Photo courtesy of Tim Carson, Kansas State University

KSU BEEF STOCKER FIELD DAY

September 27, 2012
KSU Beef Stocker Unit

PROCEEDINGS

Beef Stocker Field Day 2012
September 27, 2012
KSU Beef Stocker Unit

Table of Contents

Beef Stocker Field Day 2012
September 27, 2012
KSU Beef Stocker Unit

Welcome to the 13th annual KSU Beef Stocker Field Day. 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 Bayer Animal Health 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 Field Day 2012
September 27, 2012
KSU Beef Stocker Unit

9:30 a.m.	Registration/Coffee
10:15 a.m.	Introductions
10:30 a.m.	**Cattle and Corn Market Outlook** *Dr. Glynn Tonsor, Kansas State University*
11:15 a.m.	**Producer Panel: Managing Around Fewer Cattle** *Moderator: Wes Ishmael, Associate Editor, BEEF magazine* *Margaret Ann Smith – Southlex Cattle Company, Fairfield, VA* *Fred Berns – Stocker Operator, Peabody, KS* *Jeff George – Finney County Feedyard, Inc.* *Ken Woods – Frontier Farm Credit*
12:00 Noon	Barbecue Lunch
1:30 p.m.	**Bayer R&D Update for Stocker Cattle** *Dr. Jason Nickell, Bayer Animal Health*
2:15 p.m.	**Antibiotic Classes and Uses for Stocker Operations** *Dr. Jim Sears, Bayer Animal Health*
2:30 p.m.	**Byproduct Utilization and Growing Cattle** *Dr. Terry Klopfenstein, Professor Emeritus, University of Nebraska*

3:15 - 5:30 p.m. **Breakout Sessions**

Pasture Weed Control
Dr. Walt Fick, Kansas State University

Purchasing Commodity Feeds
Rodney Derstein, Tallgrass Commodities

Why is he Dead? What a Necropsy can Tell Us
Dr. Larry Hollis, Kansas State University

5:30 p.m. Complimentary Cutting Bull's Lament BBQ

Notes – Notes -- Notes

Cattle and Corn Market Outlook

Dr. Glynn Tonsor
Kansas State University

Beef Stocker
Kansas State University
Field Day
September 27, 2012
Kansas State University
Manhattan, Kansas
K-STATE

Beef & Cattle Market Outlook: Implications for Stockers

Glynn Tonsor
Dept. of Agricultural Economics
Kansas State University

AG MANAGER.INFO
www.agmanager.info

KANSAS STATE UNIVERSITY 1

Economic Outlook Overview: Cow-Calf Sector

- Strong calf price pullback during 2012
  - National vs. regional drought magnified cattle market impact compared to 2011
- *Eventually:* return as beneficiary of tight supplies and probable expanded heifer retention…
  - But note majority of owners (not industry share of cows) are not necessarily seeking to maximize profits as core goal …
- Returns over cash costs
  - 2012 (2013) estimates have fell over $170/cow ($75) since early spring
  - Will 2015 now be "the peak return year" ?
    - Further widening between top 1/3 and bottom 1/3 of producers?
      - Cost management drives majority of differences in returns and likely is even more critical in period of drought response ….

KANSAS STATE UNIVERSITY

As of: 9/26/12

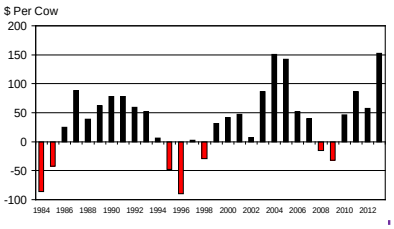
CAS

http://www.agmanager.info/livestock/marketing/graphs/cattle/prices/default.asp

KANSAS STATE UNIVERSITY 3

ESTIMATED AVERAGE COW CALF RETURNS

Returns Over Cash Cost (Includes Pasture Rent), Annual



Livestock Marketing Information Center

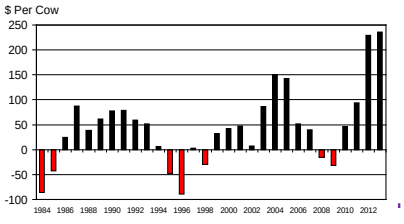
Data Source: USDA-AMS & USDA-NASS, Compiled & Analysis by LMIC

C-P-66
09/20/12

KANSAS STATE UNIVERSITY

ESTIMATED AVERAGE COW CALF RETURNS

Returns Over Cash Cost (Includes Pasture Rent), Annual



Livestock Marketing Information Center

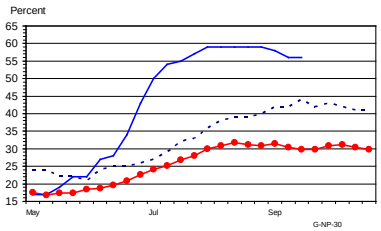
Data Source: USDA-AMS & USDA-NASS, Compiled & Analysis by LMIC

C-P-66
03/21/12

KANSAS STATE UNIVERSITY

US RANGE AND PASTURE CONDITION

Percent Poor and Very Poor, Weekly



Beef Cows in states with 40% Poor to Very Poor		
Last year	Cows	% of Total
09/11/11	13,962	45.38%
09/18/11	14,380	46.74%
09/25/11	14,558	47.32%
This Year		
09/09/12	23,182	77.79%
09/16/12	22,328	74.93%
09/23/12	22,404	75.18%

9/19/10': 15.5% of Cows

Livestock Marketing Information Center

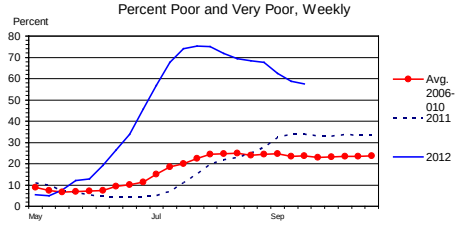
Data Source: USDA-NASS, Compiled & Analysis by LMIC

G-NP-30
09/24/12

KANSAS STATE UNIVERSITY

IL, IN, IA, MI, MN, MO, OH, & WI
14.5% of Cows
(2012)

CORNBELT REGION
RANGE AND PASTURE CONDITION
Percent Poor and Very Poor, Weekly



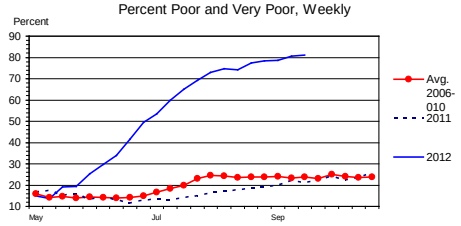
G-NP-34
09/24/12

Livestock Marketing Information Center
Data Source: USDA-NASS, Compiled & Analysis by LMIC

KANSAS STATE UNIVERSITY

CO, KS, MT, NE, ND, SD, & WY
29.2% of Cows
(2012)

GREAT PLAINS REGION
RANGE AND PASTURE CONDITION
Percent Poor and Very Poor, Weekly



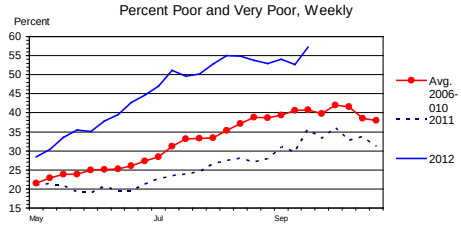
G-NP-32
09/24/12

Livestock Marketing Information Center
Data Source: USDA-NASS, Compiled & Analysis by LMIC

KANSAS STATE UNIVERSITY

AZ, CA, ID, NV, NM, OR, UT, & WA
10.2% of Cows
(2012)

WESTERN REGION
RANGE AND PASTURE CONDITION
Percent Poor and Very Poor, Weekly



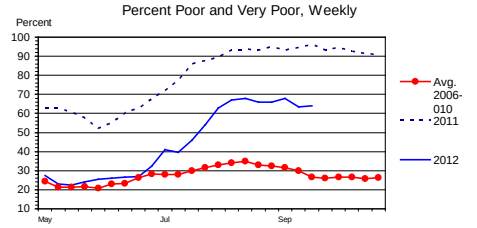
G-NP-31
09/24/12

Livestock Marketing Information Center
Data Source: USDA-NASS, Compiled & Analysis by LMIC

KANSAS STATE UNIVERSITY

OK & TX
20.4% of Cows
(2012)

SOUTHERN PLAINS REGION
RANGE AND PASTURE CONDITION
Percent Poor and Very Poor, Weekly



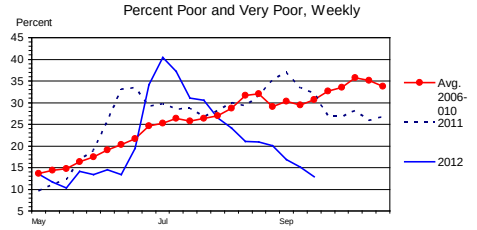
G-NP-33
09/24/12

Livestock Marketing Information Center
Data Source: USDA-NASS, Compiled & Analysis by LMIC

KANSAS STATE UNIVERSITY

AL, AR, FL, GA, KY, LA, MS, NC, SC, TN, VA, & WV
24.5% of Cows (2012)

SOUTHEAST REGION
RANGE AND PASTURE CONDITION
Percent Poor and Very Poor, Weekly



G-NP-36
09/24/12

Livestock Marketing Information Center
Data Source: USDA-NASS, Compiled & Analysis by LMIC

KANSAS STATE UNIVERSITY

Economic Outlook Overview : Stockers

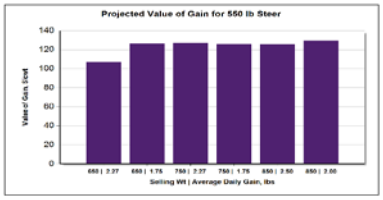
- Historically high Values of Gain (VOG)
  - But also historically high Costs of Gain (COG)…
- Of course, not everyone has their typical feedstuffs/resources to engage this fall/winter
  - ↑VOG = ↑rewards for sound management
  - ↑COG = ↑pain of hiccups or poor management
    - Many producers feeding something new…

KANSAS STATE UNIVERSITY

How Should VOG Be Projected?

- Naïve (current cash market offering) vs. Forward Looking (futures market & basis)
  - Important to recognize no crystal ball exist
  - Salina, KS / 550 to 750 lb in 3 month case / Jan. 07' to July 12' period: naïve is less accurate
  - Forward-looking based VOG projections are now updated daily on AgManager

http://www.agmanager.info/livestock/budgets/production/beef/KSU_FactSheet_ValueOfGainForecastingApproaches.pdf



Projected Value of Gain

Begining Weight, lbs	Ending Weight, lbs	Date	Weight Gain, lbs/hd	ADG, lbs	Value of Gain, $/cwt
550	650	11/09/2012	100	2.27	$107.29
550	650	11/22/2012	100	1.75	$126.79
550	750	12/23/2012	200	2.27	$127.34
550	750	01/18/2013	200	1.75	$126.25
550	850	01/24/2013	300	2.50	$125.75
550	850	02/23/2013	300	2.00	$129.29

Note: Projections dervied for the Salina, KS market using BeefBasis.com
Related information is available at: BeefBasis.com 9/26/2012

KSTATE CAS

http://www.agmanager.info/livestock/marketing/graphs/cattle/prices/VOG.asp

Projected Value of Gain

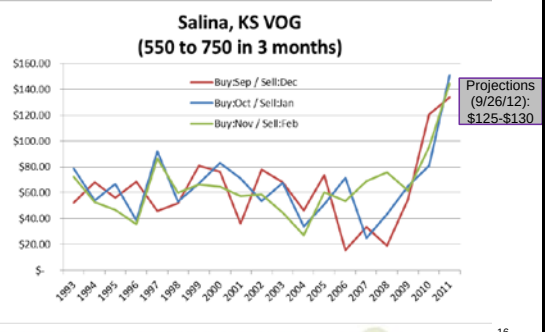
Begining Weight, lbs	Ending Weight, lbs	Date	Weight Gain, lbs/hd	ADG, lbs	Value of Gain, $/cwt
550	650	11/09/2012	100	2.27	$107.29
550	650	11/22/2012	100	1.75	$126.79
550	750	12/23/2012	200	2.27	$127.34
550	750	01/18/2013	200	1.75	$126.25
550	850	01/24/2013	300	2.50	$125.75
550	850	02/23/2013	300	2.00	$129.29

Note: Projections dervied for the Salina, KS market using BeefBasis.com
Related information is available at: BeefBasis.com 9/26/2012

KSTATE CAS

http://www.agmanager.info/livestock/marketing/graphs/cattle/prices/VOG.asp

Historical VOG



Projections (9/26/12): $125-$130

16

KANSAS STATE UNIVERSITY

Know your cost of gain (COG) …

		Increased Value ($/hd):	
		Projected VOG	*80% of Projected VOG*
COG ($/cwt)		$ 127.34	$ 101.87
$	85.00	$84.68	$33.74
$	100.00	$54.68	$3.74
$	115.00	$24.68	($26.26)
$	130.00	($5.32)	($56.26)
$	145.00	($35.32)	($86.26)

Trucking, interest, etc. must be subtracted to identify returns.

