURCE AND AGE LOGS
- ▶ APPROVED SUPPLIER LISTS

▶ QSA (Quality System Assessment)  
Are you prepared for Source and Age Verification? Let IMI's team of experts help you build, maintain, and manage your:  
 USDA QSA Approved Programs  
 USDA Export Verification Approved Programs  
 USDA NHTC Approved Programs  
 Document Control Systems  
 USDA's QSA Website  
[AGE EXPORT CALCULATOR](#)

▶ PVP (Process Verified Programs)  
Verify your marketing claims and use the USDA Shield in your marketing material  
 Document Control Systems  
 USDA's PVP Approved Programs  
 USDA's PVP Website  
 USDA PROCESS VERIFIED

▶ Supply Verification (Supplier Evaluation and Auditing)  
Let USDA approved process for offsite supplier evaluations

USDA

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“The consumer will place greater demands on the livestock producer to tell them where their food came from and how it was produced.....

...FAILURE TO RESPOND TO THIS DEMAND IS NOT AN OPTION.”

Dr. John Paterson, ILC—2003, Houston Texas




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**USDA**  
PROCESS  
VERIFIED

IMI Global is a USDA Process  
Verified Company\*  
\* for specific claims visit  
<http://ProcessVerified.USDA.Gov>

**USDA**  
PROCESS  
VERIFIED

TO CONTACT IMI:

- Call 303-895-3002 or 816-858-4796
- Send an email to [Info@imiglobal.com](mailto:Info@imiglobal.com)
- Visit our websites:  
[www.imiglobal.com](http://www.imiglobal.com), [www.usverified.com](http://www.usverified.com), [www.cattlenetwork.com](http://www.cattlenetwork.com)







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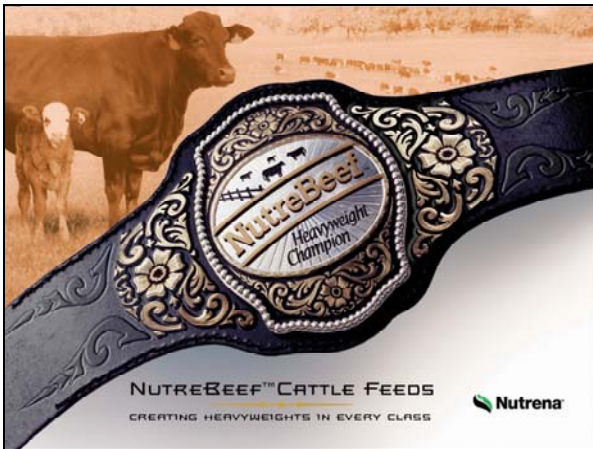
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# BREAKEVEN STOCKER MANAGEMENT STRATEGIES

BRYAN MCMURRY  
CARGILL ANIMAL NUTRITION



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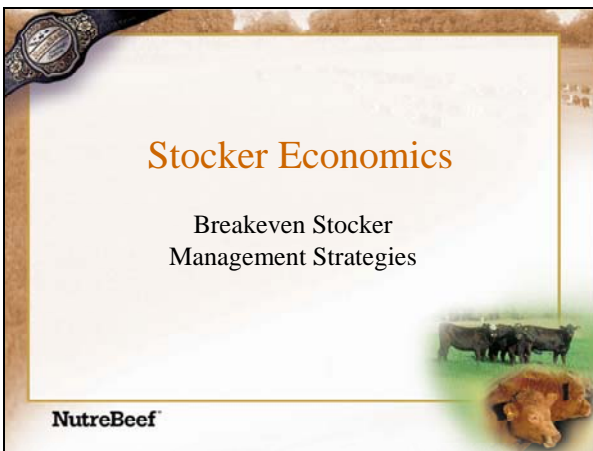
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## Functions of Stocker Segment

1. Grow calves in preparation for the finishing or feedlot phase.
2. Develop calves of small biological type prior finishing.
3. Supply chain management for feed yards to control the seasonal flow of cattle, and capture seasonally low prices for calves.



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## Functions of Stocker Segment

1. Grow calves in preparation for the finishing or feedlot phase.
2. Develop calves of small biological type prior finishing.

**The key to 1 and 2 is that per unit cost of production must be lower than can be achieved in a background operation.**



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## Gross Margin

700 lb. Feeder Steers

	\$/lb.	\$0.95	\$1.00	\$1.05	\$1.10	\$1.15	\$1.20
500 lb. Steer	\$1.10	\$115.00	\$150.00	\$185.00	\$220.00	\$255.00	\$290.00
Calves	\$1.20	\$65.00	\$100.00	\$135.00	\$170.00	\$205.00	\$240.00
	\$1.30	\$15.00	\$50.00	\$85.00	\$120.00	\$155.00	\$190.00
	\$1.40	(\$35.00)	\$0.00	\$35.00	\$70.00	\$105.00	\$140.00
	\$1.50	(\$85.00)	(\$50.00)	(\$15.00)	\$20.00	\$55.00	\$90.00
	\$1.60	(\$135.00)	(\$100.00)	(\$65.00)	(\$30.00)	\$5.00	\$40.00



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### Gross Margin

600 lb. Feeder Steers

	\$/lb.	\$0.95	\$1.00	\$1.05	\$1.10	\$1.15	\$1.20
400 lb. Steer	\$1.10	\$130.00	\$160.00	\$190.00	\$220.00	\$250.00	\$280.00
Steer	\$1.20	\$90.00	\$120.00	\$150.00	\$180.00	\$210.00	\$240.00
Calves	\$1.30	\$50.00	\$80.00	\$110.00	\$140.00	\$170.00	\$200.00
	\$1.40	\$10.00	\$40.00	\$70.00	\$100.00	\$130.00	\$160.00
	\$1.50	(\$30.00)	\$0.00	\$30.00	\$60.00	\$90.00	\$120.00
	\$1.60	(\$70.00)	(\$40.00)	(\$10.00)	\$20.00	\$50.00	\$80.00

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### Gross Margin

Weight	Cost	
	\$/lb.	\$/head
500 lb.	\$1.40	\$700
400 lb.	\$1.50	\$600
		\$100

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### Gross Margin

Weight	Price	
	\$/lb.	\$/head
700 lb.	\$1.10	\$770
600 lb.	\$1.20	\$720
		\$50

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### Gross Margin

<u>Cost</u>	<u>Price</u>	<u>Margin</u>
\$600	\$720	\$120
\$700	\$770	\$70
		\$50


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### Breakeven COG

<u>Weight</u>	<u>Margin</u>	<u>\$/lb.</u>
500 lb.	\$70	\$.35
400 lb.	\$120	\$.60

Note: 200 lbs. of gain in a 100 day grazing period


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### Profit/Loss

	<u>500 lb.</u>	<u>400lb.</u>
Grazing	\$50.00	\$50.00
Processing	\$12.00	\$12.00
Vet/Med	\$2.00	\$4.00
Mineral	\$6.00	\$6.00
Hay	\$5.60	\$5.60
Interest - Cattle	\$10.79	\$9.25
Total Cost	<del>\$86.39</del>	<del>\$86.85</del>
Profit/Loss	<del>-\$16.39</del>	<del>\$33.15</del>

