Preconditioning Calves

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GUDMUNDSEN SANDHILLS LABORATORY

Preconditioning:

Management steps executed prior to, during, and after weaning to insure optimum health and performance of calves.

Preconditioning Steps

Preweaning and Weaning

- Dam's precalving nutrition
- Mineral supplementation for dam and calf
- Deworming
- Vaccination
- Castration
- Dehorning

Postweaning

- Weaning management to minimize stress
- Training cattle to eat from a bunk
- Well balanced nutrition program to achieve positive weight gain
- Minimum 45 day weaning period

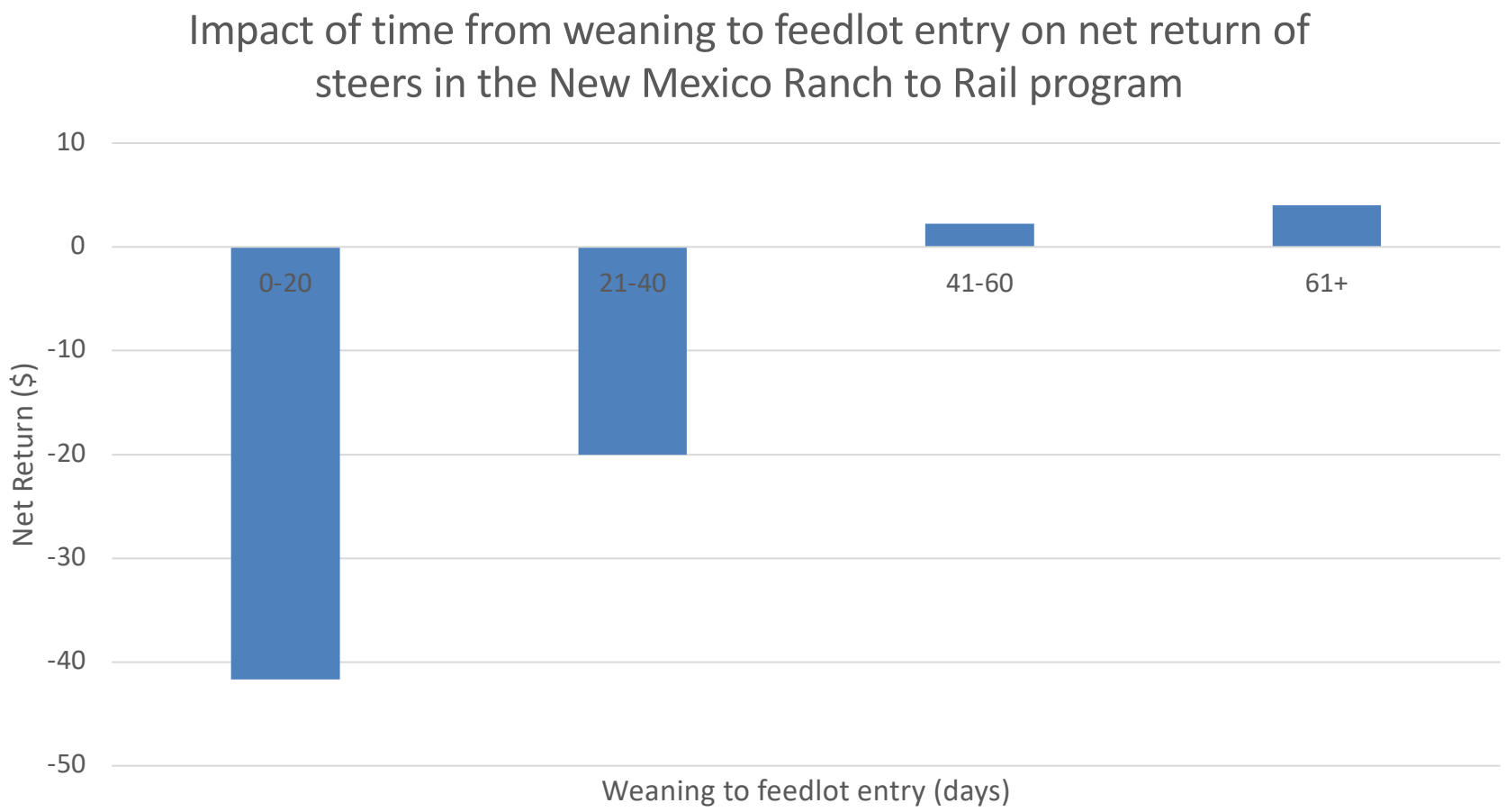
Practices to Reduce Stress at Weaning Time