- Factsheet resources and examples:
  - "Buy-Sell" spreadsheet/web dashboard: http://www.agmanager.info/livestock/budgets/production/
  - http://www.agmanager.info/livestock/budgets/production/beef/KSU_FactSheet_ValueOfGainForecastingApproaches.pdf
  - http://www.agmanager.info/livestock/budgets/production/beef/Value-of-Gain_FactSheet_AM-GTT_2011.pdf

17

KANSAS STATE UNIVERSITY

Economic Outlook Overview: Feedlots

- Excess capacity concerns remain & will be growing…
  - Drought: mitigates this initially / magnifies it later …
  - Mexican supplies: mitigates this recently / magnifies it soon
- Losses persist…
  - Recent closeouts are at historically high losses…
    - Elevated cost of gain + Feeders purchased before spring pullback
- Recent placements closer to break-even projections…
  - Important to watch response to shrinking available supplies

KANSAS STATE UNIVERSITY

Historical and Projected Kansas Feedlot Net Returns

(as of 9/6/12')

(http://www.agmanager.info/livestock/marketing/outlook/newsletters/FinishingReturns/default.asp)

July -12: -$265.35/steer

Rolling 12 month average thru July:-$89.33/steer

Table 1. Projected Values for Finishing Steers in Kansas Feedyards*

Closeout Mo-Yr	Net Return	FCOG**	Fed Price	Feeder Price	Breakeven FCOG**	Breakeven Fed Price	Breakeven Feeder Price
Aug-12	-238.35	106.68	120.31	154.97	63.38	137.55	126.35
Sep-12	-174.94	109.23	125.16	153.02	76.58	137.84	132.28
Oct-12	-127.50	110.68	128.75	153.17	87.65	137.96	137.82
Nov-12	-70.47	112.92	129.50	147.09	100.76	134.53	138.50
Dec-12	14.00	115.78	132.06	139.89	118.19	131.01	141.72
Jan-13	-18.30	120.52	131.36	138.88	117.34	132.71	136.53

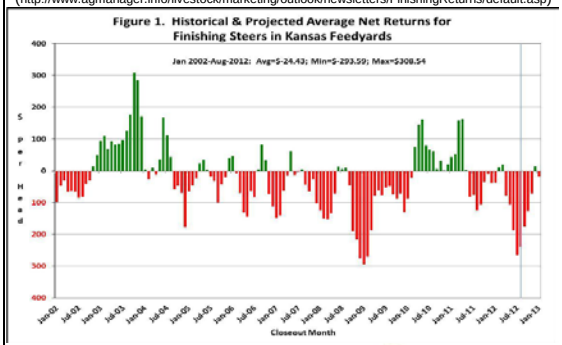
Representative Barometer for Trends in Profitability

KANSAS STATE UNIVERSITY

Historical and Projected Kansas Feedlot Net Returns (as of 9/6/12')

(http://www.agmanager.info/livestock/marketing/outlook/newsletters/FinishingReturns/default.asp)

Figure 1. Historical & Projected Average Net Returns for Finishing Steers in Kansas Feedyards



KANSAS STATE UNIVERSITY

QUARTERLY FORECASTS (LMIC: 9/23/12)

Year Quarter	Comm'l Slaughter	% Chg. from Year Ago	Average Dressed Weight	% Chg. from Year Ago	Comm'l Beef Production	% Chg. from Year Ago
2011						
I	8,314	1.8	770.9	0.7%	6,410	2.6
II	8,640	-0.5	759.2	0.7%	6,559	0.2
III	8,738	-0.2	770.9	-0.3%	6,736	-0.5
IV	8,395	-3.0	773.1	-0.8%	6,490	-3.7
Year	34,087	-0.5	768.5	0.1%	26,195	-0.4
2012						
I	8,027	-3.5	782.7	1.5%	6,283	-2.0
II	8,311	-3.8	779.1	2.6%	6,475	-1.3
III	8,325	-4.7	789.7	2.4%	6,574	-2.4
IV	8,319	-0.9	784.2	1.4%	6,524	0.5
Year	32,982	-3.2	783.9	2.0%	25,855	-1.3
2013						
I	7,739	-3.6	781.9	-0.1%	6,051	-3.7
II	7,995	-3.8	778.9	0.0%	6,227	-3.8
III	8,041	-3.4	793.1	0.4%	6,377	-3.0
IV	7,752	-6.8	792.3	1.0%	6,142	-5.9
Year	31,527	-4.4	786.5	0.3%	24,797	-4.1
2014						
I	7,288	-5.8	791.2	1.2%	5,766	-4.7
II	7,516	-6.0	785.7	0.9%	5,905	-5.2
III	7,582	-5.7	801.5	1.1%	6,077	-4.7
IV	7,287	-6.0	801.2	1.1%	5,838	-4.9
Year	29,673	-5.9	794.9	1.1%	23,586	-4.9

KANSAS STATE UNIVERSITY

QUARTERLY FORECASTS (LMIC: 9/23/12)

Year / Quarter	Live Sltr. Steer Price 5-Mkt Avg	% Chg. from Year Ago	Feeder Steer Price Southern Plains 7-800#	5-600#
2011				
I	110.12	23.1	129.06	150.07
II	112.79	17.1	132.03	148.61
III	114.05	19.5	135.93	141.69
IV	121.99	21.7	143.15	153.11
Year	114.74	20.3	135.04	148.37
2012				
I	125.29	13.8	154.25	182.41
II	120.91	7.2	152.65	178.65
III	119-120	4.8	141-142	150-151
IV	125-127	3.3	142-144	150-153
Year	122-124	7.2	147-149	165-167
2013				
I	128-131	3.4	139-143	154-158
II	128-132	7.5	144-149	159-165
III	126-131	7.5	147-153	163-170
IV	128-134	4.0	148-155	161-168
Year	128-132	5.7	145-149	159-165
2014				
I	132-139	4.6	153-161	173-182
II	134-142	6.2	156-166	176-188
III	132-140	5.8	157-168	172-185
IV	133-143	5.3	155-167	169-184
Year	134-140	5.4	157-164	175-182

KANSAS STATE UNIVERSITY

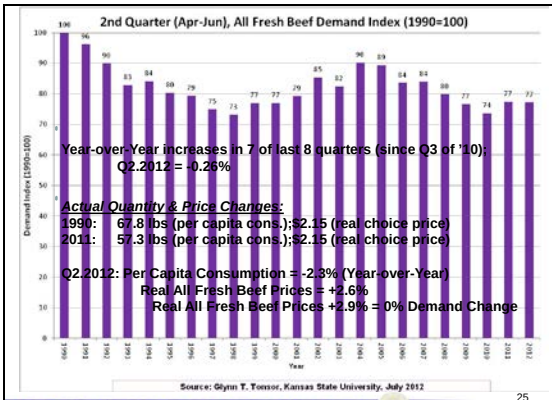
Economic Outlook Overview : Beef Demand

- Meat prices rising w/i basket of purchases…
  - "bacon shortage" discussions are exaggerations; record retail meat prices in 2013 are not…
  - as prices increase, public will require more quality to remain active consumers…
    - Debates on various technologies may intensify…
- Discussion on demand "getting complicated"
  - Growing interest in "how my food is produced"
    - Animal welfare, food safety, antibiotics, hormone use, local, organic, traceability…

KANSAS STATE UNIVERSITY

Source: March 12, 2012 TIME magazine

KANSAS STATE UNIVERSITY



Year-over-Year increases in 7 of last 8 quarters (since Q3 of '10);
Q2.2012 = -0.26%

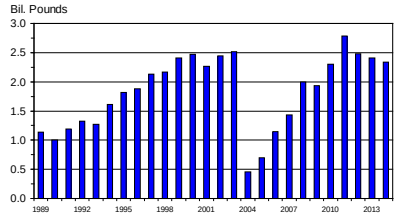
Actual Quantity & Price Changes:
1990: 67.8 lbs (per capita cons.);$2.15 (real choice price)
2011: 57.3 lbs (per capita cons.);$2.15 (real choice price)

Q2.2012: Per Capita Consumption = -2.3% (Year-over-Year)
Real All Fresh Beef Prices = +2.6%
Real All Fresh Beef Prices +2.9% = 0% Demand Change

25

KANSAS STATE UNIVERSITY

U S BEEF AND VEAL EXPORTS
Carcass Weight, Annual

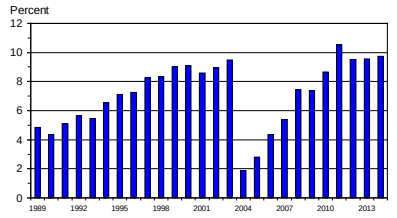


I-N-06
08/10/12

Livestock Marketing Information Center
Data Source: USDA-ERS & USDA-FAS, Compiled & Analysis by LMIC

KANSAS STATE UNIVERSITY

U S BEEF AND VEAL EXPORTS
As a Percentage of Production, Carcass Weight, Annual

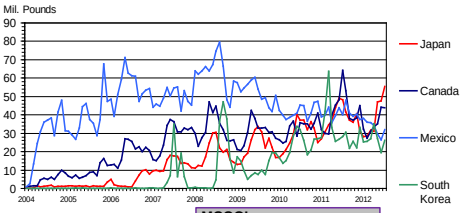


I-N-07
08/10/12

Livestock Marketing Information Center
Data Source: USDA-ERS & USDA-FAS, Compiled & Analysis by LMIC

KANSAS STATE UNIVERSITY

U S BEEF EXPORTS TO MAJOR MARKETS
Carcass Weight, Monthly



MCOOL:
Consumers are unaware;
No aggregate demand +;
WTO resolution pending

I-N-35
09/12/12

Livestock Marketing Information Center
Data Source: USDA-ERS & USDA-FAS

KANSAS STATE UNIVERSITY

Setting the Stage for our Panel…

- The U.S. beef cow industry has been downsizing for a long time…
- Alignment with those "in it for the long haul" is increasingly important

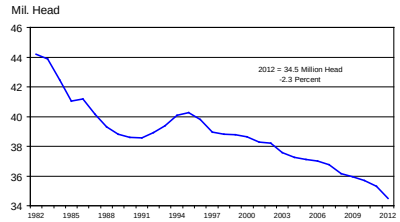
KANSAS STATE UNIVERSITY

July 1 Cattle Inventory Report

- Report was eliminated, reinstated for 2012, and future availability is unknown …
  - Example of ongoing public/private data discussions
- Downsizing of herd continues (yr-on-yr changes)
  - Beef cows: -3% (900,000 hd)
  - Beef heifer replacements: 0% (was +1.4% in Jan.)
  - 2012 calf crop estimate: -2.3% (800,000 hd)
  - Feeder supplies outside feedlots: -3.2% (1.18 mil. Hd)

KANSAS STATE UNIVERSITY

CALF CROP
July 1 Estimates, U.S., Annual



Livestock Marketing Information Center
Data Source: USDA-NASS

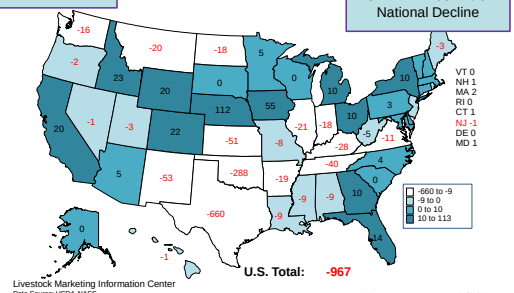
C-N-18B
07/20/12

KANSAS STATE UNIVERSITY

National Herd:
- 3.1% (vs. 2011)
Smallest since 1962

CHANGE IN BEEF COWS NUMBERS
JANUARY 1, 2011 TO JANUARY 2012
(1000 Head)

OK + TX = 98.1% of National Decline



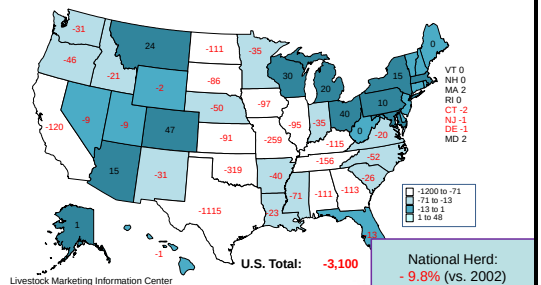
U.S. Total: -967

Livestock Marketing Information Center
Data Source: USDA-NASS
01/27/12

KANSAS STATE UNIVERSITY

OK + TX = 46.2% of National Decline

CHANGE IN BEEF COWS NUMBERS
JANUARY 1, 2002 TO JANUARY 2012
(1000 Head)