Note: 200 lbs. of gain in a 100 day grazing period


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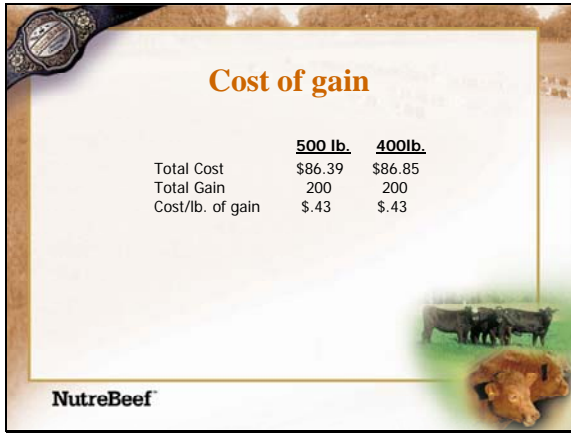
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### Cost of gain

	<u>500 lb.</u>	<u>400lb.</u>
Total Cost	\$86.39	\$86.85
Total Gain	200	200
Cost/lb. of gain	\$.43	\$.43



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### Profit/Loss

	<u>500 lb.</u>	<u>400lb.</u>
Feed	\$96.00	\$90.00
Processing	\$12.00	\$12.00
Veterinary	\$2.00	\$4.00
Interest	\$12.48	\$10.88
Total Cost	<u>\$122.48</u>	<u>\$116.88</u>
Profit/Loss	\$27.52	\$53.12

Backgrounding Scenario:  
500 lb. calf at 3.5#ADG  
400 lb. calf at 3.0#ADG



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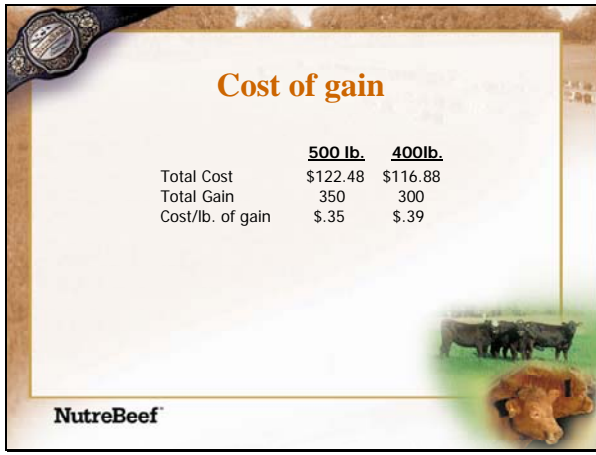
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### Cost of gain

	<u>500 lb.</u>	<u>400lb.</u>
Total Cost	\$122.48	\$116.88
Total Gain	350	300
Cost/lb. of gain	\$.35	\$.39



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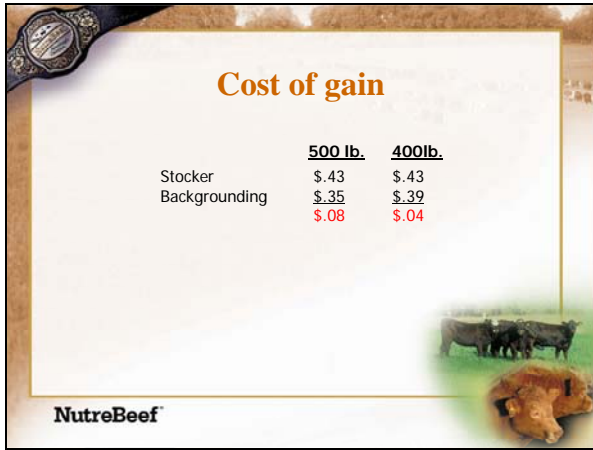
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### Cost of gain

	<u>500 lb.</u>	<u>400lb.</u>
Stocker	\$.43	\$.43
Backgrounding	<u>\$.35</u>	<u>\$.39</u>
	<b>\$.08</b>	<b>\$.04</b>



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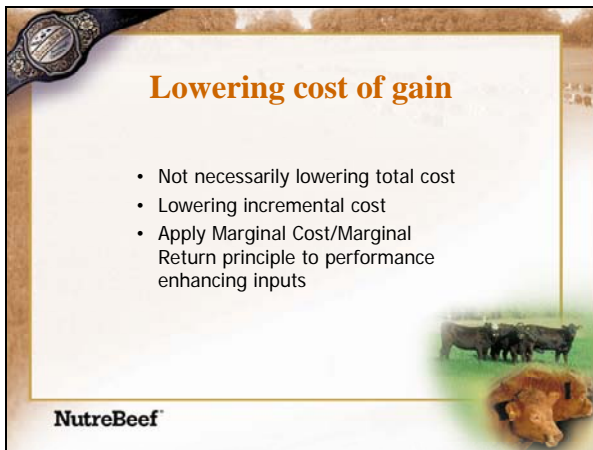
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### Lowering cost of gain

- Not necessarily lowering total cost
- Lowering incremental cost
- Apply Marginal Cost/Marginal Return principle to performance enhancing inputs



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### Marginal Cost

- The cost incurred to produce one additional unit of output.
- The cost to produce one additional pound of live weight (beef).



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**Marginal Return**

- The price received for one additional unit of output.
- The price received for one additional pound of live weight (beef).



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**MC/MR Principle**

- Continue to increase inputs until MC is equal to MR
- In reality we will likely curtail inputs short of MC=MR



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**Marginal Return**

- The per lb. price you will be paid for you cattle at sale time
- For a:
  - 700 lb. feeder steer that is \$1.10
  - 600 lb. feeder steer that is \$1.20



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### Marginal Cost

- Lets use an example of an input that is common among top producers.
- Balanced mineral with growth promoting additives.



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### Marginal Cost

- Assumptions:
  - Mineral cost \$600/ton
  - Mineral intake .2 lb./day
  - Production increase .25 lb./ADG

$\$600/2000 * .2/\text{day} = \$.06/\text{day}$



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### Marginal Cost

Assumption:

Production increase .25 lb./ADG

1 lb./ .25 lb. per day = 4 days

$\$.06/\text{day} * 4 \text{ days/lb.} = \$.24/\text{lb}$



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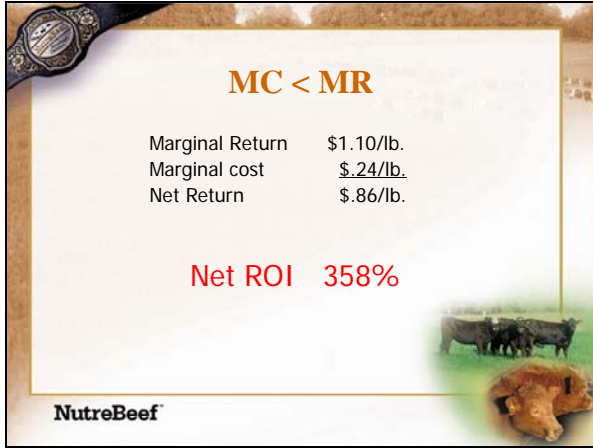
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### MC < MR

Marginal Return	\$1.10/lb.
Marginal cost	<u>\$.24/lb.</u>
Net Return	\$.86/lb.

