

Tennessee



Master Beef Producer



UT | Extension

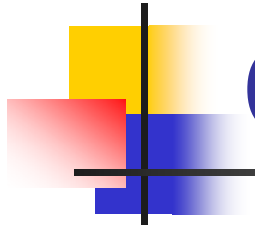
Tennessee Beef Cattle Improvement Initiative



Management for Beef Operations

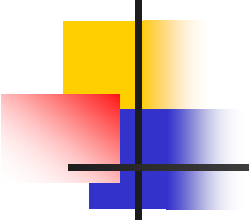


Kevin W. Ferguson
Extension Area Specialist
Farm Management



Objectives

- ✓ Recognize the importance of collecting, organizing and utilizing records.
- ✓ Gain an understanding of the methods available to maintain / evaluate records.
- ✓ Gain the ability to calculate and utilize herd performance measures to evaluate efficiency of the beef operation.
- ✓ Enhance the ability to calculate accurate costs of production and evaluate opportunities to lower those costs.

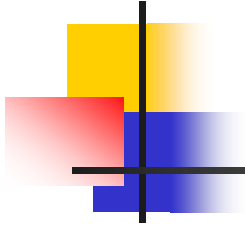


“I firmly believe that adhering to tradition is the greatest obstacle to production agriculture.”

James A. Bennett
Sunbelt Farmer of the Year
for Virginia

Owens Three Breeds of Cattle,
900 head, Farms 2500 acres





“No amount of ‘good’ genetics, wonder drugs, or fu-fu dust will overcome sorry management.”

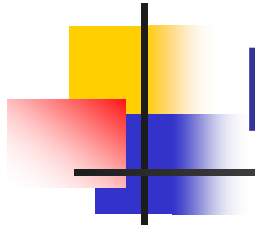
Dr. Dan Brown, University of Georgia

To be successful, it is necessary to collect, organize and utilize information on the beef herd.



Types of Records

- Production or Performance Data
 - Evaluate herd efficiency
 - Evaluate individuals within the herd
 - Assist in establishing goals
- Financial or Cost and Return Data
 - Evaluate the profitability of the cow herd
 - Aid in making informed decisions



Master Beef Producers

- ✓ Am I competitive?
- ✓ What changes need to be made in my operation?
- ✓ Where do we want the operation to be and how can we best get there?
- ✓ Are we going in the right direction?

Production Records

Individual Animal Identification

- Ear Tags
- Freeze Branding
- Hot Branding
- Permanent Ink Tattoo in the Ear
- Electronic Identification (EID)



Ear Tags

- Available in a variety of sizes and colors
 - Identify sex, calf crop, sire, etc.
- Preprinted (numbers, letters, logo)
- Barcodes
- Blank Tags
 - Sire, Birthdate, etc.



Application Site for Eartags



Cut the strings on round bales!



Branding



- Freeze

- Works best on dark pigmented cattle
- Special equipment and supplies needed

- Hot

- More common in Western states
- Industry is moving toward other methods

Permanent Ink Tattoo

- May be combined with other methods of identification
- Animal must be restrained to read or confirm ID
- Green tattoo ink is recommended
- Takes time to apply tattoos correctly





Electronic Identification (EID)

- Combines animal identification with data storage methods
- Provides a tracking system for calves from birth to carcass
- Records can be transferred from one owner to another
- Should be used with another form of visual ID



Powered by



101.0082

United

Producers, Inc.

MBA Enrollment CattleCard™

Number of Animals: 10

<u>Animal TXP</u>	<u>Bar Code</u>	<u>Sequence</u>	<u>Visual ID</u>	<u>DamID</u>	<u>SireID</u>	<u>Sex</u>	<u>CE</u>	<u>Birthdate</u>	<u>Color</u>	<u>WT-Wean</u>
982000002411357		1	9	59	GROUP G	STEER	1	31-Mar-99	BLACK	452
982000002411560		2								
982000002411637		3								
982000002418411		4								
982000002418426		5								
982000002418448		6								
982000002418474		7								
982000002418520		8								
982000002418555		9								
982000002418562		10								

Stacey Turner

Oct. 4 and 5, 2007 Allaince Marketing Consignment

Number Cosigned: Steers 27 Heifers 23

Birth date of oldest calf:mm/dd/yyyy 12/28/2006

<u>RFID</u>	<u>VID</u>	<u>Farm Tag</u>	<u>Sex</u>
982000095625957	5125	67	S
982000095830648	5126	17	S
982000100461767	5127	13	S
982000095626026	5128	30	S
982000095777305	5129	16	S
982000095598629	5130	28	S
982000100465192	5131	48	S
982000095830887	5132	47	S
982000095778620	5133	31	S
982000095854662	5134	27	S
982000095762021	5135	35	S
982000095476705	5136	49	S
982000095831401	5137	50	S
982000095476518	5138	42	S

EID and Age & Source Verification

- Method to verify age of animal
 - Usually not individual birthdates
 - Focus on the oldest animal in a group
- Method to verify source of animal
 - Identifies farm of origin
- Not officially a part of NAIS
 - National Animal Identification System
 - However, EID is a key part of verification.





USDA Approved Age and Source Verification Programs

- Quality System Assessment (QSA)
- Process Verified Program (PVP)
- Necessary to meet the requirements for the Japanese export market.
- These programs require 3rd party verification or audit once a year for a minimum of 10% of participating producers.



PVP Program Basics

- Auditable / accountable system
- Suppliers (cattle producers) must be pre-approved
- All suppliers must be trained regarding recordkeeping requirements
- All suppliers subject to audit
- Cattle are uniquely identified either individually or as a group
- Traceable to farm of origin with birth date records



When PVP Cattle are Sold . . .

- Data is transferred electronically to the organization that issues the PVP certificate.
- Certificate is issued verifying age and source of the cattle and sent to new owner.
 - Includes EID numbers, birthdates, and verification of source (names are not included).
- When cattle are harvested, the beef can be sold as age and source verified.



AgInfoLink is a USDA PROCESS
Verified Company



AgInfoLink Source and Age Verification Report

Report Date: 8/20/2007

TOTAL HEAD COUNT = 70

The animals listed below are enrolled in the AgInfoLink's USDA Approved Process Verified Program. If you have questions, contact AgInfoLink at 800.287.8787 or pvp@aginfolink.com.