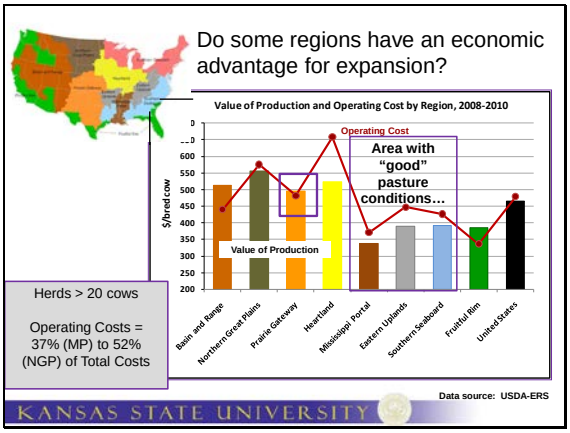


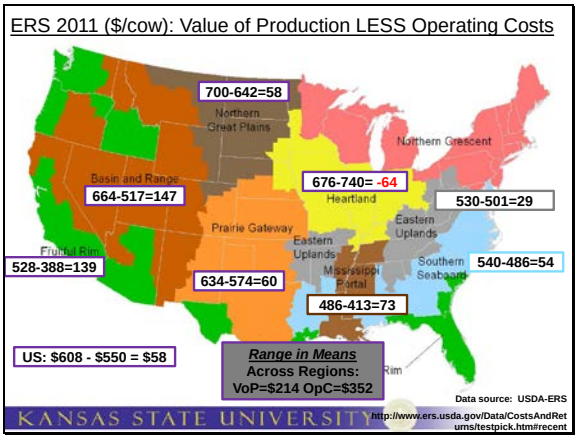
U.S. Total: -3,100

National Herd:
- 9.8% (vs. 2002)

Livestock Marketing Information Center
Data Source: USDA-NASS

KANSAS STATE UNIVERSITY





USDA's longer-term projections (as of Feb. 2012) …

http://www.ers.usda.gov/Publications/OCE121/

- **U.S. beef cow inventory:**
  - 29.8 million in 2012
  - 34.5 million in 2021 (+/- 1997 levels) / was 39.3 million in 1982
    - Beef Production (billion lbs) : 25.4 (1997), 26.2 (2011)
      - *More beef per cow will continue = less throughput in # hd…*
- **Domestic per capita red meat & poultry consumption:**
  - 221 lbs in 04-07 (Beef=65.7 lbs; Pork=50.4 lbs; Poultry=103.8 lbs)
  - 198 lbs in 2013 (Beef=51.3 lbs; Pork=46.3 lbs; Poultry=98.5 lbs)
  - 213 lbs in 2021 (Beef=58.7 lbs; Pork=47.2 lbs; Poultry=105.8 lbs)
    - *These lower per capita volumes will be purchased with more consumer requests and hence requirements for industry-wide investment (& collaboration) in beef quality …*

KANSAS STATE UNIVERSITY

Final points for discussion

- Global beef demand growth & restrictions from domestic industry heterogeneity must be watched…
  - Comparative position of U.S. is critical…
- Growth of cow-herd vs. # of operations
  - Will traits of those who expand be more aligned with changing consumer requirements???
- How does regionally varying cow-calf expansion & feedlot excess capacity resolution influence your stocker business?

What To Do?

- Utilize available resources
  - VOG projections, decision aides, these KSU events
- Do you know your comparative advantage?
  - Having a favorable cost structure is imperative…
- I encourage you to:
  - Recognize this "isn't your father's world" anymore and manage accordingly…
  - "Think globally, manage locally, and stay informed"

More information available at:

AG MANAGER.INFO
www.agmanager.info

This presentation is available in PDF format at:
http://www.agmanager.info/about/contributors/individual/tonsor.asp

Glynn T. Tonsor
Associate Professor
Dept. of Agricultural Economics
Kansas State University
gtt@agecon.ksu.edu

Utilize a Wealth of Information Available at AgManager.info

About AgManager.info

AgManager.info website is a comprehensive source of information, analysis, and decision-making tools for agricultural producers, agribusinesses, and others. The site serves as a clearinghouse for applied outreach information emanating from the Department of Agricultural Economics at Kansas State University. It was created by combining departmental and faculty sites as well as creating new features exclusive to the AgManager.info site. The goal of this coordination is to improve the organization of web-based material and allow greater access for agricultural producers and other clientele.

www.agmanager.info

KANSAS STATE UNIVERSITY

Receive Weekly Email Updates for AgManager.Info

Receive Weekly Email Updates for *AgManager.info*:

Enter Email:

http://www.AgManager.info/Evaluation/Email.htm

www.agmanager.info

KANSAS STATE UNIVERSITY

K-State Decision Aides: Cattle Price Oriented

(http://www.agmanager.info/Tools/default.asp)

- Expectations on Future Cash Prices
  - http://www.beefbasis.com/
- Examine Feeder Cattle Risk Management Alternatives
  - *"K-State Feeder Cattle Risk Management Tool"*
- Project Premium/Discount of Calf/Steer Attributes
  - "*K-State Feeder Cattle Price Analyzer*"
- Stocker Breakeven Selling/Purchasing Prices
  - *"Cattle Breakeven Selling and Purchase Prices"*

KANSAS STATE UNIVERSITY

www.agmanager.info

Other K-State Decision Aides

(http://www.agmanager.info/Tools/default.asp)

- NPV of Beef Replacements
  - *"KSU-Beef Replacements"*
- Beef Cow Lease Agreements
  - *"KSU-CowLease"*
- Determining Flint Hills Pasture Rents
  - "*KSU-Graze.xls"*

KANSAS STATE UNIVERSITY

AG MANAGER.INFO
www.agmanager.info

Beef-Cattle Economics webinar series

Series of quarterly webinars on beef-cattle markets and other industry-related issues.

2012 schedule (all webinars begin at 1:30 CST)

February 7
May 1
August 7
November 6

For details about specific topics and registering for webinars see additional information on AgManager.info AND http://www.meatingplace.com/Industry/Webinars

KANSAS STATE UNIVERSITY

Notes – Notes -- Notes

Antibiotic Classes and Uses for Stocker Operations

Dr. Jim Sears
Bayer Animal Health

Antibiotic Classes and Uses for Stockers

Jim Sears, DVM
Bayer Animal Health

My agenda

- BRD basics
- Antibiotic basics
- Antibiotic uses
- Your questions

BRD Basics

Bovine Respiratory Disease (BRD)

- Shipping Fever
- Bronchopneumonia
- Fibrinous pleuropneumonia
- Hemorrhagic
- Respiratory
- Respy
- Your term ?.....

Really -- BRDC

- Bovine Respiratory Disease **Complex**
- A complex disease
- Usually the result of many factors
- No single cause; no single cure

Bovine Respiratory Disease (BRD)

STRESS

↓

VIRUSES

↓

BACTERIA

↓

BRD

STRESS

- Suppresses IMMUNE SYSTEM
  - Decreased WBC function
  - Decreased antibody function
  - IMMUNOSUPPRESSION
  - Increased susceptibility to disease
  - Decreased ability to respond to vaccination

Common Stresses

- Weaning
- Transportation
- Gathering and handling
- Processing
- Commingling
- Dust / heat / cold stress / rain & snow / mud
- Adaptation to new ration & environment
- Etc, etc.

Viruses

- IBR
- BVD
- BRSV
- PI3
- others

Bacteria

- *Mannheimia haemolytica*
  (used to be *Pasteurella haemolytica*)
- *Pasteurella multocida*
- *Histophilus somni*
- *Mycoplasma bovis*

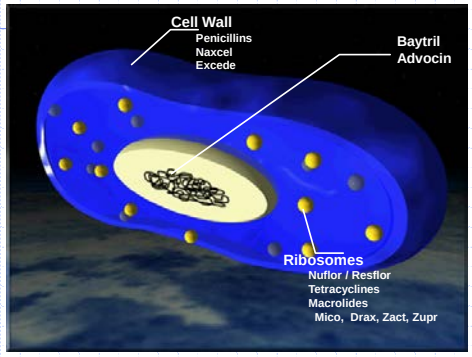
Antibiotic basics

What to Antibiotics Do?

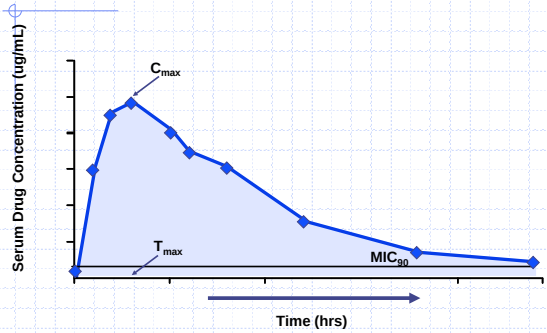
Classification of Antibiotics
(by how they work)

1. Time vs Concentration Dependent
2. Bactericidal (kill) vs. Bacteriostatic (inhibit)
3. Spectrum (Gram positive vs negative)
4. Where they work / site of action
5. Tissue Penetration

Site of action by antibiotics

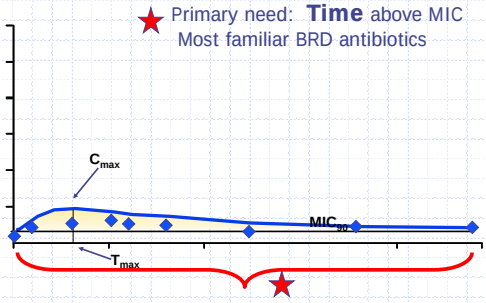


PK Parameters



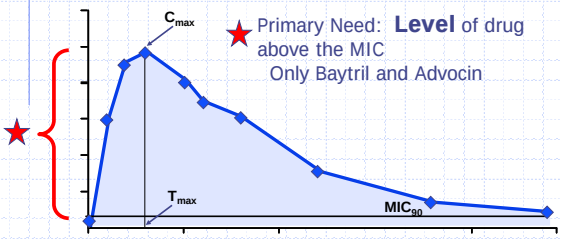
Time Dependent Drug

Primary need: **Time** above MIC
Most familiar BRD antibiotics



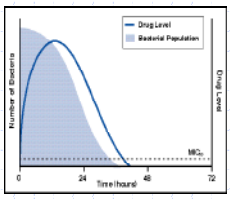
Concentration-Dependent Activity

Primary Need: **Level** of drug above the MIC
Only Baytril and Advocin

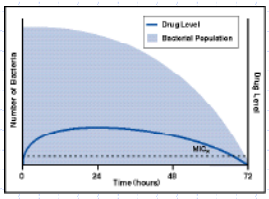


Pharmacokinetics and Effect on Bacterial Populations

Concentration-dependent

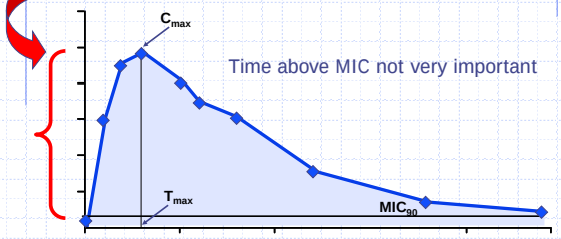


Time-dependent



Baytril: Concentration-Dependent

Level of drug above the MIC



Concentration killing; 2 major lines of Evidence

- Laboratory Bacterial Killing studies

	% Kill		
	1 hour	12 hours	24 hours
Baytril	98	98	99
Nuflor	ND	ND	ND
Micotil	27	14	75
Draxxin	0	52	86

- Clinical trial: Baytril vs Draxxin with 7-day no retreat protocol

Equal outcomes – if long duration were needed, Baytril should not have done so well.

Antibiotic Classifications

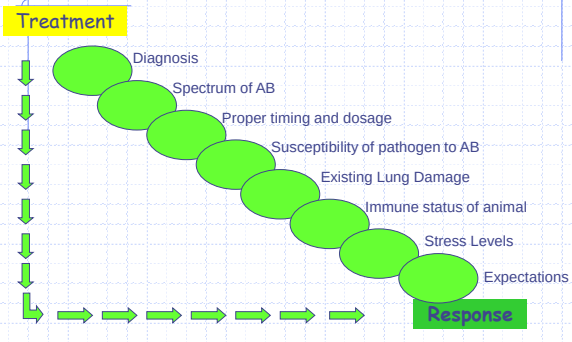
	Concentration Dependent	Time Dependent
Cidal	Baytril ~~A180~~ Advocin	Naxcel Excede Excenel Pen G
Static	None	All others

Antibiotic uses

BRD Treatment
BRD Control

BRD Treatment

Chain of Factors for Treatment Response



Therapy Dose & Administration

- **SQ, not more than 20ml/site**
- **Flexible dosage and duration of therapy:**
  - ***Single-dose:*** **7.5 - 12.5 mg/kg (3.4 – 5.7 ml / cwt)**
  - ***Multiple-day:*** **3-5 days, 2.5 - 5.0 mg/kg**

Predominant Market Regimen: 5 – 5.5ml/cwt, singe dose

BRD "Control"

Approved for cattle at high risk of developing BRD

BRD "Control"

General terms and justification

- Metaphylaxis
- Group therapy
- On-arrival treatment
- Early intervention – to get "ahead" of a likely BRD outbreak
- Reduce overall sickness (pull) rate
- Reduce labor
- Early treatment = better response

BRD "Control"
Potential Considerations – your operation

- High risk cattle
  - History
  - Current / recent conditions
  - Observation of cattle
    - Evidence of obvious stress / fatigue / etc.
  - Your facility / labor considerations
- Time of likely outbreak
  - Early outbreak = ⇧ indication
  - Late outbreak = ⇩ indication
- Cost benefit
  - Cost of drug
  - Number of pulls anticipated

Parting thoughts

- BRD – No single cause; No single solution
- Antibiotics
  - Only help with bacteria
  - Work in different ways
- Baytril 100
  - Large amount of information
  - 14-year track record of success
  - Preferred Treatment Use: Single dose 5.5 ml/cwt
  - Control Usage: Single dose 3.4 ml/cwt

Thank You !!