Net ROI 358%

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### Profit increase per head

Value Gain - 25lbs. * \$1.10/lb.	\$27.50
Per head cost	<u>\$6.00</u>
Per head net return	\$21.50

Net ROI 358%

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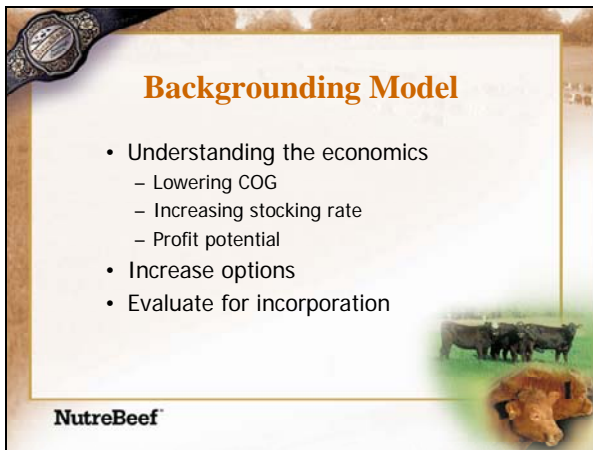
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### Backgrounding Model

- Understanding the economics
  - Lowering COG
  - Increasing stocking rate
  - Profit potential
- Increase options
- Evaluate for incorporation

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**Summary Points**

- Consider lighter starting weights
- Calculate spreads
- MC/MR
- ROI of inputs
- Evaluate backgrounding model



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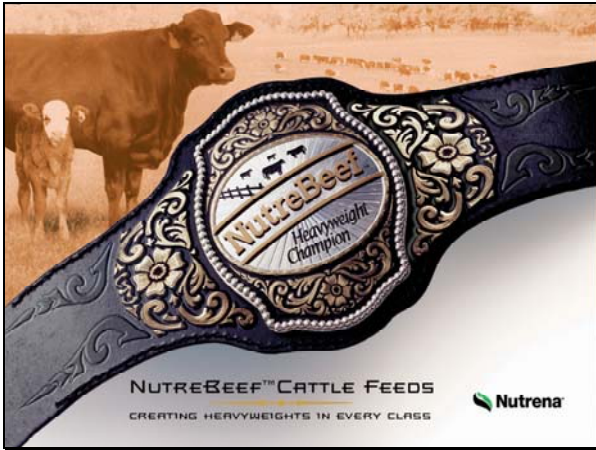
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
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**NUTREBEEF™ CATTLE FEEDS**  
CREATING HEAVYWEIGHTS IN EVERY CLASS



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# UTILIZATION OF INDIVIDUAL STOCKER INFORMATION FOR VALUE

BRAD WHITE, DVM, MD  
KANSAS STATE UNIVERSITY,  
COLLEGE OF VETERINARY MEDICINE

## Key Points

- Stocker calves are managed as groups, yet individual identification provides more information to the farm decision maker.
- Individual animal information can be used to divide health and performance figures into relevant sub-groups for further analysis.
- Animal health records are a significant component of the decision process regarding diagnosis and treatment plan formulation, and individual animal identification facilitates evidence based decisions.

## Individual Identification in the Stocker Systems

Animals entering the stocker unit are often identified by group or sale lot. Individuals may be designated by farm tags, or have new unique numbers placed at arrival. Cattle are managed as groups, but individual identification offers management benefits to the operational decision makers. Electronic identification facilitates record keeping on individual animals and offers advantages related to data entry and management.

Performance and health statistics are important to the profitability of the stocker operation. The utility of individual animal identification is not to use the information solely for decisions about that calf, but rather to divide the data into relevant sub-groupings for analysis. Classification of individual animal data into groups should be based on areas where management decisions impact outcomes. An example includes response rates to a specific therapy in a distinct class of cattle. Performance based on animal type or source may also be used to generate specific breakeven purchase values calculated by historical data.

## Evidence-Based Animal Health Decisions

Any good health program is in constant evolution and improvement based on the cycle of implementation, evaluation, change and repeat. Evaluation is based on good records including diagnosis evaluations, treatment response rates, disease rates, and necropsy findings.

Our ability to maintain good health statistics on the animals starts at initial processing or on arrival. Each group of calves entering the facility should be recorded along with initial procedures performed to these animals. Accurate processing records are important to enable us to maintain quality controls and evaluate product performance. This is also important because the administration of many products induces a withdrawal time on each set of calves and proper records makes compliance with withdrawal times possible.

Recording the number of head, where they came from and which pen they were placed in is critical for determining disease and mortality incidence rates. These numbers can be maintained with minimal time and effort.

Bovine Respiratory Disease (BRD) is the primary cause of morbidity and mortality in the preconditioning yard. Cattle illness creates expenses related to death loss, treatment cost, and reduced performance (gain, feed efficiency). Evaluation of number of animals pulled from the pen is an important tool for continual improvement of diagnosis techniques. Rectal temperature can provide a quick, general guide for assessment of pulling patterns. A good rule of thumb is 5-10% of the pulls with a rectal temperature of 104° F or less. If more than 10% has a lower temperature, there may have been too many animals pulled or the diagnosis may not be infectious respiratory disease. If all the pulls have a rectal temperature of 105° F or higher then it is likely that there are more animals in the pen that need to be segregated and treated. If only a handful of the animals pulled for treatment have a fever, we may have misdiagnosed illness in some of the animals and pulled too many.

Pen morbidity and mortality rates are good gauges for level of illness within the group of calves. These rates can be benchmarked against other groups of similar type animals on the farm and through the industry to evaluate health performance. Individual animal treatment records are important not only for evaluating animal response, but also for ensuring adherence to drug withdrawal guidelines. All individual treatments should be recorded on a daily basis including the date, animal treated and the drugs administered. It may also be helpful to institute a simple visual measure such as notching an ear tag or placement of a special treatment identification to determine how many times an animal has been treated.

The first treatment response rate is an important number when evaluating efficacy of the initial treatment regime. This number is calculated by dividing the number of animals retreated by the number of first pulls. This reveals the retreatment rate; conversely first treatment response rate is one minus the retreatment rate. Ideally, the first treatment response rate should be greater than 80%. The rate may be below the target due to: ineffective treatment selection, misdiagnosis of the disease condition, or delayed intervention (failed to notice until too late).

The treatment interval is the distance between the first and second treatment (although it may be calculated using any two successive treatments). The average treatment interval is influenced by the drug selected at the first treatment and the presence or absence of a post-treatment moratorium. Excessively long treatment intervals on a pen basis may indicate disease clearance and reinfection. Long treatment intervals on individuals may indicate a calf which never fully recovered from the initial insult and was not retreated until disease had progressed.

The Case Fatality Rate (CFR) is also a good method to evaluate both disease identification and treatment regime. CFR is calculated by dividing the mortality number by the number of animals treated. Ideally, the CFR is in the 6-8% range depending on the type and risk level of the animals. A higher CFR could indicate poor treatment selection, misdiagnosis of disease, or delayed identification of sick animals. A low CFR could mean that too many calves were pulled and treated and the health program is economically inefficient.




## **Summary**

Stocker operations differ significantly in management techniques and health programs. The utility of individual animal identification is to improve the decision process related to evaluation of health and performance records. Electronic identification minimizes the labor required for data entry and management, but is not necessary for an operation to maintain individual calf records.