- Provide familiar clean, environment
- Weaning method
  - Complete separation
  - Fence line weaning

Postweaning Nutritional Options

- One strategy doesn't fit all situations or ranches
- Feeding programs begin at weaning
- Nutritional programs can be 50 to 70% of preconditioning budgets

Preconditioning



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Preconditioning Method

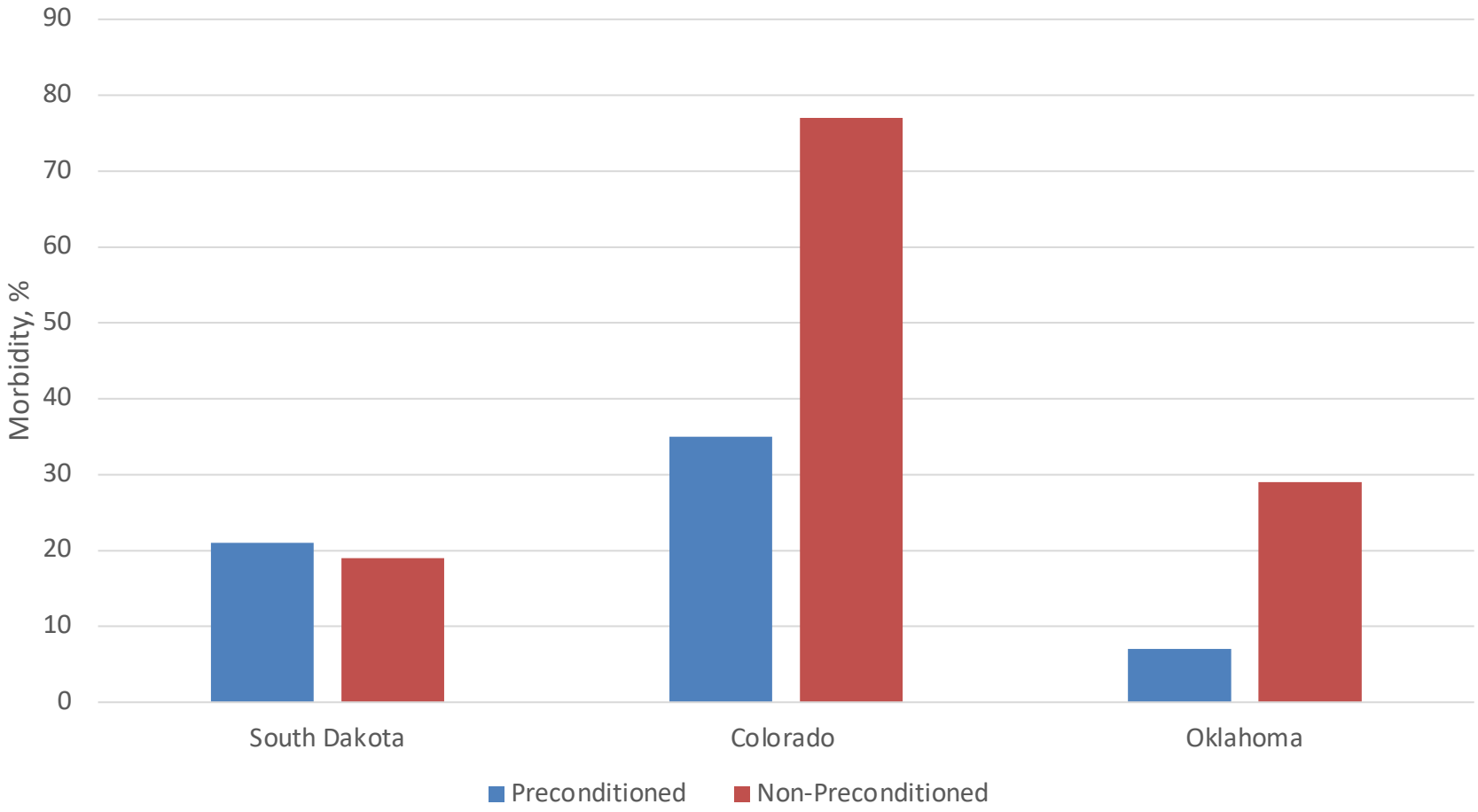
- **Pasture Preconditioning**
  + less environmental change
  + less dietary change
  + less dust or mud control is required
  – often less gain
  – often not trained to eat from a bunk
- **Drylot Preconditioning**
  + often more gain
  + trained to eat from a bunk
  – greater environmental change
  – more dust or mud control is needed