Questions ?

Notes – Notes -- Notes

Bayer R&D Update for Stocker Cattle

Dr. Jason Nickell
Bayer Animal Health

Baytril 100® Injectable Solution

Research and Development Update for Stocker Cattle

Jason Nickell DVM, PhD, DACVPM
Bayer HealthCare – Animal Health
Research and Development

Bayer HealthCare Animal Health Division

Brief History of Baytril 100®

Bayer HealthCare Animal Health Division

Original Baytril 100® Approval

- **July 24, 1998: approved for BRD treatment in U.S.**
- **Preceded by a long & intense debate**
- **The "concern":**
  - **FQs should be reserved for human use**
    - **FQs are important class of human-use antimicrobial**
      - **Ciprofloxacin ("Cipro")**
  - **Resistant *Salmonella* found in the UK after approval of Baytril 100 in the UK**
    - **These reports surfaced in summer of 1998, and nearly derailed the U.S. approval**

Bayer HealthCare Animal Health Division

Only human use of FQs ?

- Little or no data in 1998 to support exclusive human use
- FDA / CVM initiated surveillance program
  - Rigorous pre-approval studies / requirements
  - Extensive post-approval monitoring system
- Safeguards
  - Prescribed on the order of a licensed veterinarian
  - Off-label usage is prohibited

Baytril 100 met the additional requirements prior to approval.

Bayer HealthCare Animal Health Division

National Antimicrobial Resistance Monitoring System (NARMS)

- Nation-wide surveillance program
  - USDA, FDA, CDC
  - Since 1996
- Objective
  - To monitor antimicrobial resistance among human foodborne pathogens
  - at the farm level (USDA), in retail meats (FDA), and in humans (CDC)
- Based upon 2010 NARMS report (most recent):
  - No ciprofloxacin resistance in beef and pork
  - Baytril 100 has not induced resistance in human food-borne pathogens found on beef and pork products

Bayer HealthCare Animal Health Division

Additions to Baytril 100 Label (Since 1998)

- 2008
  - BRD treatment in dairy heifers (up to 20 months of age)
  - Swine respiratory disease (SRD)
    - treatment & control
- 2010
  - Mycoplasma bovis

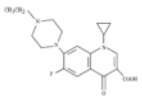
Bayer HealthCare Animal Health Division

Baytril 100 is now approved for the control of bovine respiratory disease (BRD) among cattle at high risk of developing BRD

Bayer HealthCare
Animal Health Division

Baytril 100 label changes

PRODUCT DESCRIPTION:
Baytril® 100 is a sterile, ready-to-use injectable antimicrobial solution that contains enrofloxacin, a broad-spectrum fluoroquinolone antimicrobial agent.
Each mL of Baytril® 100 contains 100 mg of enrofloxacin. Excipients are L-arginine base 200 mg, n-butyl alcohol 30 mg, benzyl alcohol (as a preservative) 20 mg and water for injection q.s.



CHEMICAL NOMENCLATURE AND STRUCTURE:
1-cyclopropyl-7-(4-ethyl-1-piperazinyl)-6-fluoro-1,4-dihydro-4-oxo-3-quinolinecarboxylic acid.

INDICATIONS:
Cattle - Single-Dose Therapy: Baytril® 100 is indicated for the treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica, Pasteurella multocida, Histophilus somni* and *Mycoplasma bovis* in beef and non-lactating dairy cattle; and for the control of BRD in beef and non-lactating dairy cattle at high risk of developing BRD associated with *M. haemolytica, P. multocida, H. somni* and *M. bovis*.

Cattle - Multiple-Day Therapy: Baytril® 100 is indicated for the treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica, Pasteurella multocida* and *Histophilus somni* in beef and non-lactating dairy cattle.

Swine: Baytril® 100 is indicated for the treatment and control of swine respiratory disease (SRD) associated with *Actinobacillus pleuropneumoniae, Pasteurella multocida, Haemophilus parasuis* and *Streptococcus suis*.

Bayer HealthCare
Animal Health Division

Baytril 100 label changes

DOSAGE AND ADMINISTRATION:
Baytril® 100 provides flexible dosages and durations of therapy.
Baytril® 100 may be administered as a single dose for one day for treatment and control of BRD (cattle) and SRD (swine), or for multiple days for BRD treatment (cattle). Selection of the appropriate dose and duration of therapy for BRD treatment in cattle should be based on an assessment of the severity of the disease, pathogen susceptibility and clinical response.

Baytril® 100 - 500 mL: Do not enter the vial with a needle more than 30 times or enter the vial with a dosage delivery device more than 4 times. Any product remaining after these maximum number of entries should be discarded.

Cattle:
Single-Dose Therapy (BRD Treatment): Administer once, a subcutaneous dose of 7.5-12.5 mg/kg of body weight (3.4-5.7 mL/100 lb).
Multiple-Day Therapy (BRD Treatment): Administer daily, a subcutaneous dose of 2.5-5 mg/kg of body weight (1.1-2.3 mL/100 lb). Treatment should be repeated at 24-hour intervals for three days. Additional treatments may be given on Days 4 and 5 to animals that have shown clinical improvement but not total recovery.
Single-Dose Therapy (BRD Control): Administer once, a subcutaneous dose of 7.5 mg/kg of body weight (3.4 mL/100 lb). Examples of conditions that may contribute to calves being at high risk of developing BRD include, but are not limited to, the following:

- Transportation with animals from two or more farm origins.
- An extended transport time with few to no rest stops.
- An environmental temperature change of ≥30°F during transportation.
- A ≥30°F range in temperature fluctuation within a 24-hour period.
- Exposure to wet or cold weather conditions.
- Excessive shrink (more than would be expected with a normal load of cattle).
- Stressful arrival processing procedures (e.g., castration or dehorning).
- Exposure within the prior 72 hours to animals showing clinical signs of BRD.

Bayer HealthCare
Animal Health Division

Pivotal BRD Control Field Study

- Objective: Evaluate the clinical efficacy of Baytril® 100 Injectable Solution for the control of naturally occurring bovine respiratory disease (BRD) in beef and non-lactating dairy cattle
  - Single-injection therapy
  - Associated with
    - *M. haemolytica*,
    - *P. multocida*,
    - *H. somni*, and
    - *M. bovis*
  - At high risk of developing the disease.

Bayer HealthCare Animal Health Division

Pivotal BRD Control Field Study

- Sites: Six investigators in five geographic regions in the U.S. and Canada

26 Feb 2010	5 Mar 2010	11 Mar 2010
Site 1 **Kelly Lechtenberg**, DVM, PhD Midwest Veterinary Services, Inc. (MVS1) Oakland, NE	**Site 2** **David Bechtol**, DVM Agri Research Center, Inc. (ARC) Canyon, TX	**Site 3** **Breck Hunsaker**, DVM, PhD Summit Research (SR) Wellington, CO
Site 4 **Calvin Booker**, DVM, MVetSc Feedlot Health Management Services (FHMS) Okotoks, Alberta, Canada	**Site 5** **Teresa Schieber**, DVM Midwest Veterinary Services, Inc. (MVS2) Oakland, NE	**Site 6** **Terry TerHune**, DVM, PhD HMS Veterinary Development, Inc. (HMS) Tulare, CA
8 Apr 2010	**29 Apr 2010**	**23 Jun 2010**

Bayer HealthCare Animal Health Division

Demographics of Study Animals

- 1150 calves enrolled
- Commercial, crossbred, weaned beef-type calves
- At least 4 months of age
- Average weight: 525 lbs (range 302-774 lbs)
- Gender was not differentiated
  - Calves at a particular site included all intact females, all males (intact and castrated), or a combination thereof

Bayer HealthCare Animal Health Division

Pivotal BRD Control Field Study: High-risk factors

- Transportation with animals from two or more farm origins.
- An extended transport time with few to no rest stops.
- An environmental temperature change of ≥30° F from origin to study site.
- A ≥30° F range in temperature fluctuation at a study site within a 24-hour period.
- Exposure to wet or cold weather conditions.
- Excessive shrink (more than would be expected with a normal load of cattle).
- Surgical arrival processing procedures (castration or dehorning).
- Exposure within the prior 72 hours to animals showing clinical signs of BRD.

Bayer HealthCare Animal Health Division

Pivotal BRD Control Field Study: High-risk factors

Risk Factors	Transportation with animals from multiple farm origins	Extended transportation time with few to no rest stops	Environmental Temp change >30°F from origin to study site	A >30°F range in temperature fluctuation at a study site within a 24hr period	Exposure to wet or cold weather	Excessive shrink	Other (additional risk factors documented by Investigator)
TerHune Truck #1	x (saleyard)	x (13hrs)	x	x		x	
TerHune Truck #2	x (saleyard)	x (13hrs)	x	x		x	
TerHune Truck #3	x (saleyard)	x (13hrs)	x	x		x	
Schieber Truck #1	x	x (8hrs)					recently weaned, bawling calves
Schieber Truck #2	x	x (15hrs)			x (rained)		recently weaned, bawling calves
Schieber Truck #3	x	x (14hrs)					recently weaned, bawling calves
Lechtenberg Truck #1	x (14 sources)	x (7hrs)			x		
Lechtenberg Truck #2	x (multiple sources)	x (13hrs)	x		x	x (7.4%)	
Lechtenberg Truck #3	x (5 sources)	x (6hrs)			x		
Hunsaker Truck #1	x	x	x	x	x		
Hunsaker Truck #2	x	x	x	x	x		
Hunsaker Truck #3	x	x	x	x	x		
Booker Truck #1	x						
Booker Truck #2	x						
Booker Truck #3	x						
Booker Truck #4	x						
Bechtol Truck #1	x	x	x	x	x		
Bechtol Truck #2	x	x	x	x	x		

Bayer HealthCare Animal Health Division

Pivotal BRD Control Field Study

- Inclusion Criteria
  - Good health with no complicating injuries and no clinical signs of BRD at enrollment
    - depression score = 0, and respiratory score ≤1, and a rectal temperature <104.0º F, and only if they had experienced one or more high-risk factors for BRD.
- BRD Definition:

  1) a depression score = 1 or 2 *and* rectal temperature ≥104.0º F, or

  2) a respiratory score = 2 *and* rectal temperature ≥104.0ºF, or

  3) a respiratory or depression score = 3, regardless of the rectal temperature.

Bayer HealthCare Animal Health Division

Pivotal BRD Control Field Study

- Design
  - Maximum of 200 animals / site with 10 head / pen.

Group	Number of animals per site	Product	Regimen	Mode
1	85 – 100	**Saline** (Control Product)	One dose, day 0, 0.075 mL/kg	Subcutaneous injection
2	85 – 100	**Baytril® 100** (Investigational Veterinary Product)	One dose, day 0, 0.075 mL/kg (7.5 mg/kg)	Subcutaneous injection

Bayer HealthCare Animal Health Division

Pivotal BRD Control Field Study

- Post-Inclusion Removal Criteria
  - Daily assessments days 1-14
  - Treatment failures (i.e. cattle diagnosed with BRD) were removed from pen and study
  - Recovery, morbidity, or death did not change treatment failure status.
  - All treatment failures were included in the study's data analysis.

Bayer HealthCare Animal Health Division

Pivotal BRD Control Field Study

- Results (BRD morbidity on Day 14)

Outcome	Saline (N = 571)	Baytril® 100 (N = 573)	P-value
BRD pulls	19%	12%	0.0012

Baytril 100 reduced BRD morbidity (pull rate) by 37% compared to controls

Bayer HealthCare Animal Health Division

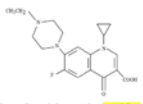
Summary

- Baytril 100 significantly reduced BRD pull rate when administered metaphylactically to calves at high risk of developing BRD

Bayer HealthCare Animal Health Division

Baytril 100 label changes

PRODUCT DESCRIPTION:
Baytril® 100 is a sterile, ready-to-use injectable antimicrobial solution that contains enrofloxacin, a broad-spectrum fluoroquinolone antimicrobial agent.
Each mL of Baytril® 100 contains 100 mg of enrofloxacin. Excipients are L-arginine base 200 mg, n-butyl alcohol 30 mg, benzyl alcohol (as a preservative) 20 mg and water for injection q.s.



CHEMICAL NOMENCLATURE AND STRUCTURE:
1-cyclopropyl-7-(4-ethyl-1-piperazinyl)-6-fluoro-1,4-dihydro-4-oxo-3-quinolinecarboxylic acid.