**ARE STOCKER IMPLANTS STILL  
RELEVANT FOR TARGETED QUALITY  
GRADE PROGRAMS?**

**CHRIS REINHARDT  
KANSAS STATE UNIVERSITY  
ANIMAL SCIENCES AND INDUSTRY**

**Implants and  
the Modern Age:  
Value-based Marketing**



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**Reasons for Not Implanting  
Stocker Cattle**

- Beef Stocker 2000 Survey - KSU
- 10% of respondents do not implant
  - #1 No perceived benefit
  - #2 Natural beef program
  - #3 Price of implants
  - #4 Lack of facilities



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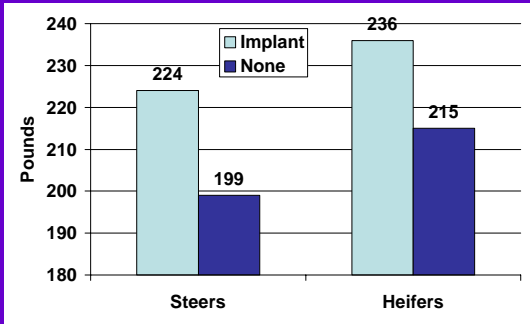
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## Gain on Grass



6,860 Steers, Synovex-S, 41 trials, 132 d  
2,555 Heifers, Synovex-H, 17 trials, 142 d




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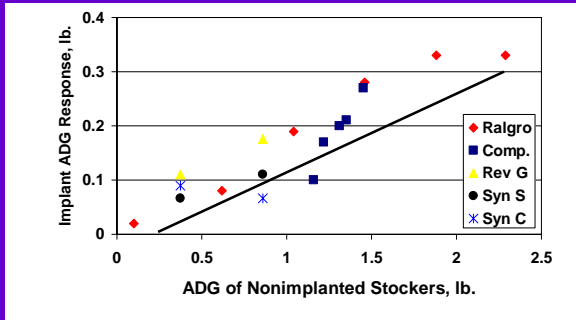
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## Implant Response to Nutrition

Data from Kuhl 1997 and Paisley 1999




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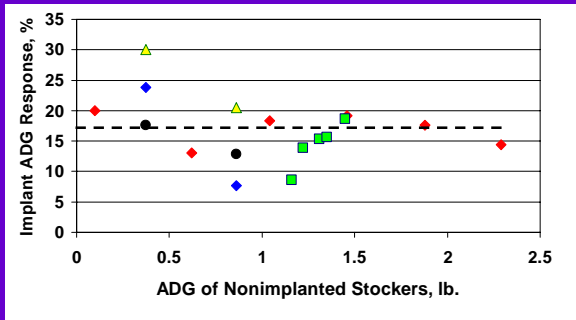
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## Implant Response to Nutrition

Data from Kuhl 1997 and Paisley 1999



Ralgro, Syn-S, SynH, Syn-C, Compudose




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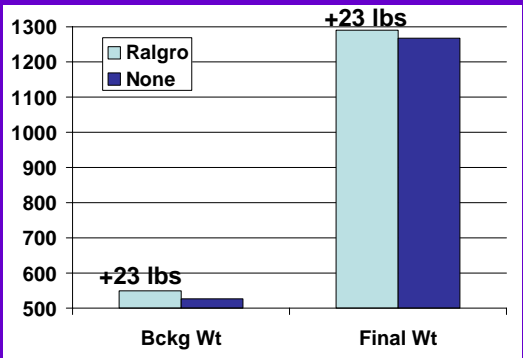
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### Effect of Weaning Implant



Platter et al., 2001




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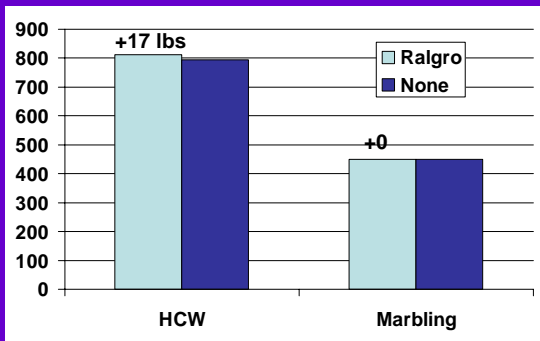
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### Effect of Weaning Implant



Platter et al., 2001




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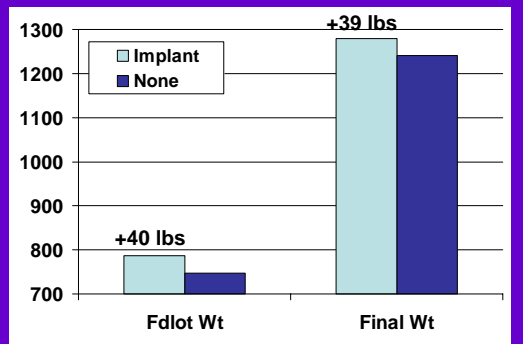
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### Effect of Backgrounding Implant



Ralgro or Synovex, Platter et al., 2001




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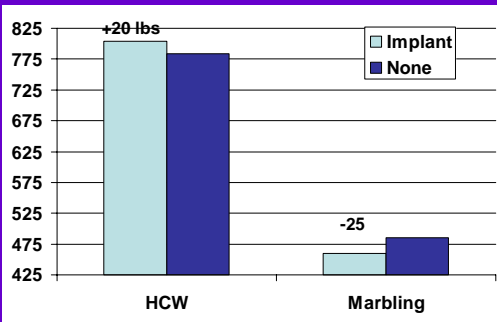
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## Effect of Backgrounding Implant



Ralgro or Synovex, Platter et al., 2001



## Life-Time Implant Effects on Quality Grade

Item	Implant Treatment	
	Feedlot Entry Reimplant	Branding Weaning Backgrounding Feedlot Entry Reimplant
Marbling Score <sup>a</sup>	485	457
< Low Choice, %	30	31
Low Choice, %	34	43
Prem. Ch + Pr, %	36	26

<sup>a</sup>Adjusted to a common fat thickness  
Platter et al., 2001



## Life-Time Implant Effects on Consumer Taste Panel

Item	Implant Treatment	
	Feedlot Entry Reimplant	Branding Weaning Backgrounding Feedlot Entry Reimplant
W.B. Shear Force, kg.	3.95	4.10
Tenderness Like/Dislike <sup>a</sup>	3.79	3.76
Juiciness Like/Dislike <sup>a</sup>	3.91	4.04
Overall Satisfaction <sup>b</sup>	.650	.650

Platter et al., 2001

<sup>a</sup>1 = like extremely and 9 = dislike extremely  
<sup>b</sup>0 = not satisfied and 1 = satisfied

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## Subsequent Feedyard Performance Summary

Reference	Grass type	Pasture Implant Treatment	
		Control	Rev-G
Feedyard ADG/Feed Efficiency			
Kuhl, 1997	Summer	3.38/6.85	3.47/6.76
Eng, 1997	Summer	3.44/6.66	3.48/6.69
Grant, 1993	Summer	3.03/7.68	3.16/7.63
Paisley, 1997	Dormant	3.63/-	3.65/-
Greene, 1998	Dormant	4.23/6.17	4.15/6.40
Johnson, 1999	Summer	3.97/6.20	3.91/6.56
Larson, 1999	Summer	4.41/5.54	4.32/5.92
<b>Average</b>	<b>RG vs C</b>	<b>3.26/6.52</b>	<b>3.27/6.66</b>