EID	Birth Date	Source Verified*	EID	Birth Date	Source Verified*
949000010012322	11/4/2006	Yes	949000010012324	11/4/2006	Yes
949000010012325	11/4/2006	Yes	949000010012461	9/4/2006	Yes
949000010012469	9/4/2006	Yes	949000010012472	9/4/2006	Yes
949000010012473	9/4/2006	Yes	949000010012477	9/4/2006	Yes
949000010012481	9/6/2006	Yes	949000010012482	9/6/2006	Yes
949000010012483	9/6/2006	Yes	949000010012484	9/6/2006	Yes
949000010012485	9/6/2006	Yes	949000010012561	9/19/2006	Yes
949000010012568	9/19/2006	Yes	949000010012577	9/19/2006	Yes
949000010012582	9/19/2006	Yes	949000010012592	9/19/2006	Yes
949000010012601	9/1/2006	Yes	949000010012602	9/1/2006	Yes
949000010012603	9/1/2006	Yes	949000010012604	9/1/2006	Yes
949000010012605	9/1/2006	Yes	949000010012930	10/15/2006	Yes
949000010012932	10/15/2006	Yes	949000010012933	10/15/2006	Yes
949000010012938	10/15/2006	Yes	949000010012940	10/15/2006	Yes
982000078411473	9/19/2006	Yes	982000078411722	9/19/2006	Yes
982000078586555	9/23/2006	Yes	982000078586639	9/4/2006	Yes

**Source Verified can be validated by contacting AgInfoLink*



Tennessee's PVP Program

- Marketing Agencies, UT Extension, TDA, TN Livestock Network, Southeastern Livestock Network, AgInfoLink
- Typically utilized for Video & Graded Sales
 - Special Sales for health/vaccination programs, genetics, and management (weaning)
- The PVP program adds integrity and credibility to these sales.
- Producers can capture added value by marketing cattle that are verified.

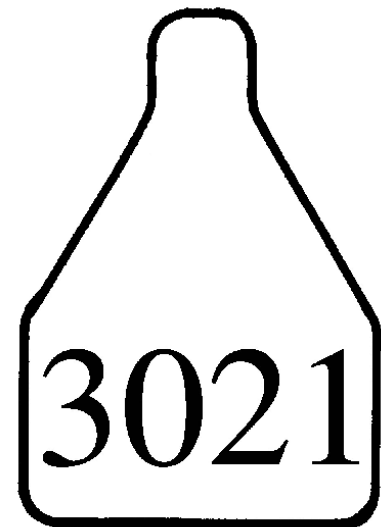


Unique Identification System

To accurately organize and evaluate herd performance records, a *unique ID system* should be used to identify each animal in the herd.

Sequential numbering system that includes a designation for year of birth.

Other Examples 03021, N021, 21N





International Year Codes

(for Cattle Identification Systems)

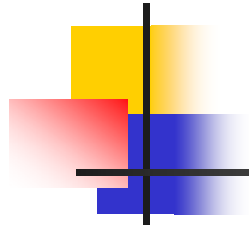
Letter	Year	Letter	Year
T	2007	X	2010
U	2008	Y	2011
W	2009	Z	2012

Letters *I*, *O*, *Q* and *V* are not used to avoid the potential confusion with the numbers 1, 0, and U.

Performance Measures

It is very difficult to calculate herd performance if the bull has access to the cow herd year round and calving records are not maintained on each cow in the herd.





Herd Performance Measures

- ✓ Evaluate the efficiency of the cow herd.
- ✓ Track progress of the herd over time.
- ✓ Compare the herd to industry standards.
- ✓ Indicate potential problems.
- ✓ Assist in establishing goals.

Number of Exposed Females

- Number of mature cows and replacements in the herd at the **beginning** of the breeding season.
- Each female has the **potential** to conceive, raise and wean a calf.





Adjusted Exposed Females

- Adjusted Lower
 - Females sold or transferred during the breeding season.
 - Pregnant females or cow/calf pairs sold following the breeding season.
- Adjusted Higher
 - Exposed or pregnant females and cow/calf pairs purchased following the breeding season.

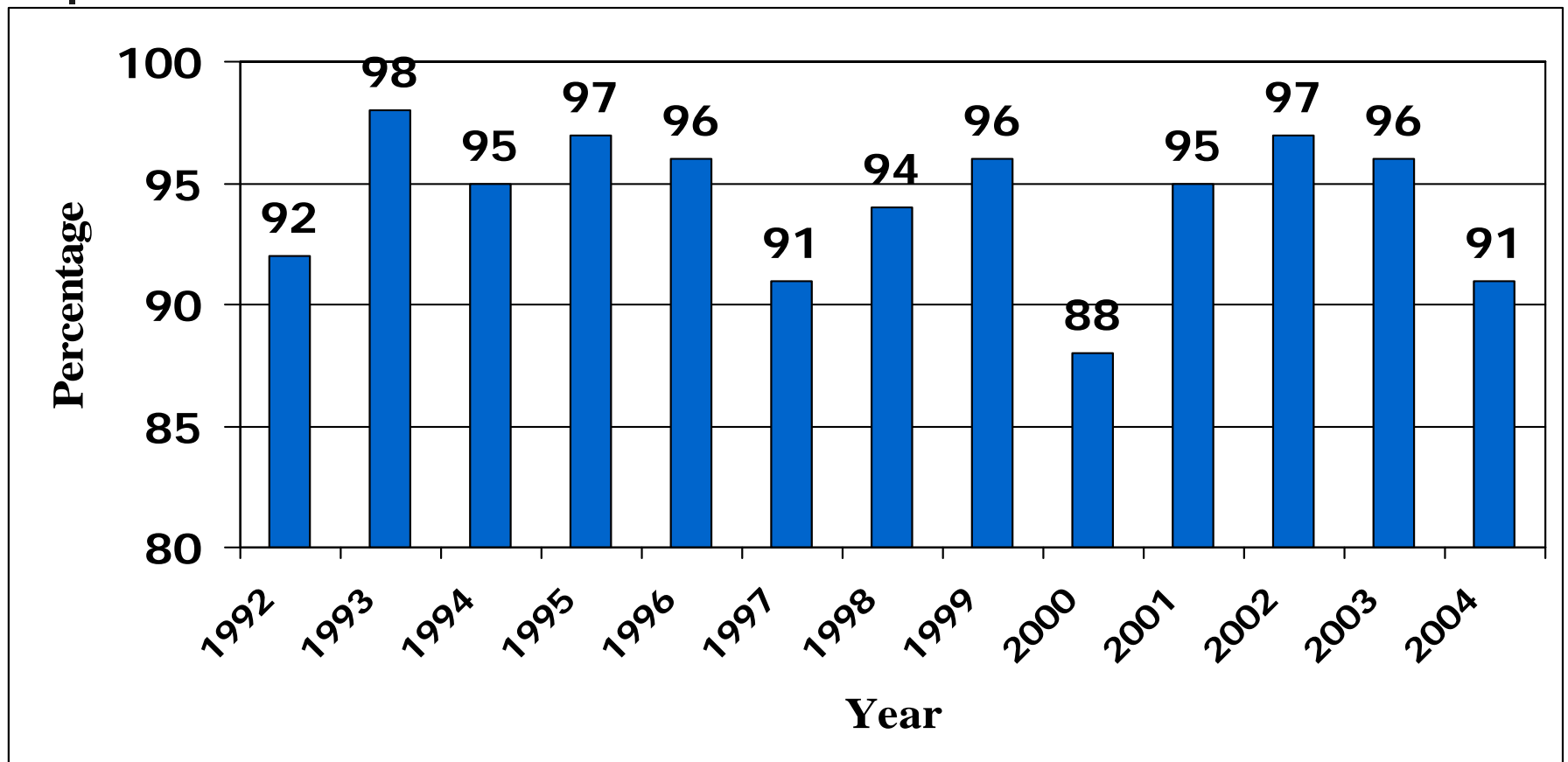
Pregnancy Percentage



- Measure of success of the breeding season.
- $$\frac{\text{Number Females Confirmed Pregnant}}{\text{Adjusted Exposed Females}} \times 100$$
- Determined 45-90 days following the end of the breeding season.
- Goal: 95% or greater