Impact of Precondition System on Performance

Item	Drylot Preconditioning	Pasture Preconditioning
Preconditioning Phase		
ADG, lb	1.42	1.10
Total Cost, $	66.77	14.01
Net Income, $	-28.87	15.72
Finishing Phase		
ADG, lb	2.93	2.98
Days on Feed	168	173
Treated for Sickness, %	47.6	34.3
Death Loss, %	7.6	0.0
Net Income, $	-98.33	4.68

Mathis et al., 2008

Impact of Preconditioning on Subsequent Feedlot Morbidity



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Receiving Health by Weaning Program

Item	Market	Ship	Wean 45	Wean Vac45	SEM
Morbidity, %	41.9	35.1	5.9	9.5	4.2
Treated once, %	31.9	22.2	5.0	7.7	3.8
Treated twice, %	4.0	9.2	0.9	1.8	2.2
Mortality, %	3.1	0	0	0	0.9

Step et al., 2008

Summary

- Prepares calves for challenges once they leave the ranch
- Largest impact will be on health
- Variable response on subsequent feedlot performance
- Economics
  - Marketing
  - Cost of preconditioning

Questions

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Minimizing Calf Health Risks at Weaning

Dr. Lindsay Waechter-Mead
Nebraska Extension Beef Systems Educator

#1 goal: Minimize Stress

- Low stress handling and weaning options
- Nutritional management
- Processing calves – castration, dehorning
- Parasite control – internal and external
- Environmental stress – dust, heat, mud
- Health Plans – vaccination and treatment plans

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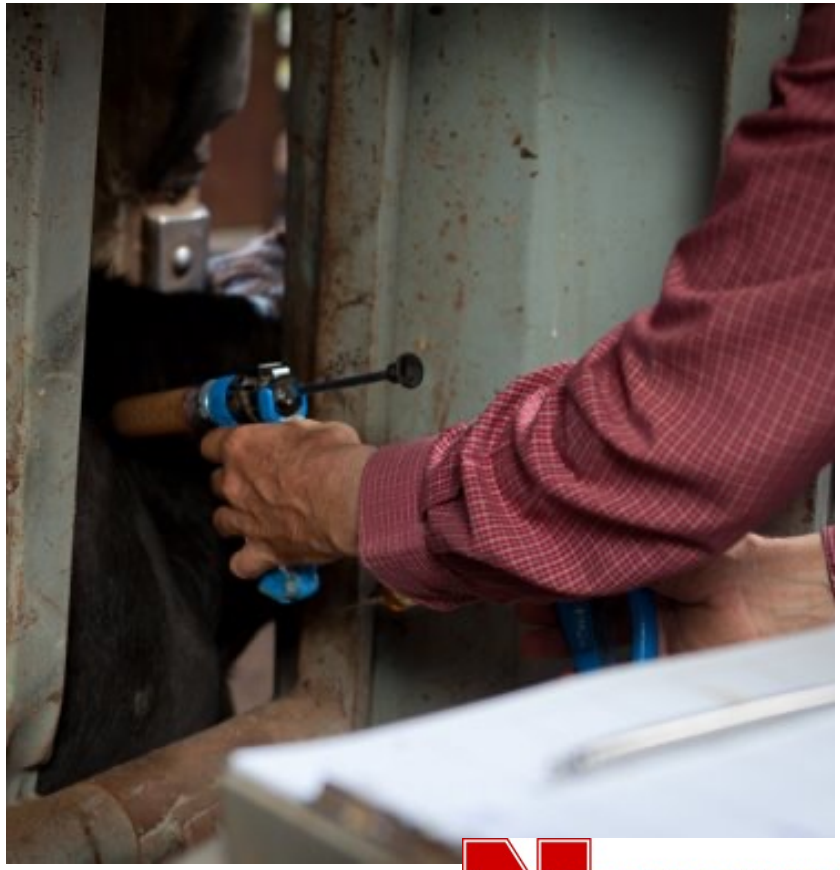
Principles of Vaccination