## Subsequent Quality Grade

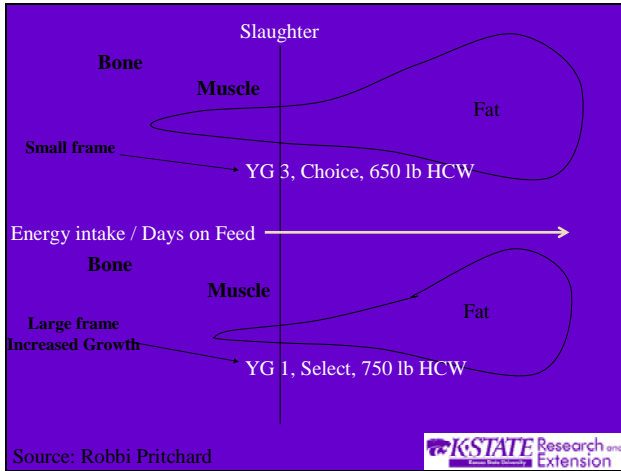
Reference	Grass type	Pasture Implant Treatment	
		Control	Rev-G
Percent Choice			
Kuhl, 1997	Summer	81.4	67.8
Eng, 1997	Summer	33.1	43.9
Grant, 1993	Summer	67.5	62.5
Paisley, 1997	Dormant	59.5	44.4
Greene, 1998	Dormant	56.7	42.9
Johnson, 1999	Summer	73.1	73.7
Larson, 1999	Summer	34.9	30.0
<b>Average</b>	<b>RG vs C</b>	<b>58</b>	<b>52</b>



## Subsequent Feedyard ADG/F:G

Reference	Pasture Implant	
	Control	Ralgro
Brazle, 1996	3.86	3.74
Brazle, 1996	3.78	3.52
Grigsby, 1988	2.61	2.63
Rush, 1989	2.89/7.7	2.88/7.5
Mader, 1985	2.71/6.74	2.79/6.99
Brethour, 1981	3.60	3.81
Hutcheson, 1987	2.72/7.55	2.79/7.72
Simms, 1988	3.19/6.5	3.15/6.7
Kuhl, 1997	3.38	3.39
<b>Overall</b>	<b>3.19</b>	<b>3.19</b>






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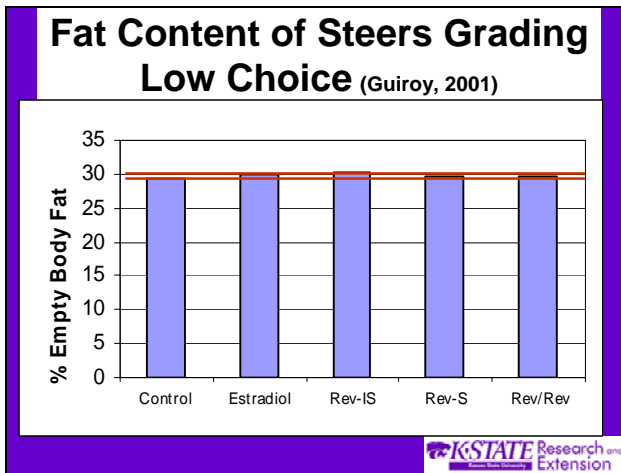
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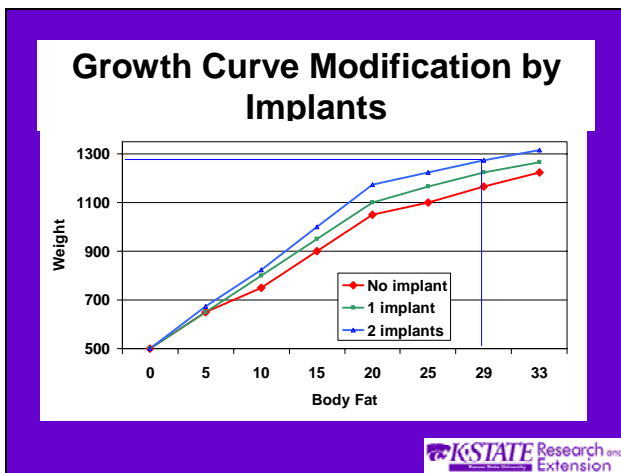
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## Implants and Finished Weight

- Implants increase the growth curve
- Increasing dose increases weight at a common body fatness.
- Compare cattle of = fatness if evaluating grade differences.
- Implants do not change the amount of fat required to reach Choice.



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# VARIATION IN FORAGE QUALITY AS IT RELATES TO STOCKER PERFORMANCE

KC OLSON  
KANSAS STATE UNIVERSITY, ANIMAL SCIENCES & INDUSTRY  
AND  
PABLO GUIROY  
CARGILL ANIMAL NUTRITION

Beef Stocker Field Day  
Kansas State University  
September 28, 2006



## Forage Quality and Stocker Performance

KC Olson  
Kansas State University

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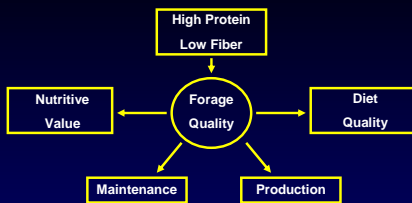
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## Forage Quality



- Factors Affecting Forage Quality
- Manipulating Forage Quality
- Diet Selection
- Stocker Performance

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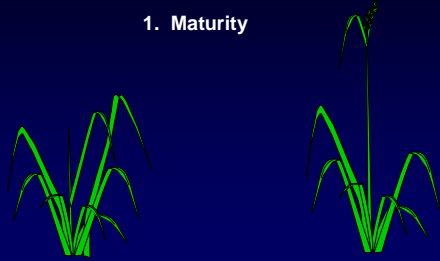
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## Plant Factors Affecting Forage Quality

### 1. Maturity



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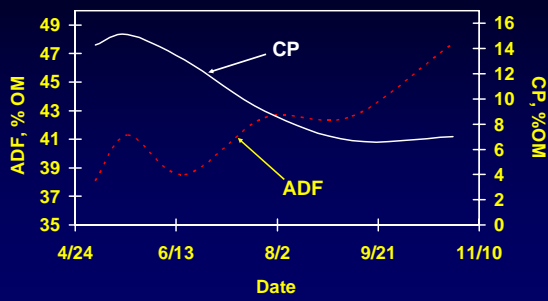
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## Change in Protein and Fiber Concentration of Mixed Grass Prairie Forage Grazed by Steers



(Adams et al., 1987)

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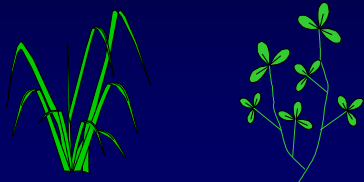
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## Plant Factors Affecting Forage Quality

### 1. Maturity

### 2. Species



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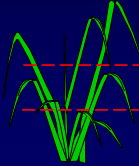
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## Plant Factors Affecting Forage Quality