Pregnancy Percentage

Donald Jernigan IRM Farm



1992 = Baseline Data

Calving Percentage

- Another measure of success of the breeding season.
- $$\frac{\text{Number of Calves Born}}{\text{Adjusted Exposed Females}} \times 100$$
- Within a range slightly lower or higher than the pregnancy percentage.



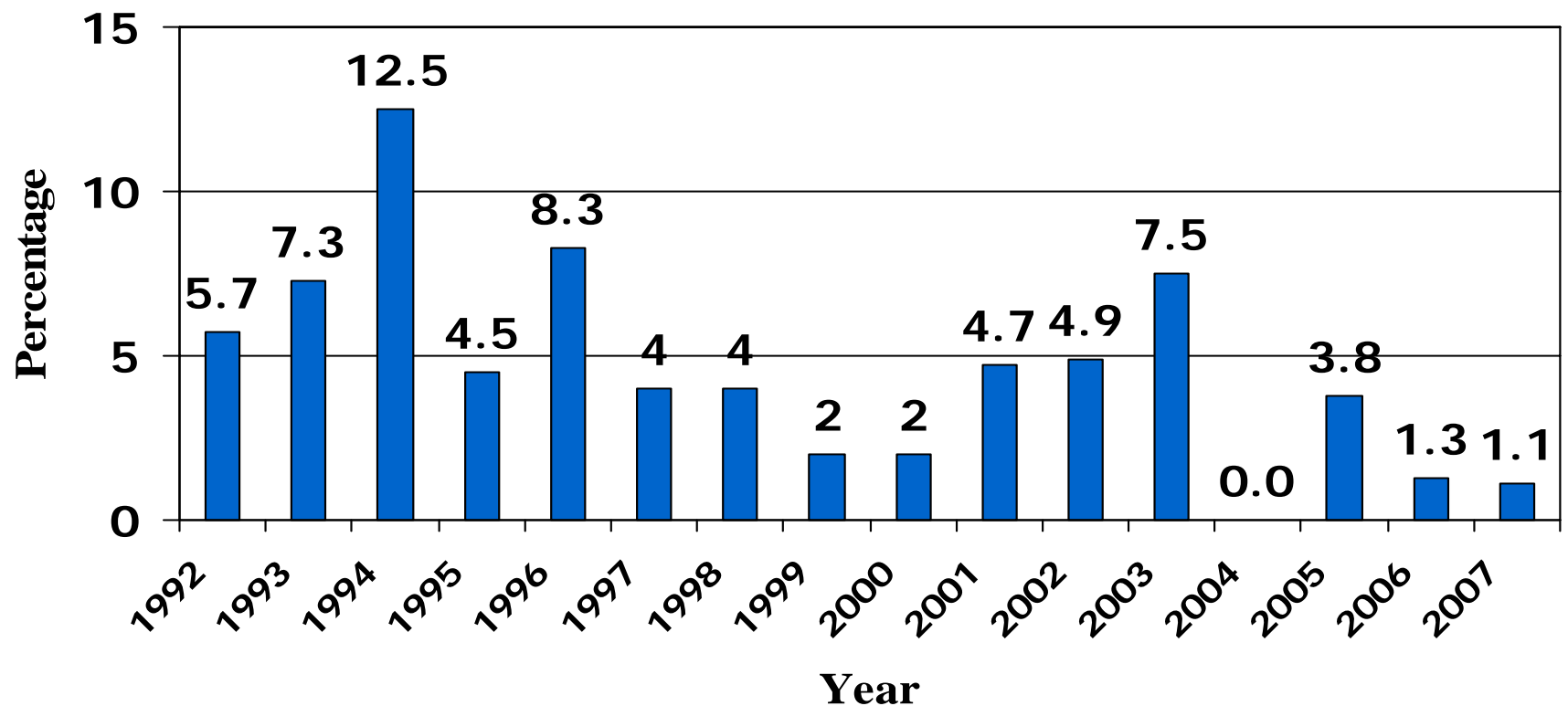


Calf Death Loss Percentage

- Indicator of the success of the calving season and growing phase.
- $$\frac{\text{Number of Calf Deaths}}{\text{Number of Calves Born}} \times 100$$
- Affected by calving difficulty, calving season, environment, herd health, condition of cows.
- Goal: 4% or less