INDICATIONS:
Cattle - Single-Dose Therapy: Baytril® 100 is indicated for the treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica, Pasteurella multocida, Histophilus somni* and *Mycoplasma bovis* in beef and non-lactating dairy cattle; and for the control of BRD in beef and non-lactating dairy cattle at high risk of developing BRD associated with *M. haemolytica, P. multocida, H. somni* and *M. bovis*.

Cattle - Multiple-Day Therapy: Baytril® 100 is indicated for the treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica, Pasteurella multocida* and *Histophilus somni* in beef and non-lactating dairy cattle.

Swine: Baytril® 100 is indicated for the treatment and control of swine respiratory disease (SRD) associated with *Actinobacillus pleuropneumoniae, Pasteurella multocida, Haemophilus parasuis* and *Streptococcus suis*.

Bayer HealthCare Animal Health Division

Baytril 100 label changes

DOSAGE AND ADMINISTRATION:
Baytril® 100 provides flexible dosages and durations of therapy.
Baytril® 100 may be administered as a single dose for one day for treatment and control of BRD (cattle) and SRD (swine), or for multiple days for BRD treatment (cattle). Selection of the appropriate dose and duration of therapy for BRD treatment in cattle should be based on an assessment of the severity of the disease, pathogen susceptibility and clinical response.

Baytril® 100 - 500 mL: Do not enter the vial with a needle more than 30 times or enter the vial with a dosage delivery device more than 4 times. Any product remaining after these maximum number of entries should be discarded.

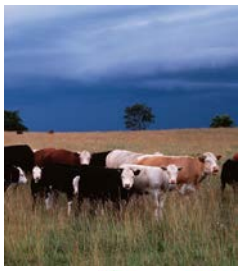
Cattle:
Single-Dose Therapy (BRD Treatment): Administer once, a subcutaneous dose of 7.5-12.5 mg/kg of body weight (3.4-5.7 mL/100 lb).
Multiple-Day Therapy (BRD Treatment): Administer daily, a subcutaneous dose of 2.5-5 mg/kg of body weight (1.1-2.3 mL/100 lb). Treatment should be repeated at 24-hour intervals for three days. Additional treatments may be given on Days 4 and 5 to animals that have shown clinical improvement but not total recovery.
Single-Dose Therapy (BRD Control): Administer once, a subcutaneous dose of 7.5 mg/kg of body weight (3.4 mL/100 lb). Examples of conditions that may contribute to calves being at high risk of developing BRD include, but are not limited to, the following:

- Transportation with animals from two or more farm origins.
- An extended transport time with few to no rest stops.
- An environmental temperature change of ≥30°F during transportation.
- A ≥30°F range in temperature fluctuation within a 24-hour period.
- Exposure to wet or cold weather conditions.
- Excessive shrink (more than would be expected with a normal load of cattle).
- Stressful arrival processing procedures (e.g., castration or dehorning).
- Exposure within the prior 72 hours to animals showing clinical signs of BRD.

Bayer HealthCare Animal Health Division

Thank You!

Questions?



Bayer HealthCare Animal Health Division

Backup: Depression Score

Score	Magnitude	Description
0	Normal	Bright, alert, and responsive.
1	Mild	May stand isolated with its head down or ears drooping, but will quickly respond to minimal stimulation.
2	Moderate	May stand isolated with its head down and may show signs of muscle weakness (standing cross-legged or knuckling when walking). Shows a delayed response to minimal stimulation or requires greater stimulation before showing a response.
3	Severe	May be recumbent and reluctant to rise, or if standing isolated, may be reluctant to move. Ataxia, knuckling, or swaying may be evident when moving. Head carried low with eyes dull and ears drooping. Possible excess salivation and/or lacrimation.

Bayer HealthCare Animal Health Division

Backup: Respiratory Score

Score	Magnitude	Description
0	Normal	No abnormal respiratory symptoms. Respiratory rate and effort are appropriate for the environment.
1	Mild distress	Serous nasal or ocular discharge and/or cough.
2	Moderate distress	Mucous or mucopurulent nasal or ocular discharge and/or increase in respiratory rate or effort.
3	Severe Distress	Marked increase in respiratory rate or effort, with one or more of the following: open mouth breathing, abdominal breathing, and/or extended head.

Bayer HealthCare Animal Health Division

Summary of treatment success by treatment group by study site (percent success; 95% confidence interval):

Site Number	Saline	Baytril® 100
1	89/100 (89.00%; 82.87, 95.13)	86/100 (86.00%; 79.20, 92.80)
2	69/90 (76.76%; 67.93, 85.40)	80/90 (88.89%; 82.40, 95.38)
3	61/81 (75.31%; 65.92, 84.70)	72/84 (85.71%; 78.23, 93.20)
4	97/100 (97.00%; 93.66, 100.00)	95/100 (95.00%; 90.73, 99.27)
5	58/100 (58.00%; 48.33, 67.67)	66/99 (66.67%; 57.38, 75.95)
6	81/100 (81.00%; 73.31, 88.69)	98/100 (98.00%, 95.26, 100.00)

Kansas State University Beef Stocker Field Day September 27, 2012 Slide 25

Bayer HealthCare
Animal Health Division

Notes – Notes -- Notes

Byproduct Utilization and Growing Cattle

Dr. Terry Klopfenstein
Professor Emeritus, University of Nebraska

Byproduct Utilization and Growing Cattle

Terry Klopfenstein

Contributors:
Abe Turgeon, Mike Lewis, Mike Sindt, Jim Drouillard, Brent Vieselmeyer, Drew Shain, Greg Lardy, D. J. Jordon, Dale Downs, Jim MacDonald, Jeff Folmer, Will Griffin, Kelsey Rolfe, Kari Gillespie, Rick Stock, Galen Erickson

University of Nebraska Lincoln

Backgrounding

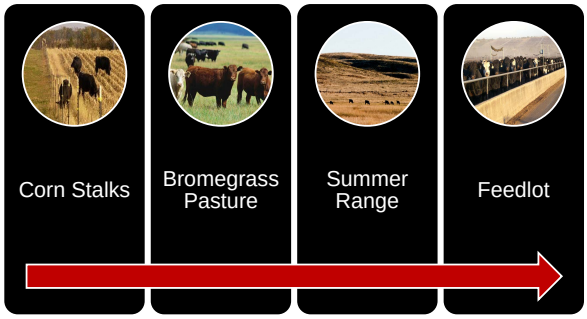
- Feedlots – daily slaughter/replacement
- Economics of backgrounding
- Feed resources
- Commodity prices
- Forage less expensive than grains/byproducts
- Calf-feeding to yearlings?

UNL Research

- Systems research since 1980
- 200 to 300 calves/year
- Spring-born, fall weaned

University of Nebraska Lincoln

Growing and Finishing System



Increase Backgrounding Gains

1. Forage Quality
2. Time on Forage
3. Implants and Ionophores
4. Protein and(or) Energy Supplements

DDG fits forage programs

- Summer DDG
  - Availability
  - Prices

DDG Nutrient Profile	
DM	88%
CP	32%
UIP	65%
Fat	12.5%
NDF	37%

- Both UIP and fat contribute to improved cattle performance
  (MacDonald et al., 2006)

DDG energy (forage diet)

	LOW	HIGH	SEM
ADG, lb/d			
corn	.81	1.57	.05
DDG	.99	1.89	.05
F:G			
corn	15.9	9.8	.5
DDG	12.8	8.0	.5

DDG ~127% of corn

Loy et al., 2003 Nebraska Beef Report

Energy Value of WDGS

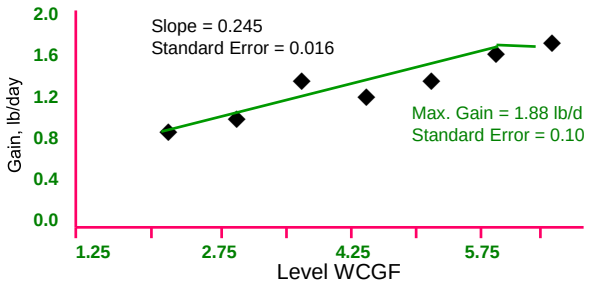
Item	DRC	WDGS
Initial BW, lb	629	630
Final, BW. lb	811	824
DMI, lb/d	17.9	17.7
ADG, lb	2.72	2.89
F:G	6.61	6.15
Energy	100	130

- DGS range of energy values
  - –Loy et al., 2008: 118-130%
  - –Nuttelman et al., 2009: 130%
  - –Nuttelman et al., 2010: 142-149%
  - –Current based on predicted ADG: 130%
  - –Current corrected using NRC: 114-119%

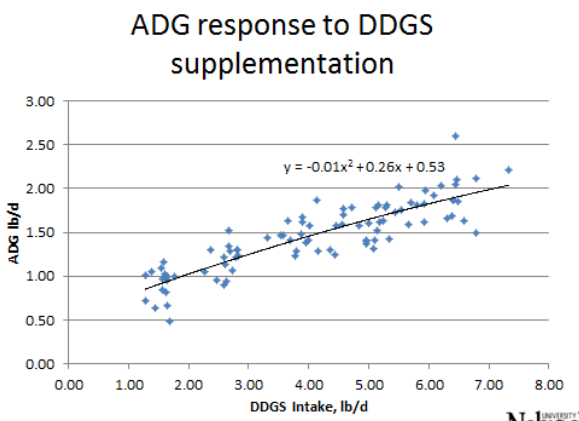
Gluten Feed vs Corn[1]

	CON[1]	CORN	DCGF[1]	WCGF[1]
DMI	11.66	18.02	16.44	16.19
ADG	1.16	2.25	2.15	2.36
F/Gain	10.5	8.01	7.64	6.86

[1]Oliveros et al. (1987).
[2]Forage diet unsupplemented or supplemented with 40% corn, dry corn gluten feed or wet corn gluten feed.



Daily gain of steers supplemented with wet corn gluten feed on cornstalks.



Wintering Costs of Gain[1]

System	$/lb gain
East NE drylot	$.90
Sandhills Ranch drylot	$.93
Sandhills range, corn, SBM, hay	$.82
Sandhills DDGS	$.65
Cornstalk grazing, WDGS	$.63

[1]Corn = $6/bu.; hay = $.049/lb DM; WDGS = $.10/lb DM; SBM = $.18/lb DM; mineral = $.04/day; East NE drylot yardage = $.40 day; Ranch drylot yardage = $.30/day; range = $16.50/AUM, $.20/day yardage; stalks = $.14/day, $.30/day yardage.

What do they eat?

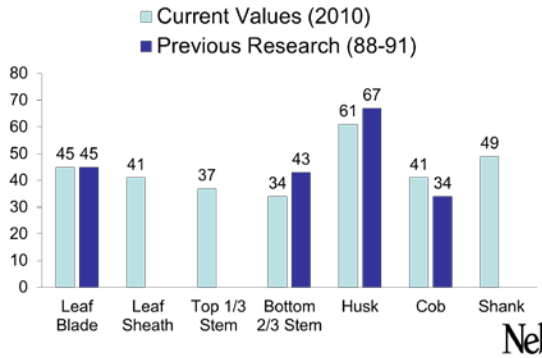
Parts They Eat	lb/bu DM available
Husk	2.6
Leaf blade	8.5
Leaf Sheath	4.2
Total	15.3

Distribution of Plant Parts[1]

- Husk – 6.7%
- Leaf Blade – 22.1%
- Leaf Sheath – 10.8% (39.6%)
- Cob – 11.9%
- Stem – 48.5%

[1]10 hybrids, 4 densities, 600 plants

Digestibility (%)



Grazing Removal

- 200 bu/ac corn yield
- 1600 lb leaf/husk/ac consumed (2.4 AUM/ac)
- 7680 lb/ac total residue
- 21% removal
- 45% indigestible (11.6% removal)

Consequences

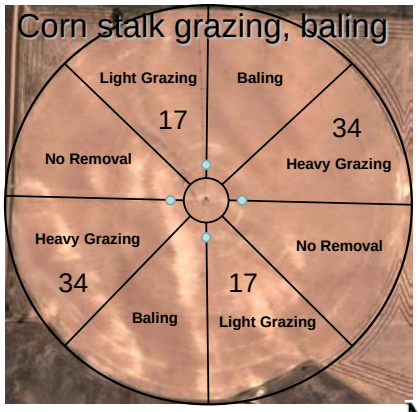
- Subsequent Crop Yields
- Soil
- Water

	Corn	Soybeans
1	Fall Grazed 277 Rows	
	Spring Grazed 36 Rows	
	Ungrazed 32 Rows	
2	Spring Grazed 36 Rows	
	Fall Grazed 100 Rows	

	Road	
3	Fall Grazed 164 Rows	
	Spring Grazed 36 Rows	
	Ungrazed 32 Rows	
4	Spring Grazed 36 Rows	
	Fall Grazed 184 Rows	

Crop Yields – Fall/Winter Grazing

- Linear-Move, '96 – '11, corn/soybean
  - Soybeans, 60.4 vs 62.4 grazed
  - Corn, 205.8 vs 208.9 grazed
- Dryland '93 - '95, corn/corn
  - Corn, 147 vs 149.5 grazed



Corn Yields

	Treatment			
Year	Control	1 AUM/Ac	2 AUM/Ac	Baling
2009	124	128	133	124
2010	141	144	145	142
2011	165	159	170	166
Average	143	144	149	144

Crop Residues Produced in Kansas

- Corn, 4.2 million acres
  @ 140 bu/ac = 16.5 million tons
- Wheat, 8 million acres
  @ 42 bu/ac = 6 million tons
- Sorghum, 2 million acres
  @ 65 bu/ac = 1.82 million tons
- Total = 24.32 million tons
- Sustainable total? = 11.5 million tons

Kansas Cattle/Residues

- Cows – 1.6 million (200d)
- Stockers – 1 million (200d)
- Feedlot – 2.5 million (5 lb/d)
- Total usage = 7.5 million tons

Wet Distillers Grains and Straw[1]

	WDGS	
	30%	45%
Initial wt, lb	509	510
DMI, lb	9.2	9.7
ADG, lb	.82	1.22
F:G	11.3	8.0

[1]Buckner et al., 2010 BR

Nebraska Lincoln

Wet Distillers Grains Plus Solubles with Straw[1]

	WDGS			
	25%	35%	45%	55%
Initial Wt., lb	562	557	554	555
DMI, lb	9.04	9.73	10.84	11.17
ADG, lb	.47	.94	1.23	1.60
F:G	21.0	10.52	9.20	6.86

[1]Peterson 2009 BR.
[2]Ensiled mixes.