- Minimizes risk
- Should not be assumed to provide 100% protection
- Not all animals are protected equally
- Takes time to build immunity
  - Multiple doses needed
- Always follow vaccine withdrawal times and label directions



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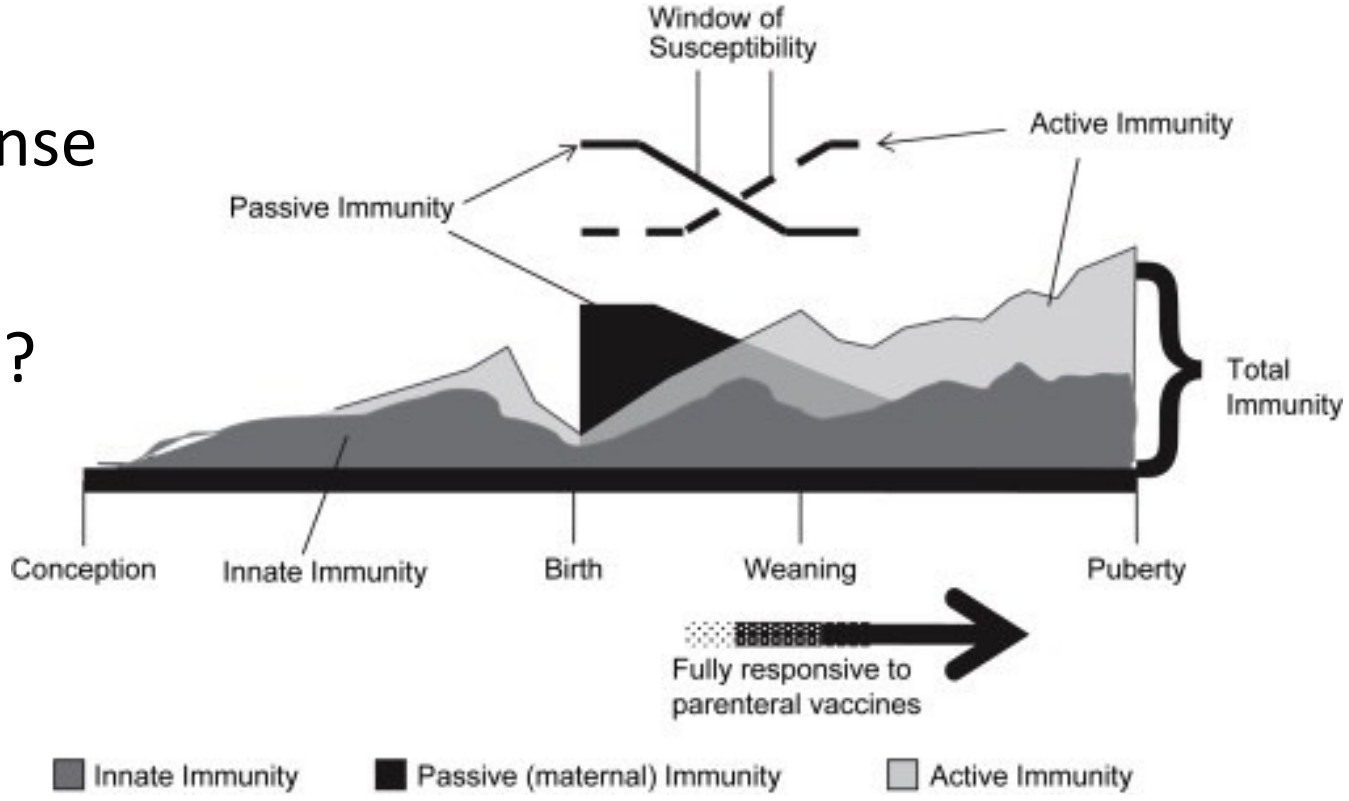
When and What?