Calf Death Loss Percentage

Donald Jernigan IRM Farm



1992 = Baseline Data



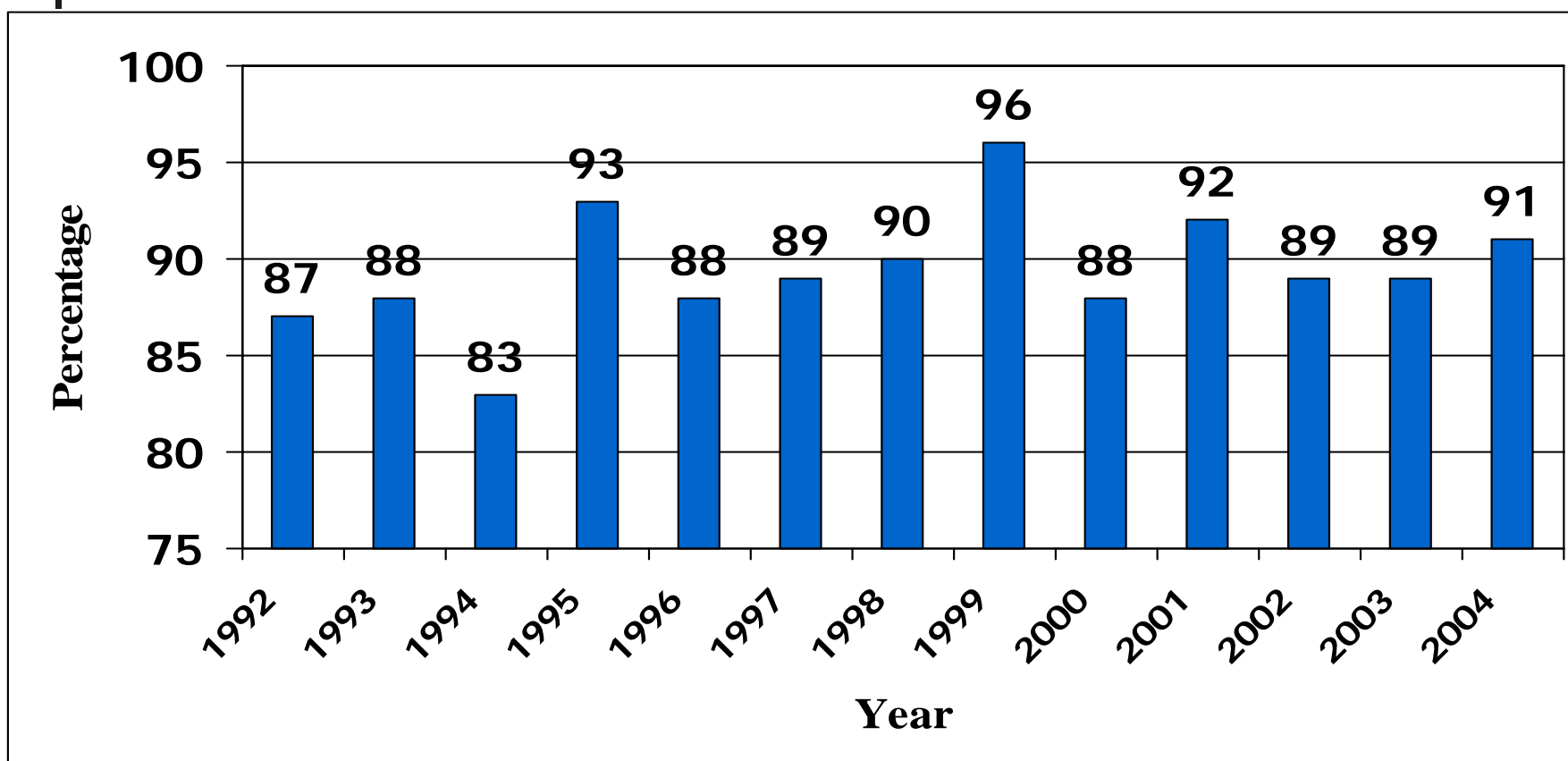
Weaning Percentage

(Calf Crop Percentage)

- Measure of the overall reproductive efficiency of the cow herd.
- $$\frac{\text{Number of Calves Weaned}}{\text{Adjusted Exposed Females}} \times 100$$
- Goal: 90% or greater
- Determine the optimal level of weaning percentage for the operation.

Weaning Percentage

Donald Jernigan IRM Farm



1992 = Baseline Data



Average Weaning Weight

- An indication of the productive ability of the sire(s) and the cow herd.
- $$\frac{\text{Total Pounds Weaned}}{\text{Number of Calves Weaned}}$$
- Indicate improvement in performance
- Reflect changes in management and/or environmental conditions
- Comparable for calf crops of **similar ages**
- Probably **not the best** indicator of efficiency
 - Miller, et al. (2001) – calf weight sold accounted for only 5 percent of profit variation

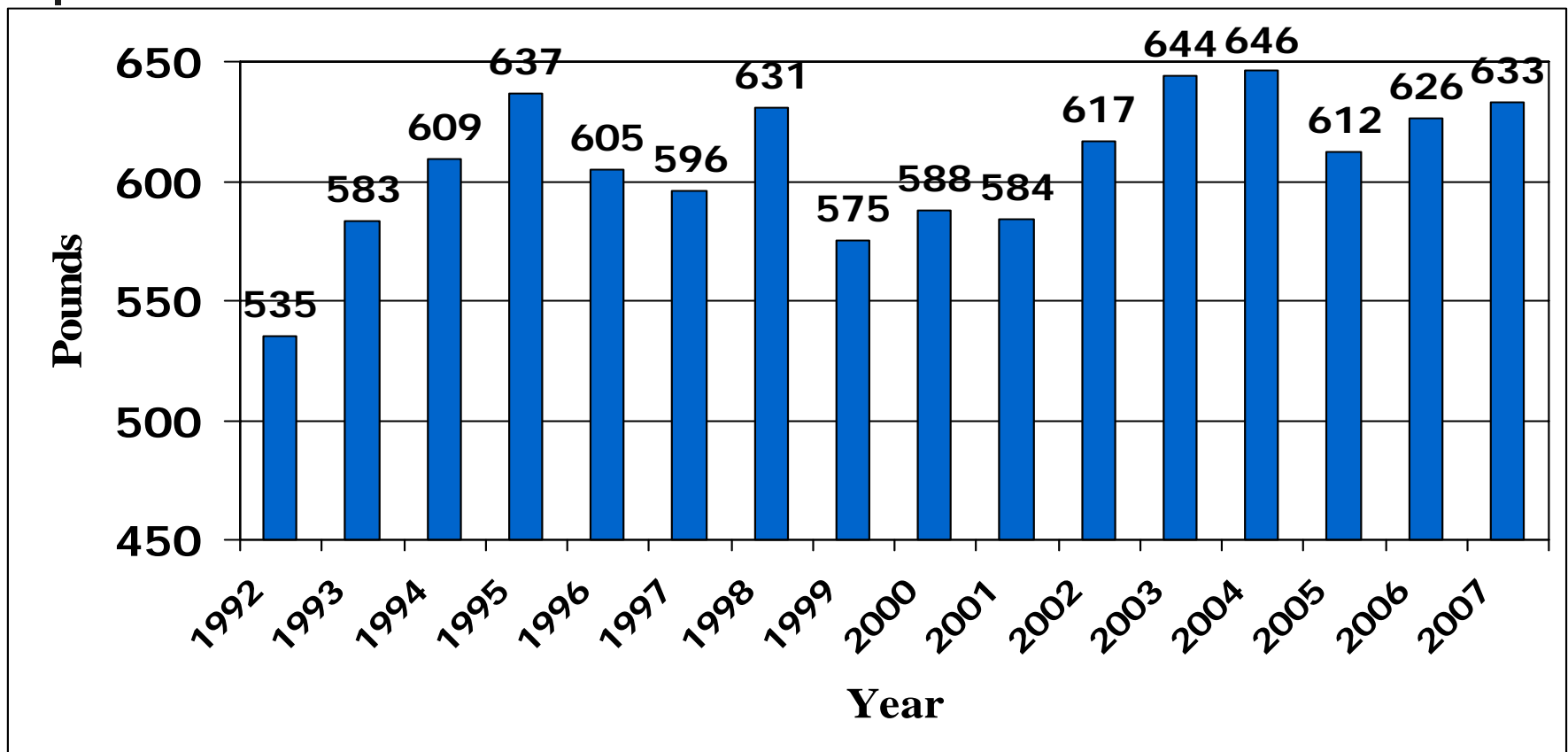


Measuring Performance of a Commercial Beef Cattle Herd

■ Two 30 cow herds	A	B
■ Weaning Weights	550	475
■ Weaning Percentage	74	90
■ No. Calves Weaned	22	27
■ Total Lbs. Weaned	12100	12825
■ Lbs. Weaned / Cow Exposed	403	428