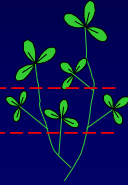
1. Maturity
2. Species
3. Plant Part



Most Nutritious: leaves

Intermediate: leaves and stems

Least Nutritious: lower stems




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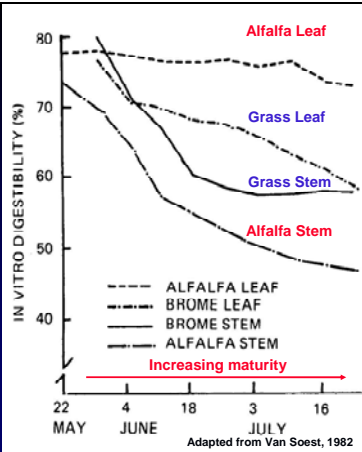
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## Species and Plant Parts

- Legumes / forbs are generally more digestible than grasses
- Leaves are typically more digestible than stems from the same plant type
- The magnitude of the difference depends on stage of maturity and plant species
- Greater difference in legume stem and leaf with maturity due to lignin distribution




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## Manipulating Forage Quality

Manhattan, KS August 7, 2006  
(Composition = Native Tallgrass Prairie)

Ungrazed Forage      Grazed Forage (Regrowth)

Ungrazed Forage		Grazed Forage (Regrowth)	
Crude Protein 12.9		Crude Protein 16.8	+ 3.9
ADF 30.8		ADF 26.5	- 4.3
NDF 60.4		NDF 53.7	- 6.7

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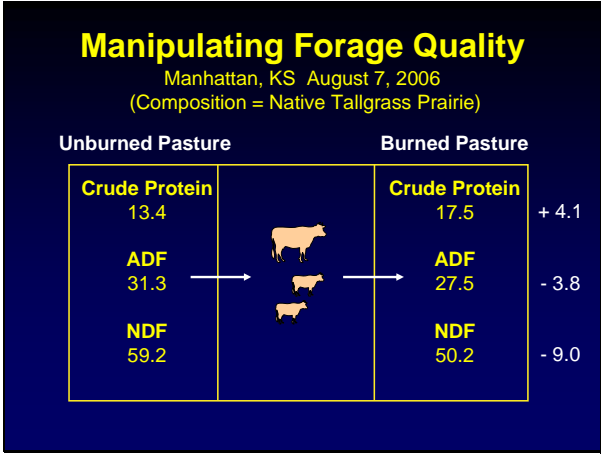
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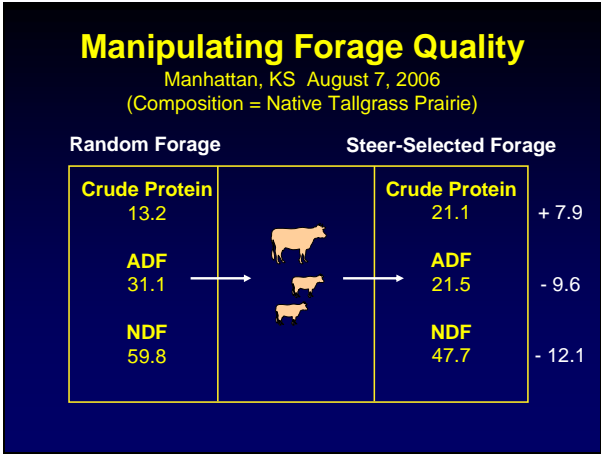
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### Diet Selection

- Grazing animals consistently select a diet of greater nutritional quality than the average of the forage on offer
- This is the result of the animal selecting specific plant species and plant parts to eat
- Selection is driven by:
  - Plant Palatability
  - Plant Growth Form
  - Cattle Experience




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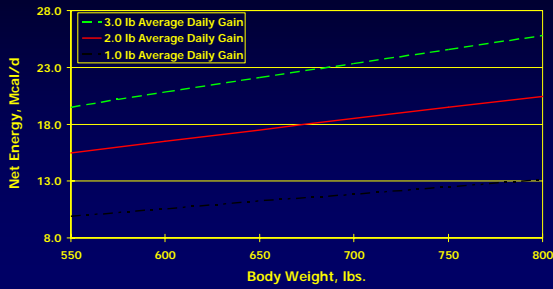
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## Stocker Performance

- Stocker Steer Body Weight and Rate of Gain



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## Strategic Supplementation

- When is Supplementation Appropriate?
  - Understand the Process of Diet Selection
  - Learn to intervene based on body condition / growth performance - the primary management tool
  - Resist the urge to intervene based on forage condition alone - secondary management tool
- What are the Goals of Supplementation?
  - Promote forage intake and digestion
  - Add nutrients to the diet that are limiting ruminal activity
  - Add nutrients to the diet that are limiting growth
- What Nutrients Usually Limit Productivity?
  - Protein – primary
  - Energy – secondary
  - Minerals and Vitamins - tertiary

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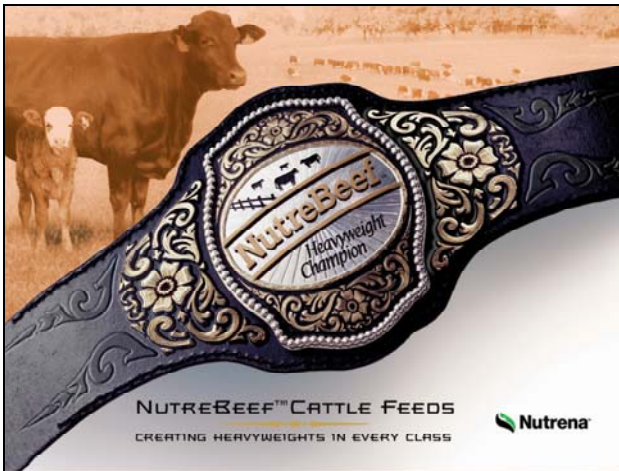
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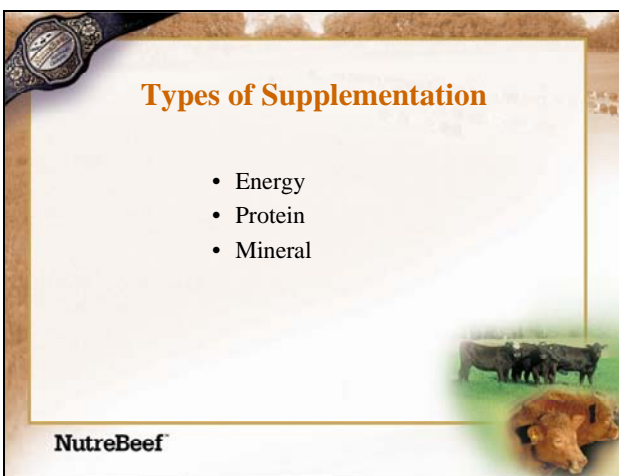
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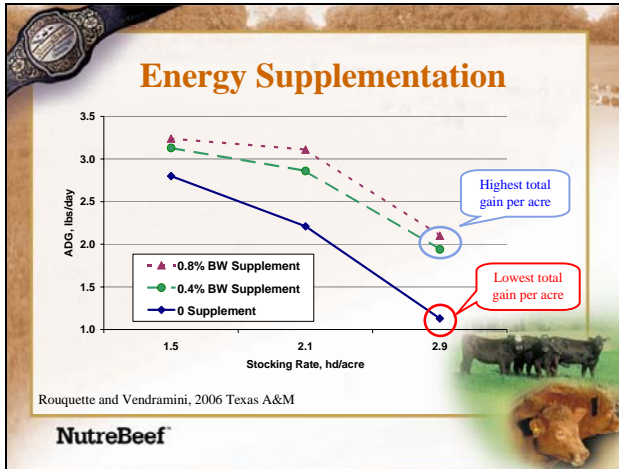
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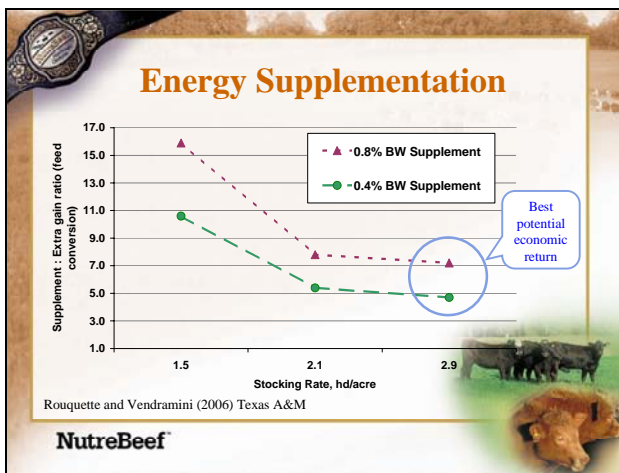
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- ### Energy Supplementation
- Characteristics
    - Replaces pasture in diet
    - Typical intake supplementation  
2 to 8 lb daily intake
    - Can reduce forage digestibility
    - Strategic use recommended
    - High stocking rates
- Rouquette and Vendramini (2006) Texas A&M
- NutreBeef**