Performance summary of five winter supplementation trials at two supplementation levels

	Low[1]	High[2]
Winter phase		
Initial BW, lb	500	500
Days	143	143
ADG, lb/d	0.49	1.41
Summer phase		
Days	135	135
ADG	1.46	1.09
Finishing phase		
DOF	112	107
ADG, lb/d	4.15	4.35
DMI, lb/d	28.2	29.2
Final BW, lb	1240	1325

[1]Low = cattle supplemented during the winter phase for a low daily gain

[2]High = cattle supplemented during the winter phase for a high daily gain

Nebraska Lincoln

Profitability Analysis of High and Low Winter Supplementation Levels

	Low[1]	High[2]
Initial purchase cost, $/hd	850.34	850.34
Winter phase		
Cornstalk grazing cost, $/hd	45.76	45.76
MDGS cost, $/hd	34.32	85.80
Summer phase		
Grazing cost, $/hd	107.68	107.68
Finishing phase		
Finisher diet cost, $/hd	408.72	406.22
Feedyard yardage, $/hd	50.18	48.15
Total revenue, $/hd	1487.52	1590.48
Profit, $/hd	-9.48	46.53

[1]Low = cattle supplemented during the winter phase for a low daily gain with 2 lb MDGS/head daily

[2]High = cattle supplemented during the winter phase for a high daily gain with 5 lb MDGS/head daily

Objectives

Determine the effects of supplementing modified distillers grains with solubles (MDGS) while grazing native range.

Modified Wet Distillers Grains (MDGS) During Summer Grazing

Item	CON	SUPP
Initial BW, lb	505	504
Spring BW, lb	747	750
Summer BW, lb	929	1032
Summer ADG, lb	1.39	2.07
Feedlot BW, lb	1409	1412
Feedlot DMI, lb	30.0	30.1
Feedlot ADG, lb	3.83	3.77
Feedlot GF	0.128	0.125
Feedlot DOF, d	125	101
BF, in	0.50	0.52
MARB	590	546

Pasture vs Feedlot

760 lb (dm) Feedlot diet - $129.20

Feedlot yardage difference $10.52

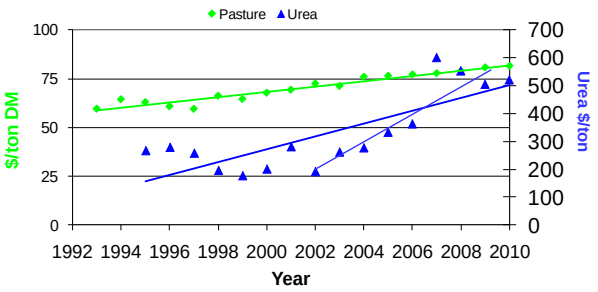
17% less grass - $13.50

680 lb (dm) MDGS - $115.60

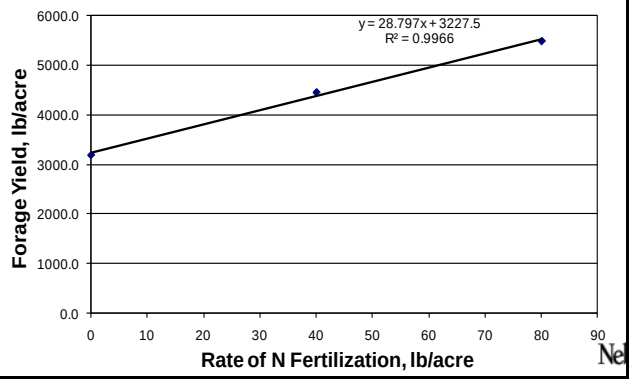
Pasture yardage difference $16.04

Net $21.58.

Urea and Pasture Prices



Effect of N rate on total bromegrass forage production

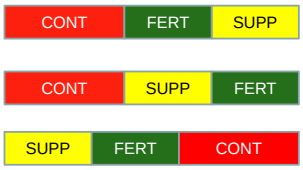


Hypothesis

- Supplementation and management strategies can be used on smooth bromegrass pastures grazed by yearling beef cattle to increase N capture and to reduce N excretion, thus increasing N use efficiency.

Materials and Methods

- 3 treatments
  - Fertilized (FERT)
    - 80 lbs/acre
    - 4.0 AUM/acre
  - Supplemented (SUPP)
    - 0.6% of BW
    - 4.0 AUM/acre
  - Control (CONT)
    - 69% stocking rate
    - 2.75 AUM/acre



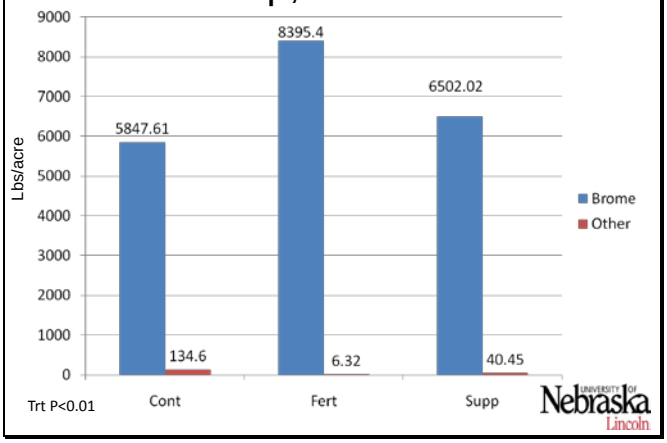
- 3 replications per treatment

Cattle Performance 2005-2009

	CONT	FERT	SUPP	SEM	P-Value
Days	158	158	158		
Initial BW, lbs	718	716	713	12.78	0.96
End BW, lbs	959 [a]	954 [a]	1046 [b]	15.40	<0.01
ADG, lbs/d	1.53 [a]	1.51 [a]	2.11 [b]	0.07	<0.01

[a,b] Means without a common superscript differ (P<0.01)

Total Crop, lbs/acre 2009



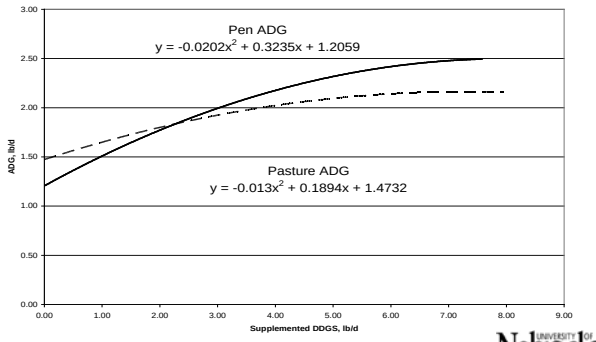
Economics

	CON	FERT	DDGS
DDGS, $/hd	--	--	59.14
Fertilizer, $/hd	--	35.48	--
Cash rent, $/hd	105.71	69.65	70.78
Total, $/hd	953.97	951.14	971.69
Revenue, $/hd	947.77	942.43	994.48
Profit, $/hd	-6.20	-8.71	22.79

Economics

- N fertilizer price
- Cash rent
- DG price

Figure 1. Effect of DDGS supplementation on ADG for growing\cattle supplemented DDGS



http://beef.unl.edu

Grass vs N Fertilizer

$23.86/AUM

$390/Ton Urea-equivalent COG

Ratio = 16.3

AUM ↑ $30 ≈ $489/ton urea

Grass vs DG

$23.86/AUM

$197/Ton DG-equivalent COG

Ratio = 8.26

AUM ↑ $30 ≈ $248/ton DG

DG vs Fertilizer

$390/Ton urea

$197/ton DG

Ratio = 2

Notes – Notes -- Notes

Pasture Weed Control

Dr. Walt Fick
Kansas State University

Pasture Weed Control

Walter H. Fick
K-State Research & Extension

Rangeland & Pasture in Kansas

- 15.8 million acres rangeland
- 2.5 million acres pastureland
- 6.1 million cattle
- 1.43 million beef cows

What is a weed?

- Plant growing out of place
- A plant whose virtues have yet to be discovered
- Any plant not eaten by livestock

Causes of Weed Invasion

- **Reduction of fire**
- **Climatic fluctuations**
- **Seed transport by animals, wind, water, etc.**
- **Grazing by domestic livestock**
- **Decreased fertility in tame pastures**

Value of forbs and woody plants

- Add to production and forage quality
- Browse for sheep, goat, deer, cattle
- Watershed protection
- N-fixation by legumes
- Woody plants provide shade, winter protection and cover

Grazing intensity and forb disappearance at Hays, KS

Stocking Rate	Acres/head	Forb Yield (lbs/acre)	% Disappearance
Heavy	2.0	270	74
Moderate	3.5	710	49
Light	5.0	1020	40

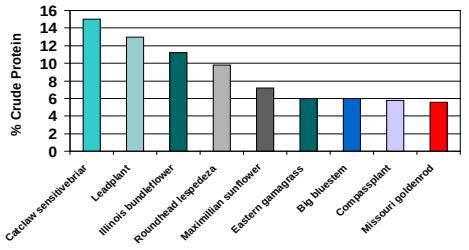
Consumption of forbs by steers in the Flint Hills

Treatment	Yield (lbs/acre)	% Disappearance
Late spring burn	160	31
Not burned	300	40

Catclaw sensitivebriar

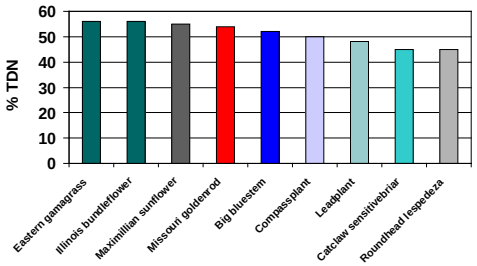
Illinois bundleflower

% Crude protein



Obermeyer and Blocksome, 2009 (Woodson and Wabaunsee Co.)

% Total Digestible Nutrients



Obermeyer and Blocksome, 2009 (Woodson and Wabaunsee Co.)