Average Calf Weaning Weights

Donald Jernigan IRM Farm



1992 = Baseline Data



Percentage of Cow Bodyweight Weaned

- Measure efficiency of the cow
- $\frac{\text{Calf Weaning Weight}}{\text{Cow Weight @ Weaning}} \times 100$
- Goal wean 50% of Bodyweight
 - 1000 lb cow = 500 lb calf
 - 1200 lb cow = 600 lb calf



Pounds Weaned per Exposed Female

- Measure of overall performance and efficiency
- Combines reproductive performance and productive ability
- $\frac{\text{Total Pounds Weaned}}{\text{Adjusted Exposed Females}}$
- Weaning Percentage X Average Weaning Weight

Pounds Weaned per Exposed Female

- Track progress of the herd over time
- Evaluate the affects of Management Decisions
- Compare herds within an area, state, region, or nation





Effect of Weaning Percentage and Average Weaning Weight on Pounds Weaned per Exposed Female

- - - - - Average Weaning Weight (lbs.) - - - - -

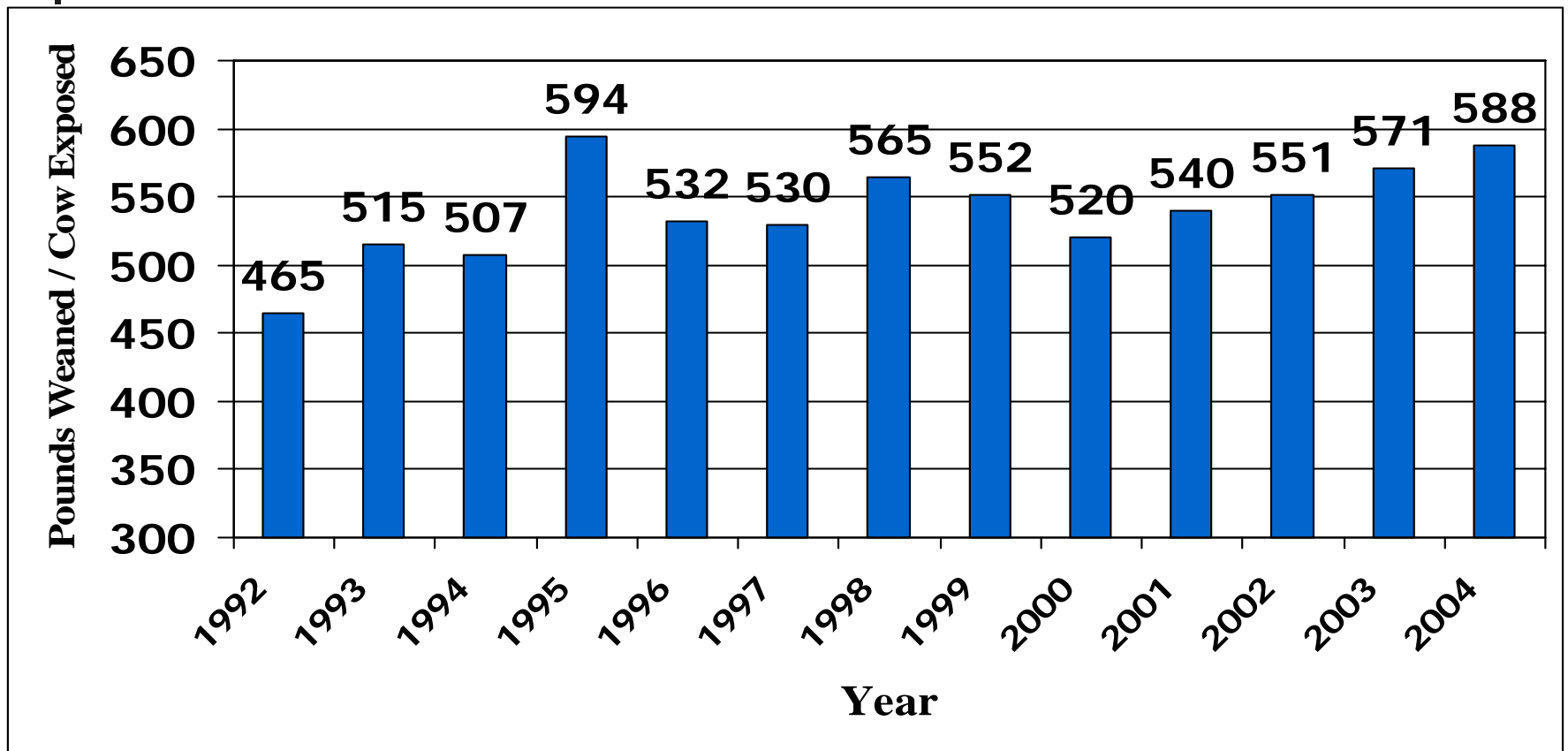
600 550 500 450 400 350

Wean. % - - - - - Pounds Weaned per Exposed Female - - -

100%	600	550	500	450	400	350
90%	540	495	450	405	360	315
80%	480	440	400	360	320	280
70%	420	385	350	315	280	245