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## Energy Supplementation

- When to consider
  - Profitable return
  - Total gain objectives
  - Insufficient supply of forage
    - High stocking rate
    - Reduced forage growth

**NutreBeef**

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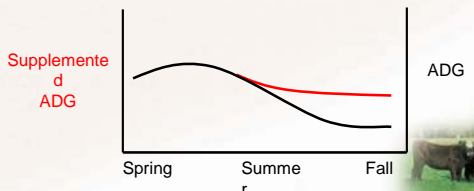


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## Energy Supplementation

- Increase performance strategy

**NutreBeef**

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## Energy Supplementation

- The key to a positive return for energy supplementation is:
  1. High stocking rates that challenge forage supply.
  2. Short term strategic use during periods when the quantity of forage is limited and reducing ADG.

**NutreBeef**

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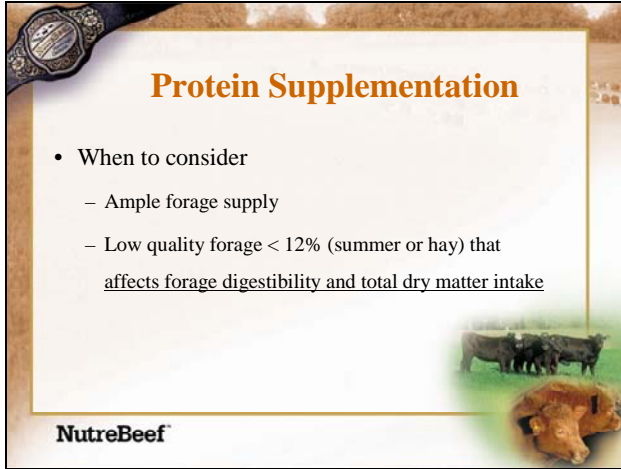
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## Protein Supplementation

- When to consider
  - Ample forage supply
  - Low quality forage < 12% (summer or hay) that affects forage digestibility and total dry matter intake




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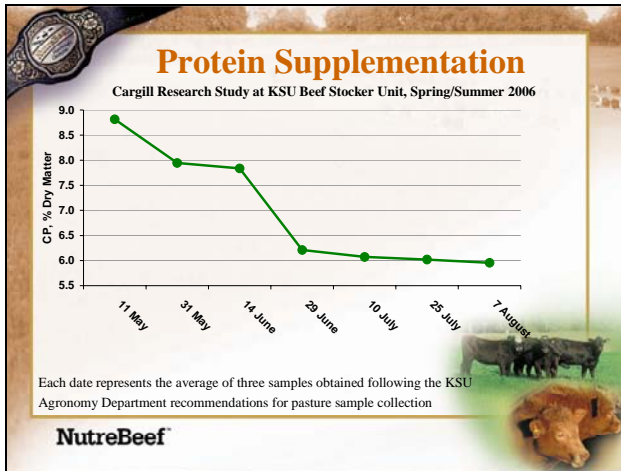
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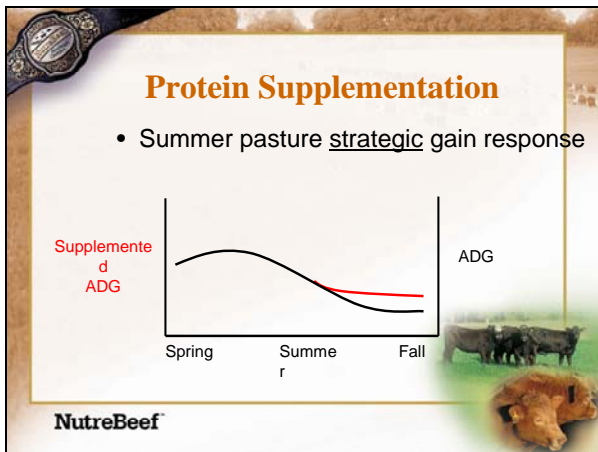
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## Protein Supplementation

- The key to a positive return for protein supplementation is:
  1. Ample forage with highly soluble protein and limited by-pass (winter annual pastures).
  2. Long and Short term strategic use during periods when forage quantity is high but quality is low.



**NutreBeef**

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## Mineral Supplementation

- Macro
  - Calcium
  - Phosphorus
  - Magnesium
  - Sulfur
  - Potassium
  - Sodium
- Micro
  - Copper
  - Zinc
  - Manganese
  - Cobalt
  - Selenium
  - Iodine



**NutreBeef**

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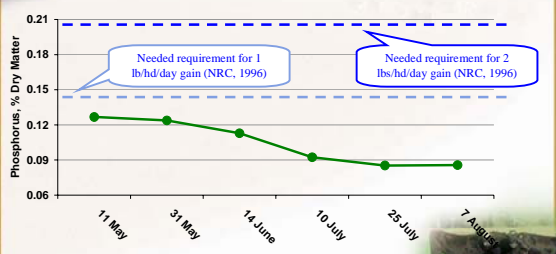
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## Mineral Supplementation

Cargill Research Study at KSU Beef Stocker Unit, Spring/Summer 2006



Date	Phosphorus (% Dry Matter)
11 May	0.13
31 May	0.125
14 June	0.115
10 July	0.10
25 July	0.095
7 August	0.09

Each date represents the average of three samples obtained following the KSU Agronomy Department recommendations for pasture sample collection