Non-grass species cows eat in the Flint Hills

Dotted gayfeather

Heath aster

Leadplant

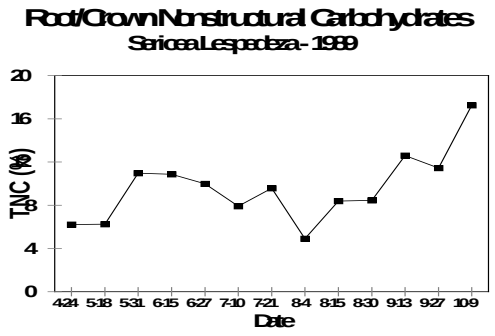
Purple prairieclover

Factors Influencing Control

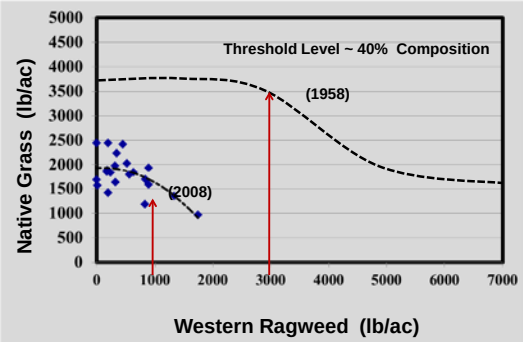
- Growth habit
- TNC cycle
- Density/cover relationships
- Environmental conditions

Herbaceous Weeds

Annual	Biennial	Perennial
Broomweed	Musk thistle	Western ragweed
Lanceleaf ragweed	Common mullein	Baldwin ironweed
Japanese brome	Curlycup gumweed	Goldenrod

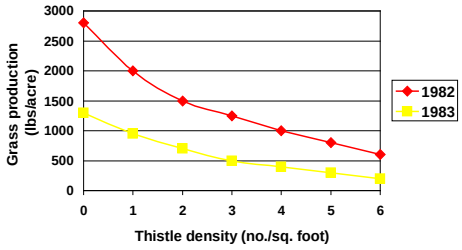


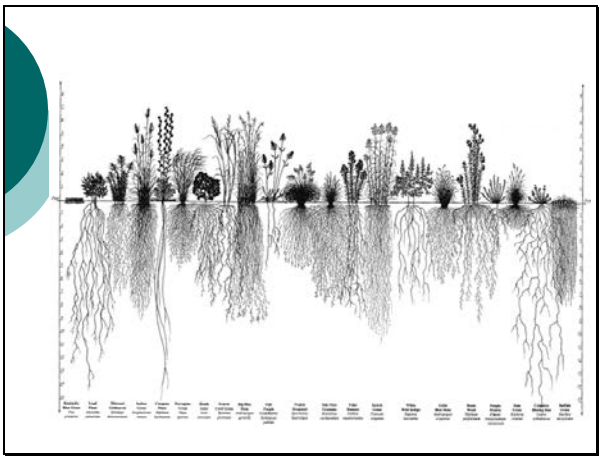
Ragweed Composition in Mixed Grass 1958 and 2008



Prepared by Keith Harmoney

Musk Thistle Density Effects on Grass Production



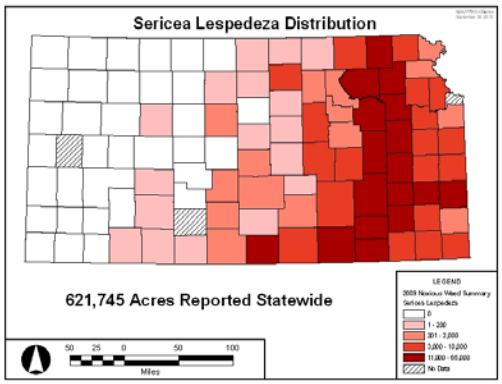


Control Options

- Grazing management
- Mechanical
- Prescribed burning
- Biological
- Chemical

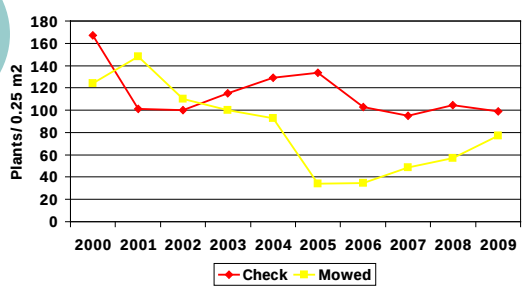
Grazing Management

- Kind of animal
- Season of use
- Distribution of grazing
- Stocking rate

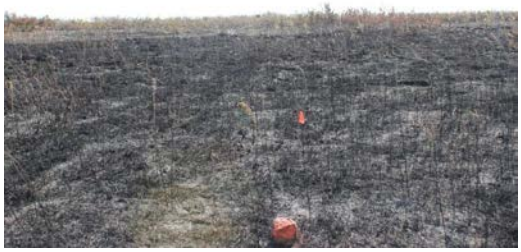


Combination Grazing

Mowing effects on sericea lespedeza



September 23, 2011 – Ft. Riley



Lespedeza webworm

Sericea Lespedeza Control Pottawatomie County (1 YAT)

Herbicide	Rate/A	6-4-10	9-17-10	10-6-10
Escort	1 oz	12	96	93
MAT 28 + Escort	3.75 + 1 oz	82	98	100
MAT 28 + Telar	3.75 + 1 oz	91	98	98
PastureGard	2 pt	91	98	81
Remedy	1 pt	88	97	58


Musk Thistle


Musk Thistle Control – Pottawatomie County Treated June 10, 2011

Herbicide	Rate	1 MAT
F9007-2	1 oz	90
F9007-2 + 2,4-D ester	1 oz + 0.25 lb	92
Ally	0.25 oz	92
Ally + 2,4-D LVE	0.2 oz + 0.5 lb	92
Grazon P+D	2 pt	96
Milestone	4 oz	98
ForeFront R&P	2 pt	100
Chaparral	2.5 oz	98
Weedmaster	2 pt	96
2,4-D LVE	1.5 lb	97

Keys to herbicide use

- Identify weed
- Select appropriate product
- Time application correctly
- Apply correctly
- Follow grazing & hay restrictions

Grazing/Haying Restrictions (days)

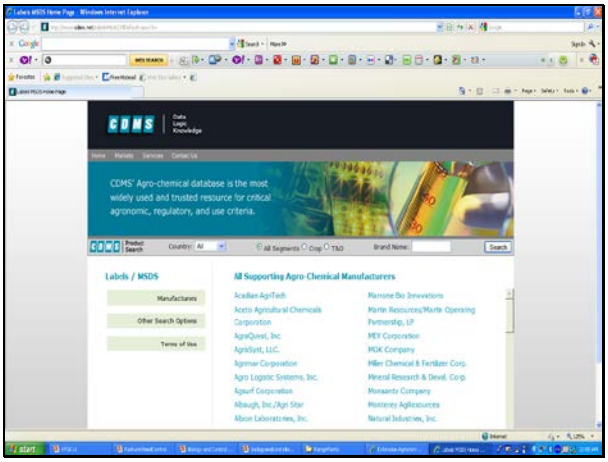
	Beef/non-lactating animals		Lactating dairy animals	
Herbicide	Before grazing	Before haying	Before grazing	Before haying
2,4-D	0	30	7	30
Chaparral	0	0	0	0
Escort XP	0	0	0	0
ForeFront R&P	0	7	0	7
Grazon P+D	0	30	7	30
Milestone	0	0	0	0
PastureGard	0	14	Next growing season	14
Remedy Ultra	0	14	Next growing season	14
Telar	0	0	0	0
Weedmaster	0	37	7	30

Hay Meadow Management and Weed Control

- Harvest date
- Cutting height
- Fertilization
- Prescribed burning
- Grazing
- Weed control

Johnsongrass Control – 2 WAT Outrider (Sulfosulfuron) 1.3 oz/acre

Johnsongrass Control – 2WAT
Pastora (Nicosulfuron + Metsulfuron)
1 oz/acre



Caucasian Bluestem

Yellow Old World Bluestem

Benefits of weed and brush control

- Increased forage production/availability
- Easier livestock handling
- Reduction of toxic plants
- Wildlife habitat manipulation
- Increased water yield from watersheds
- Clear area for other practices, e.g. seeding
- Reduce insect and disease problems

Contact Information

Walter H. Fick
Department of Agronomy – TH
Kansas State University
Manhattan, KS 66506
Phone: (785) 532-7223
E-mail: whfick@ksu.edu
Website:
http://www.agronomy.ksu.edu/extension/p.aspx?tabid=15

Notes – Notes -- Notes

Purchasing Commodity Feeds

Rodney Derstein
Tallgrass Commodities

Purchasing Commodity Feeds

- Buying Direct
  - Generally give just FOB prices
  - Limited to specific commodity
  - Terms are ACH/cod/net 10 days
  - Good for customers that sell grain to plant

Purchasing Commodity Feeds

- Brokers compared to Merchandisers
  - Brokers connect buyers to sellers
    - Normally work with specialized ingredient
    - Freight taken care of by the buyer OR the seller
    - AR is ran through the seller
      - Generally prepay/cod/net 10 days
    - Broker is paid commission for their service
    - High tonnage/low margin
      - Work with several customers
      - Work with large customers

Purchasing Commodity Feeds

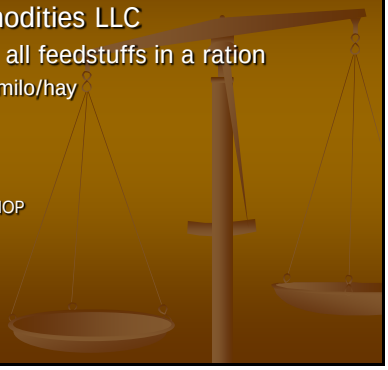
- Brokers compared to Merchandisers
  - Merchandisers purchase several different commodities
    - Generally take care of freight
    - Price commodity on a delivered basis
    - Inherit some risk by purchasing commodity
    - Make money on market move, volume opportunities, and cheaper freight
      - Potential to lose money on market move/freight
    - General terms are Net 10-15 depending credit
    - Usually have more options if using different commodities
      - Buy from multiple plants
    - High tonnage/low margin

Purchasing Commodity Feeds

- What does your ration need?
  - Work closely with your extension agent and or nutritionist
    - Corn/milo/forage needs
      - Byproducts – several options
        - Distillers Grains
        - Soy products
        - Midd products
        - Corn Gluten products
        - Cotton products

Purchasing Commodity Feeds

- Tallgrass Commodities LLC
  - Find pricing for all feedstuffs in a ration
    - Also buy corn/milo/hay
    - Mineral
    - Cubes
    - Balancer
      - ONE STOP SHOP



Purchasing Commodity Feeds

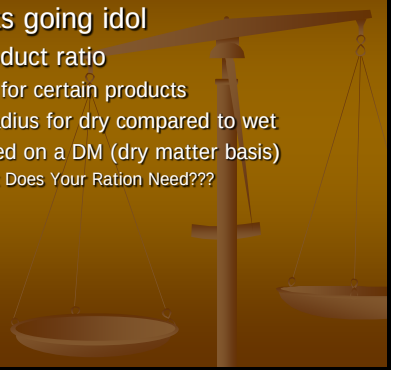
- Freight
  - Rail & Transload
    - 85-100 ton/railcar
  - Bulk truck loads
    - 25 ton/load
  - Delivery options
    - Hopper/grain trailer
    - End dump
    - Belt/Live bottom

Purchasing Commodity Feeds

- Prices Today
  - All high
    - All relative
  - Reasoning
    - DROUGHT
      - Taken its toll on all commodities
    - Ethanol
      - Bad margins = plants idol
      - What will the future bring???

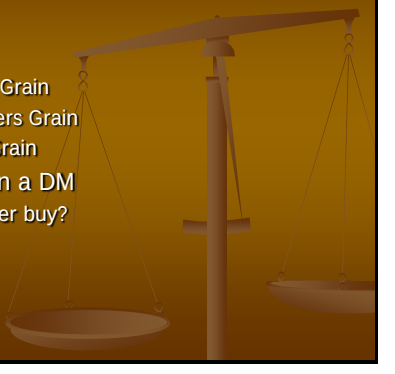
Purchasing Commodity Feeds

- Results of plants going idol
  - Demand to product ratio
    - Higher pricing for certain products
    - Plant selling radius for dry compared to wet
    - Products figured on a DM (dry matter basis)
      - Back to What Does Your Ration Need???



Purchasing Commodity Feeds

- Options?
  - Distillers grains
    - Dried Distillers Grain
    - Modified Distillers Grain
    - Wet Distillers Grain
  - Compare ALL on a DM
    - Which is a better buy?



Purchasing Commodity Feeds

- Consider different alternatives
  - Plans/Projections
    - What are your options
      - What does Your Ration Need?
        - With high inputs
        - Extension Agent
        - Nutritionist
        - Commodity Buyer
        - Know the market

Purchasing Commodity Feeds

- QUESTIONS???

Notes – Notes -- Notes

Why is he Dead?
What a Necropsy Can Tell Us

Dr. Larry Hollis
Kansas State University

Why Is He Dead?
What A Necropsy Can Tell Us

Larry C. Hollis, D.V.M., M.Ag.
Extension Beef Veterinarian
Kansas State University

K-STATE Research and Extension
Knowledge for Life

K-STATE Research and Extension
Knowledge for Life

K-STATE Research and Extension
Knowledge for Life

Is a dead animal a total loss to you

?