Pounds Weaned Per Cow Exposed

Donald Jernigan IRM Farm



1992 = Baseline Data

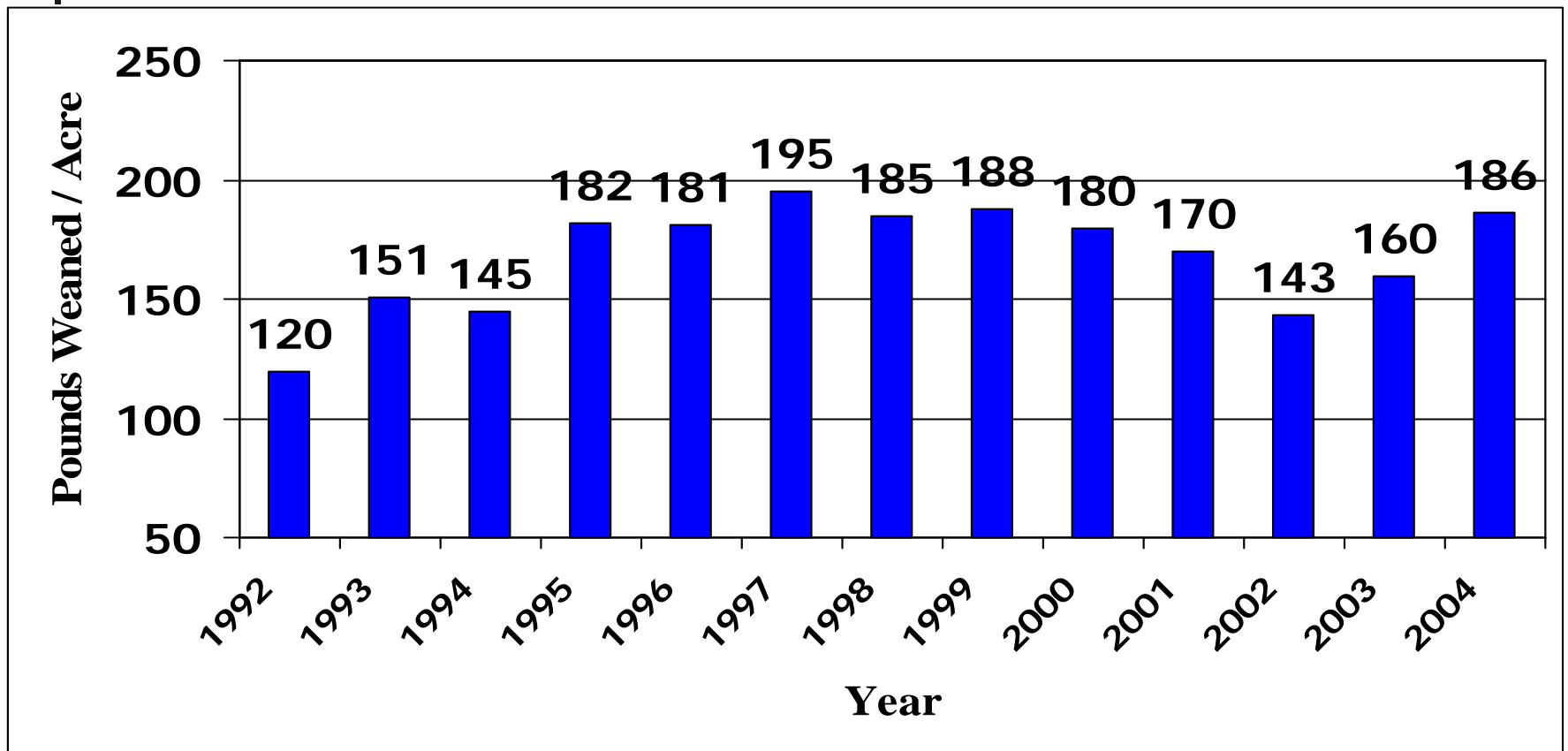


Pounds Weaned per Forage Acre Utilized

- Measure of the productivity of the forage base
- $$\frac{\text{Total Pounds Weaned}}{\text{Forage Acres Utilized by Cow Herd}}$$
- Evaluate the results of changes and improvements in forage management
- Can vary widely among operations