**NutreBeef**

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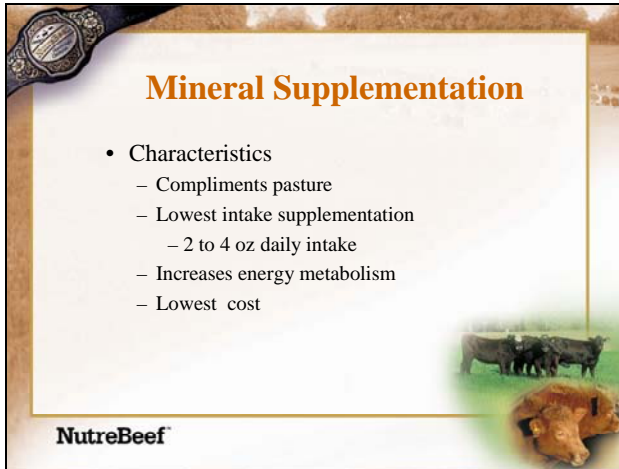
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## Mineral Supplementation

- Characteristics
  - Compliments pasture
  - Lowest intake supplementation
    - 2 to 4 oz daily intake
  - Increases energy metabolism
  - Lowest cost




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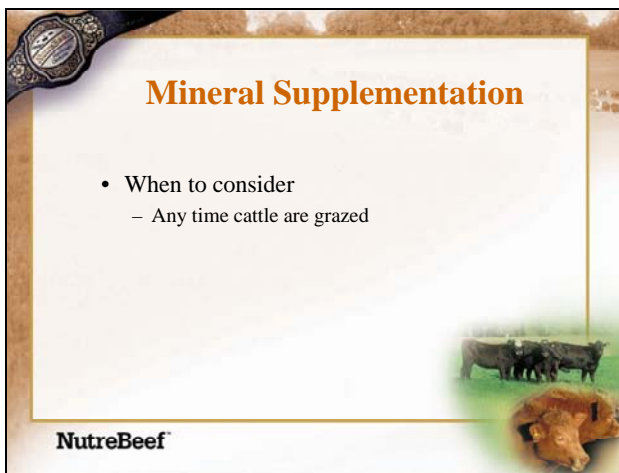
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## Mineral Supplementation

- When to consider
  - Any time cattle are grazed




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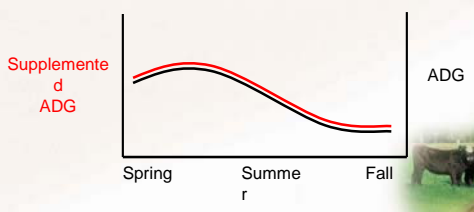
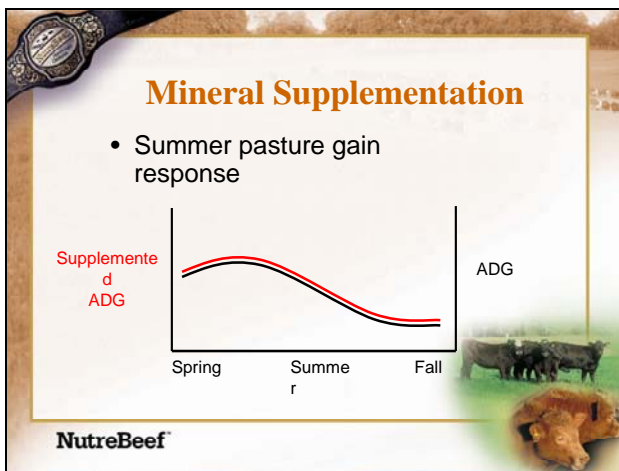
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## Mineral Supplementation

- Summer pasture gain response


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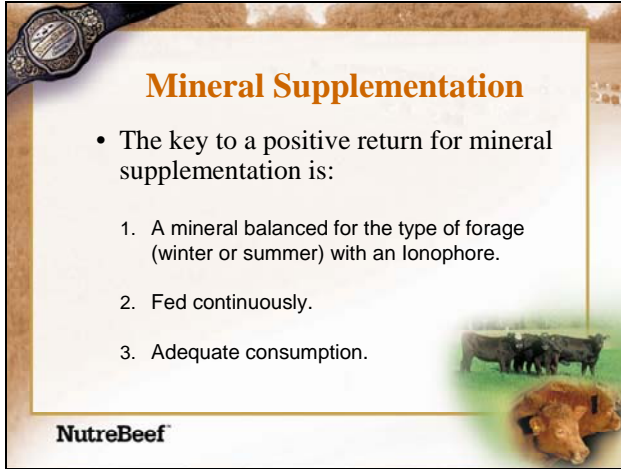
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## Mineral Supplementation

- The key to a positive return for mineral supplementation is:
  1. A mineral balanced for the type of forage (winter or summer) with an Ionophore.
  2. Fed continuously.
  3. Adequate consumption.

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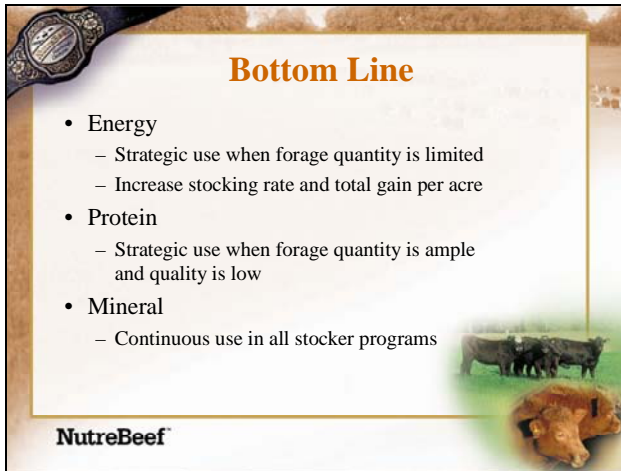
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## Bottom Line

- Energy
  - Strategic use when forage quantity is limited
  - Increase stocking rate and total gain per acre
- Protein
  - Strategic use when forage quantity is ample and quality is low
- Mineral
  - Continuous use in all stocker programs

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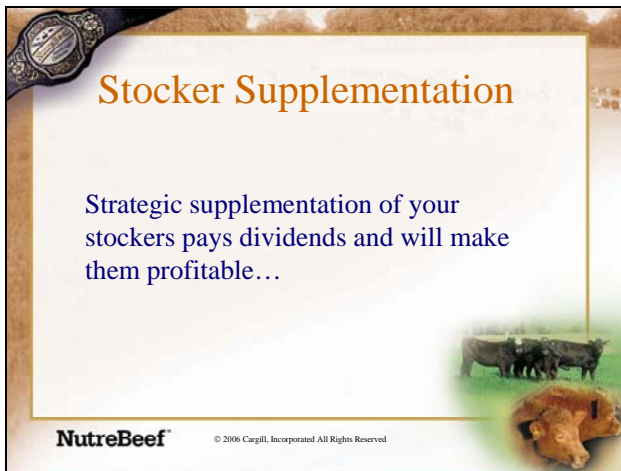
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## Stocker Supplementation

Strategic supplementation of your stockers pays dividends and will make them profitable...

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Be sure to visit the BeefStockerUSA website at:

[www.beefstockerusa.org](http://www.beefstockerusa.org)



**An information site for stocker producers presented by  
Kansas State University Research and Extension:**

**Department of Animal Sciences & Industry**

**Food Animal Health and Management Center  
College of Veterinary Medicine**

**“Knowledge for Life”**

# BEEF STOCKER

**Cargill**

**SILENCER**  
*The Industry Standard*

*beef*  
**stocker**  
USA

**BEEF**

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