K-STATE Research and Extension

Knowledge for Life

Diagnostic Tool

Necropsy

Necropsy = Autopsy

K-STATE Research and Extension

Knowledge for Life

Necropsy

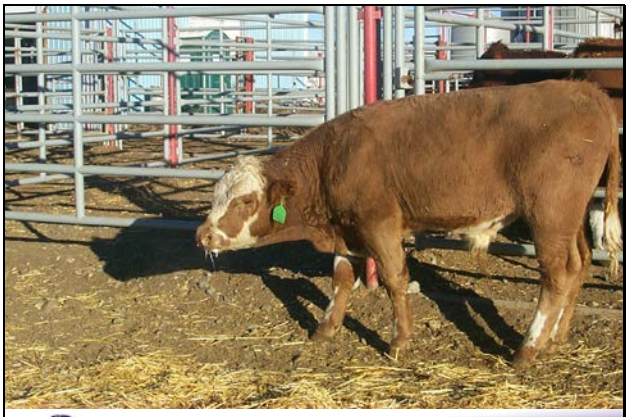
- History
  - Who
  - What
  - When
  - Where
  - How

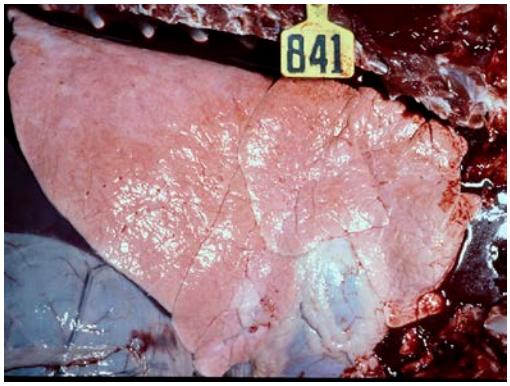
K-STATE Research and Extension

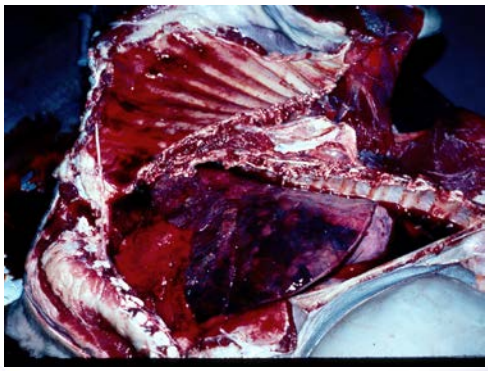
Knowledge for Life

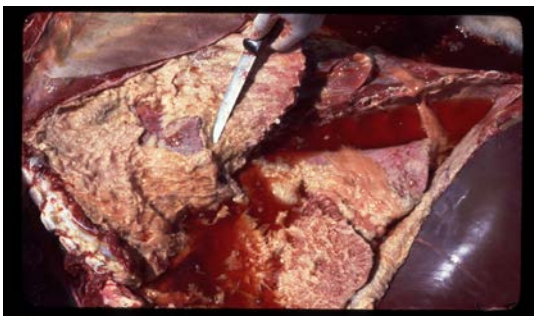
Necropsy

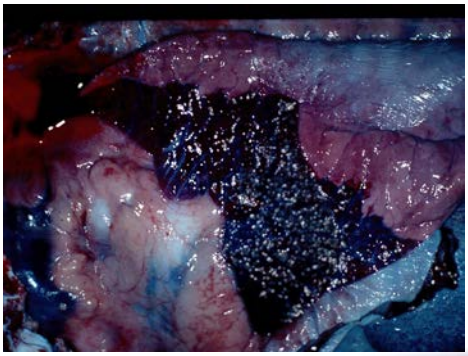
- External evaluation
- Internal evaluation




841







K-STATE Research and Extension

Knowledge for Life

K-STATE Research and Extension

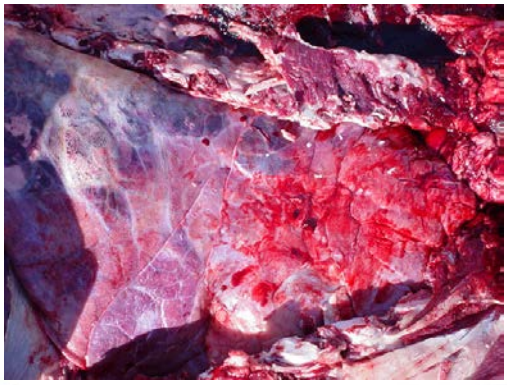
Knowledge for Life

K-STATE Research and Extension

Knowledge for Life

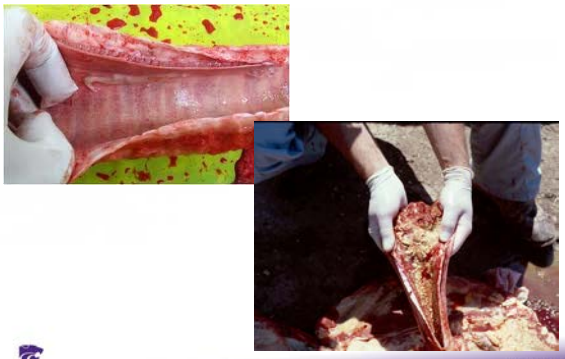
K-STATE Research and Extension

Knowledge for Life



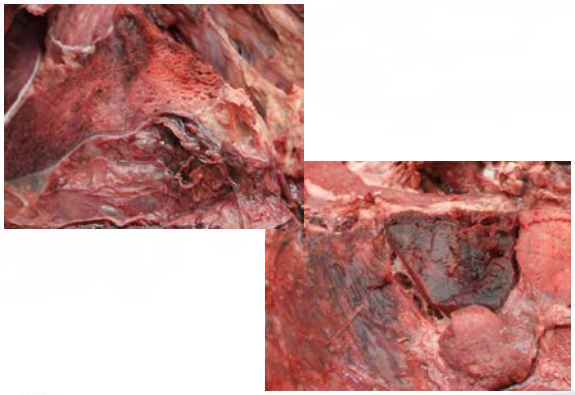
K-STATE Research and Extension

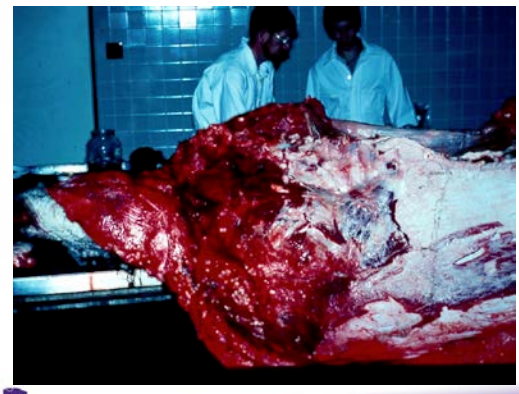
Knowledge for Life

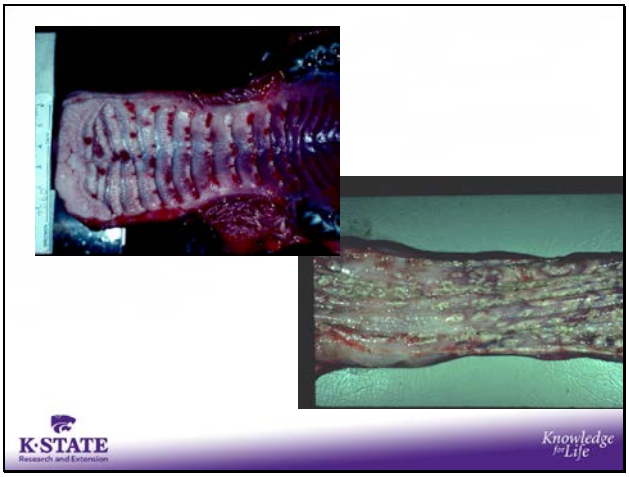


K-STATE Research and Extension

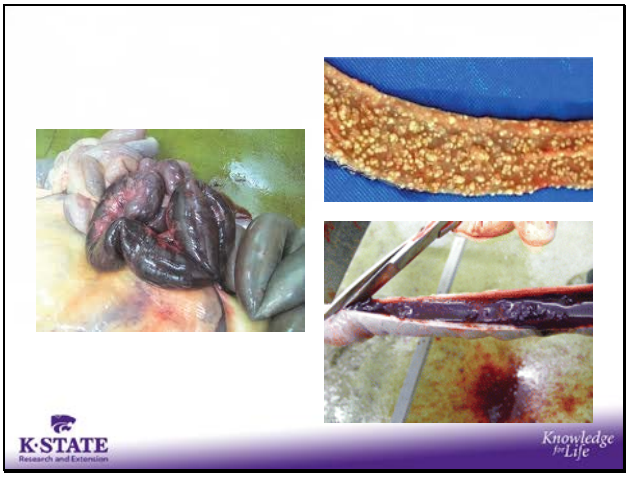
Knowledge for Life

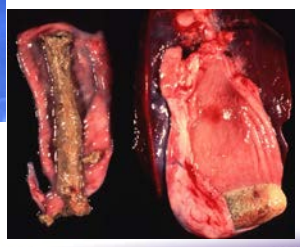





K-STATE
Research and Extension
Knowledge for Life


K-STATE
Research and Extension
Knowledge for Life


K-STATE
Research and Extension
Knowledge for Life



K-STATE Research and Extension

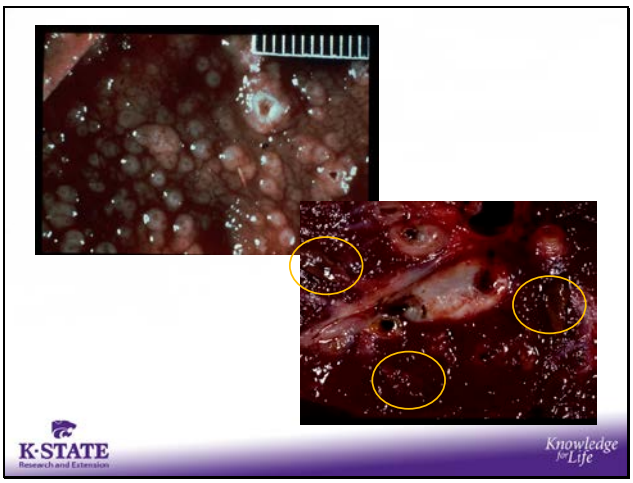
Knowledge for Life

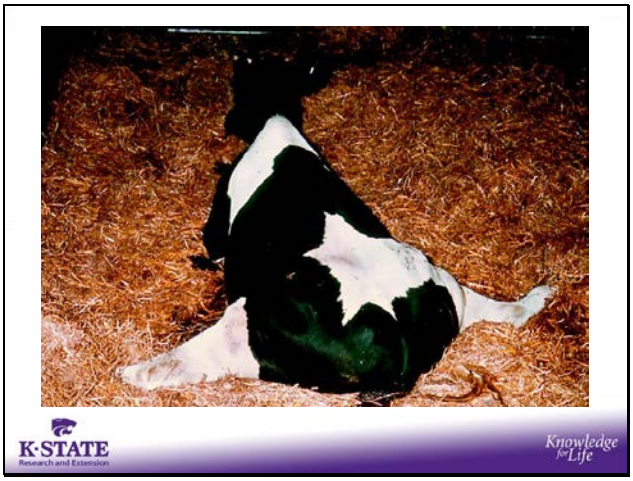
K-STATE Research and Extension

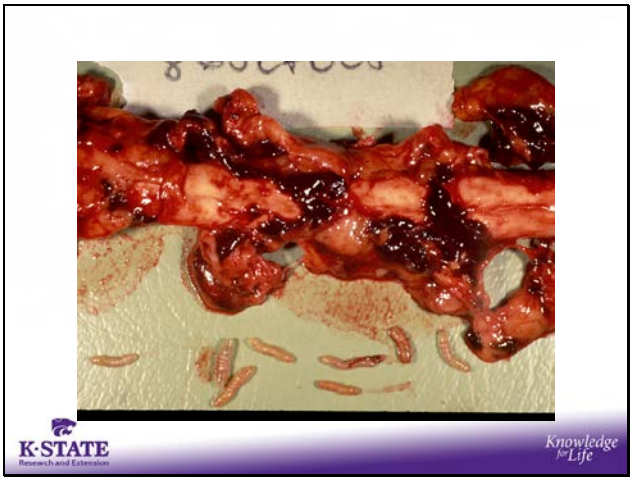
Knowledge for Life

K-STATE Research and Extension

Knowledge for Life


K-STATE
Research and Extension
Knowledge for Life


K-STATE
Research and Extension
Knowledge for Life


K-STATE
Research and Extension
Knowledge for Life

K-STATE Research and Extension

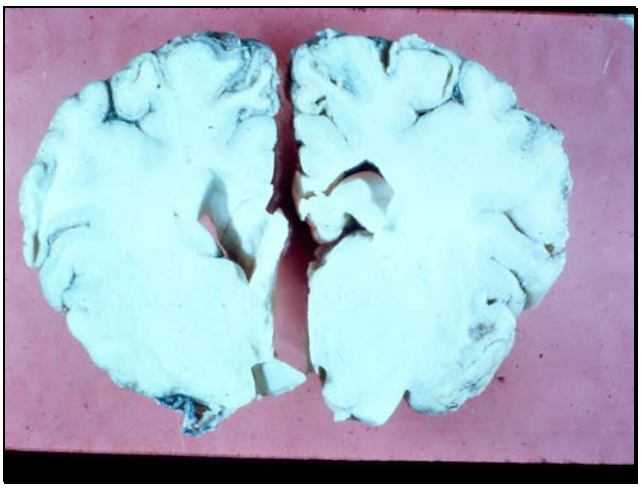
Knowledge for Life

K-STATE Research and Extension

Knowledge for Life

K-STATE Research and Extension

Knowledge for Life




K·STATE
Research and Extension


K·STATE
Research and Extension
Knowledge for Life

Necropsy

- Gross lesions
  - Present?
  - Absent?
- Samples for lab analysis
  - Histopath
  - Culture for bacteria or viruses
  - Toxicology

Summary

- A dead animal may give clues to:
  - What caused it's death
  - What may be poised to cause additional production or death losses in your herd
- A dead animal potentially has value to you!
- Don't wait until the 10th animal has died to get a necropsy done!

Questions ?

K-STATE Research and Extension

Knowledge for Life

Notes – Notes -- Notes

Be sure to visit the BeefStockerUSA website at:

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”