Pounds Weaned Per Acre of Forage

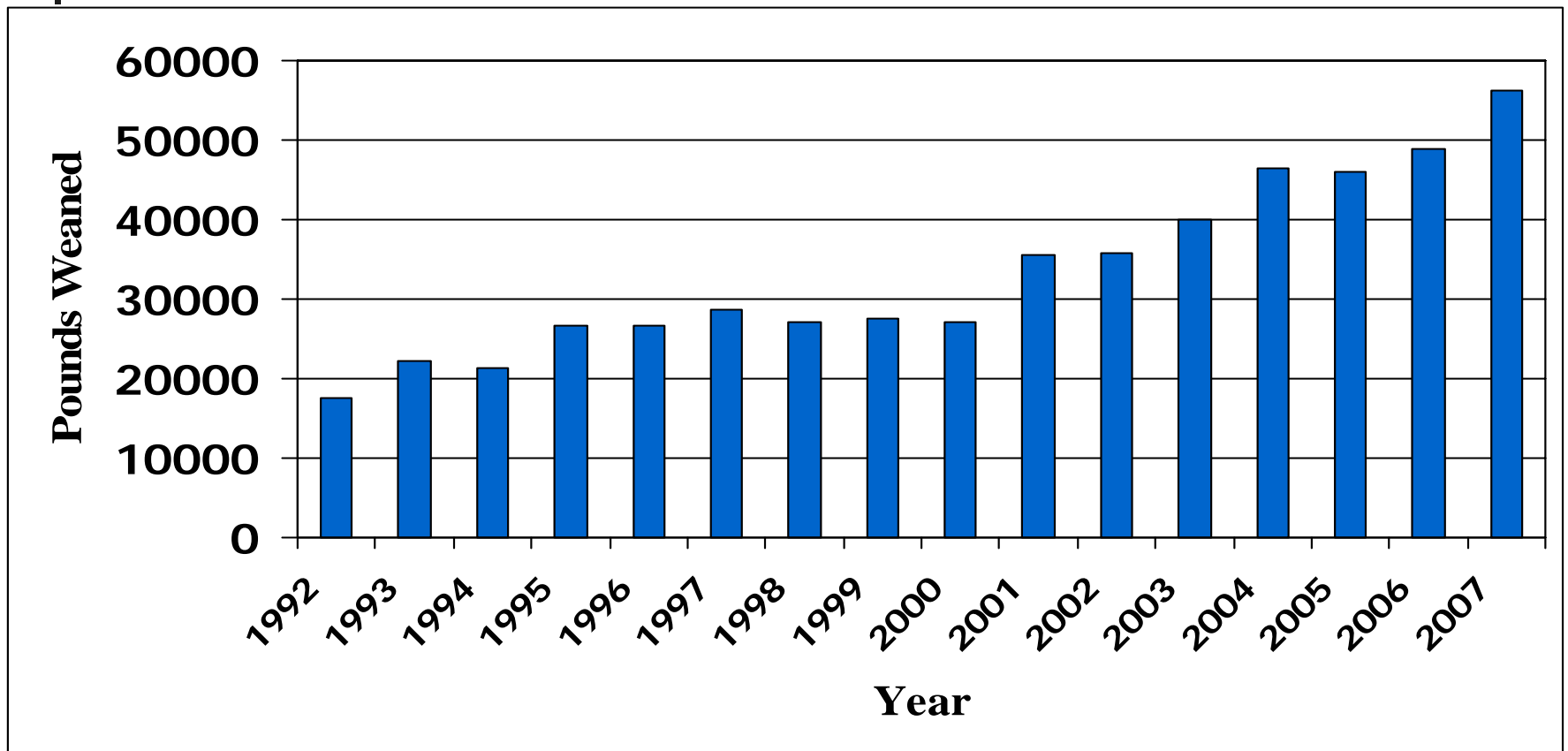
Donald Jernigan IRM Farm



1992 = Baseline Data

Annual Beef Production

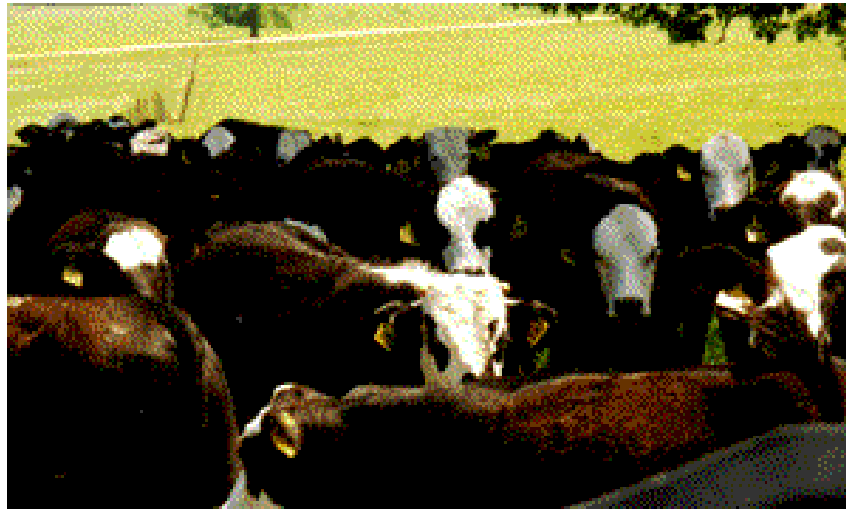
Donald Jernigan IRM Farm



1992 = Baseline Data

Performance Measures for Stocker Operations

- Death Loss Percentage (Mortality Rate)
- Morbidity Rate (Sickness)
- Average Daily Gain





Death Loss Percentage (Mortality Rate)

- Measure of the number of deaths associated with a group of stockers.
- $$\frac{\text{Number of Dead Stockers}}{\text{Beginning Number of Stockers}} \times 100$$
- Can have a drastic impact on profit.
- Acceptable Goals
 - 1% for calves raised on same farm
 - 4% or less for purchased cattle



Morbidity Rate (Sickness)

- Measure of health problems associated with a group of stockers.
- $\frac{\text{Number of Individuals Treated}}{\text{Beginning Number of Stockers}} \times 100$
- High rates increase costs/decrease performance
- Goals
 - 10% or less - - "source verified"
 - 20% or less - - "put-together-cattle"
- Seasonal conditions may increase rate to 30-35% or higher.



Average Daily Gain (ADG)

- An indicator of performance.
- $$\frac{\text{Ending Weight} - \text{Beginning Weight}}{\text{Number of Days in Stocker Program}}$$
- Rates vary depending on genetics, season, environment, feed & forage resources, management practices, herd health.
- Acceptable goals may vary.
- Goals should be based on target end weights.

Health Records



- Should meet the guidelines of FDA, USDA and EPA
- Critical step in avoiding drug residues
- **May serve as protection** in the event of regulatory investigation
- Provide a medical history of herd



Health Records

- Should be kept in accordance with Tennessee Beef Quality Assurance Program
- Maintained for **three years**
- Include annual and preventative vaccinations, as well as treatment for sickness or injury



Health Records

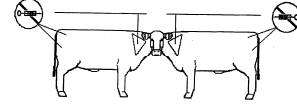
- Should include:
 - Animal Identification(s)
 - Drug used (lot and serial numbers)
 - Withdrawal time
 - Dosage
 - Route of Administration (ROA)
 - Individual who administered the drug/vaccine

TREATMENT RECORD

Date _____ Cattle Group _____

Animal ID _____ Date Sick _____

Date returned to group _____ Date Sold _____



All records should be maintained for at least two years.

Date	Temp	Diagnosis	Treatment /Product	Site*	ROA**	Withdrawal	Lot #	Exp Date	Company

* = Location from map **=Route of Administration

Producer's Name: _____

Address: _____

City/State/Zip: _____ Phone: _____

Comments: _____



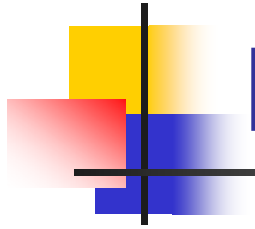
Methods for Maintaining Performance & Health Records

- Systems range from “pen and paper” to computer software programs
- Should be useful, practical, affordable
 - Preprinted forms / record books
 - IRM Red Books
 - Computer Programs, *THE Beef Cattle fIRM*
 - EID



Financial Records

- Shoe box system, computer programs, record keeping services
- Preparation of tax forms
 - Limited amount of information for management decisions and planning
- Determining cost of production, estimating breakeven prices, develop marketing plans, measure the profitability of enterprises



Financial Records

- First, decide the information needed from a record keeping system.
- The more information expected, the more details needed.
- Keep only those detailed records that will be utilized.

Financial Records

- Income Statements
 - Profit or Loss Statements
 - Measure the profitability of the operation
 - Requires information on income, expenses, depreciation and **changes in inventory**





Cash Flow Statements

- Tracks all farm and nonfarm income and expenses, debt payments, and loan receipts (monthly or annual basis)
- Evaluate debt repayment ability and planning credit
- A **controlled breeding season** may require cash flow planning



Financial Records

- Balance Sheets (Net Worth Statements)
 - All Assets minus All Debts
 - Typically – Beginning / End of Year
 - Track / Measure financial progress
- Enterprise Budgets
 - Income / expenses identified by enterprise
 - Requires detailed production records
 - Identify strengths and weaknesses
 - Difficult to assign some expenses to enterprise



University of Tennessee's MANAGE Program

- Assist Tennessee Farm Families
 - Establish record keeping systems
 - Evaluate current financial situation
 - Evaluate opportunities
- Financial information remains confidential
- 800-345-0561





Cost Management for the Cow Herd

- Why do you raise beef cattle?
 - Utilize roughage and marginal land
 - Low labor requirements
 - Intensive management not required
 - Complements off farm employment
 - Doesn't require highly specialized buildings and equipment
 - Enjoy raising beef cattle
 - "...to make money!"

Major Factors that Influence Profitability of the Cow Herd

- Annual costs of maintaining a cow.
- Calf crop or weaning percentage.
- Weaning weights.
- Price received for calves and cull cows.





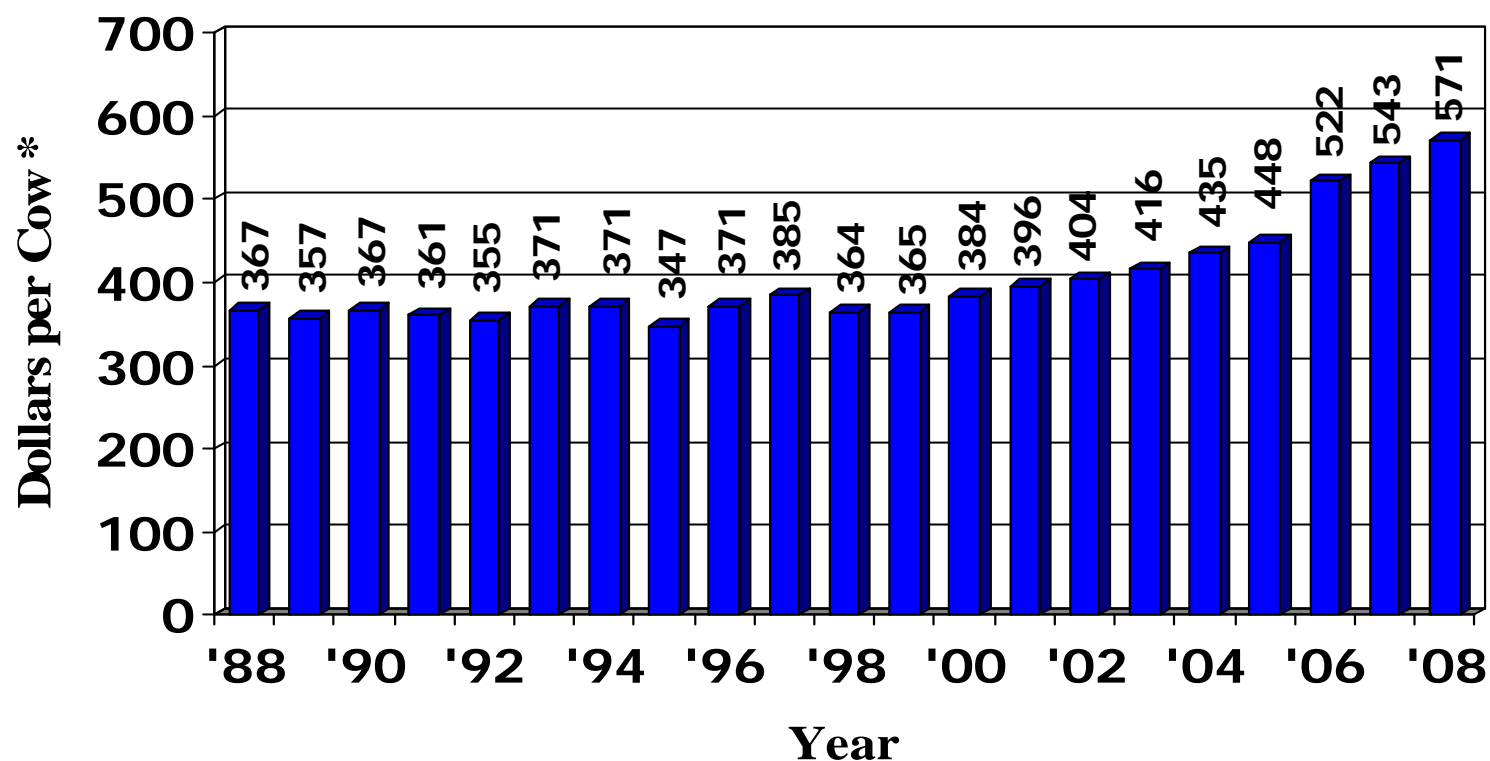
Southwest Cow/Calf Summary

502 herds (1991-2005)

	Weaning Percentage	Average Weaning Weight (lbs.)	Lbs. Per Cow Exposed	Cost of Production Per Cow*	Net Income Per Cow*
Top 25%	85	539	458	\$343	\$141
2 nd 25%	83	526	433	\$378	\$ 32
3 rd 25%	80	521	423	\$428	-\$ 44
Low 25%	80	502	403	\$595	-\$250

* Full financial pretax cost including depreciation. Source: Bevers, 2006. Updated June 2008

U.S. Average Cow/Calf Cash Production Expenses



* Includes **interest costs and a pasture rental charge.**

Source: Livestock Marketing Information Center – Updated Jan. 2009



Focus on Feed Costs



- Feed - - **largest variable expense** in cow/calf operation
- Records separated for purchased feed, minerals, hay, pasture, etc.
- Per cow or per stocker
- Control feed costs, but still meet nutrient requirements
- Reproductive performance and efficiency should not be impaired



Enterprise Budgeting

- Based on accurate production and financial records.
- Each operation is different
 - Genetics, inputs, resources
 - Financial and production goals may not be the same
- *Tennessee Beef Budgets – A Systems Approach to Beef Production*



Partial Budgeting

- Assist in estimating a **potential change in net income**
- Examples
 - Stockpiling fescue in the Fall
 - Purchasing a superior sire
 - Purchasing hay
 - Expanding the cow herd



Partial Budgeting Outline

Added Revenue		_____	
Reduced Expenses	+	_____	
Total Credits			_____
Added Expenses		_____	
Reduced Revenue	+	_____	
Total Debits			_____
Difference (change in net income)			_____

Source: Castle, et al.



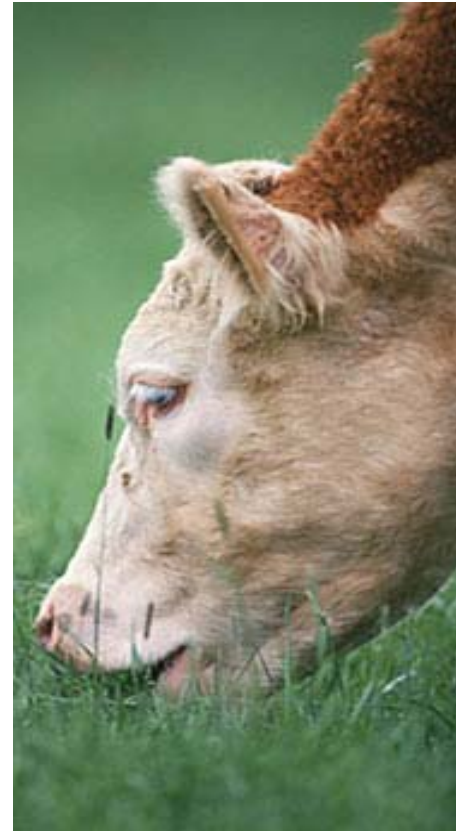
Stockpile Tall Fescue

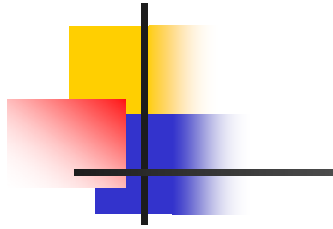
50 Cow herd - - 25 acres

Description	Quantity	Unit	Price	Total
Added Revenue				\$ 0.00
Reduced Expenses	17.12	tons	\$75.00	\$1284.00
30 days hay for 50 head (22.83 lbs./head/day)				
Total Credits				\$1284.00
Added Expenses	25.00	acres	\$30.00	\$ 750.00
Nitrogen (60 lbs/acre @ \$0.50/lb.)				
Reduced Revenue				\$ 0.00
Total Debits				\$ 750.00
Change in Net Income				+ \$534.00

Factors to Consider to Lower Production Costs

- Purchased Feed
- Raised Feed
- Grazing
- Cattle
- Indirect
- Interest





The Master Beef Producer Program is being partially funded by a grant from the Tennessee Department of Agriculture's Development Fund. Proceeds from this fund are derived solely from the sale of the Tennessee "Ag Tag" specialty license plate.