- Low stress = ↓cortisol levels
- High cortisol =↓ immune response
- What are your goals?
- What are you trying to prevent?



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Preweaning Vaccine Protocols

Core Vaccines: (AABP Vaccination Guidelines, 2021)

Infectious Bovine Rhinotracheitis virus (**IBRV**)

Bovine Viral Diarrhea Virus (**BVDV-Type 1 & 2)**

Parainfluenza Virus (**PI3**)

Bovine Respiratory Syncytial Virus (**BRSV**)

Clostridial Vaccines “7-way”

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Preweaning Vaccine Protocols

"A survey of recommended practices made by veterinary practitioners to cow-calf operations in the United States and Canada." Fike, et al. 2017

Most common recommended vaccines preweaning:

- **IBR** (99%)
- **BRSV** (98%)
- **BVD – Types 1 and 2** (96%)
- **PI-3** (93%)
- **Clostridial** (88%)

Why precondition?

- Animal Welfare issue
- Maintain health
- Maximize feed efficiency
- Decrease treatment costs
- Reputation
- Premium pay

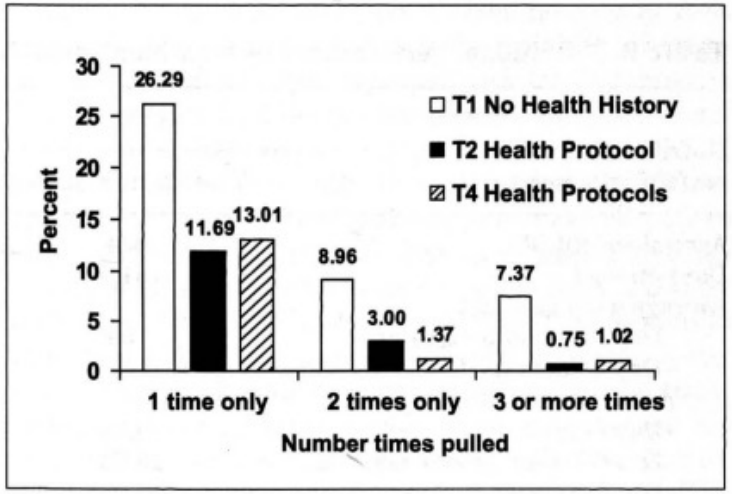

Figure 4. Percentage of pulls for respiratory disease conditions by treatment group during the period from arrival through harvest.

Seeger et al., 2008

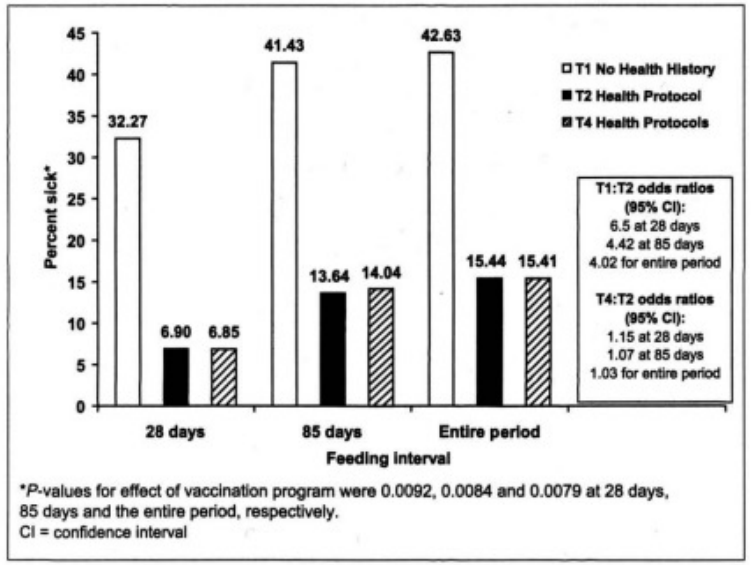

Figure 1. Morbidity (%) of steer calves at 28 and 85 days after feedlot arrival and for the entire feeding period.

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Summary

- Plan ahead
- Minimize stress
- Establish health protocols
- Remember the goal

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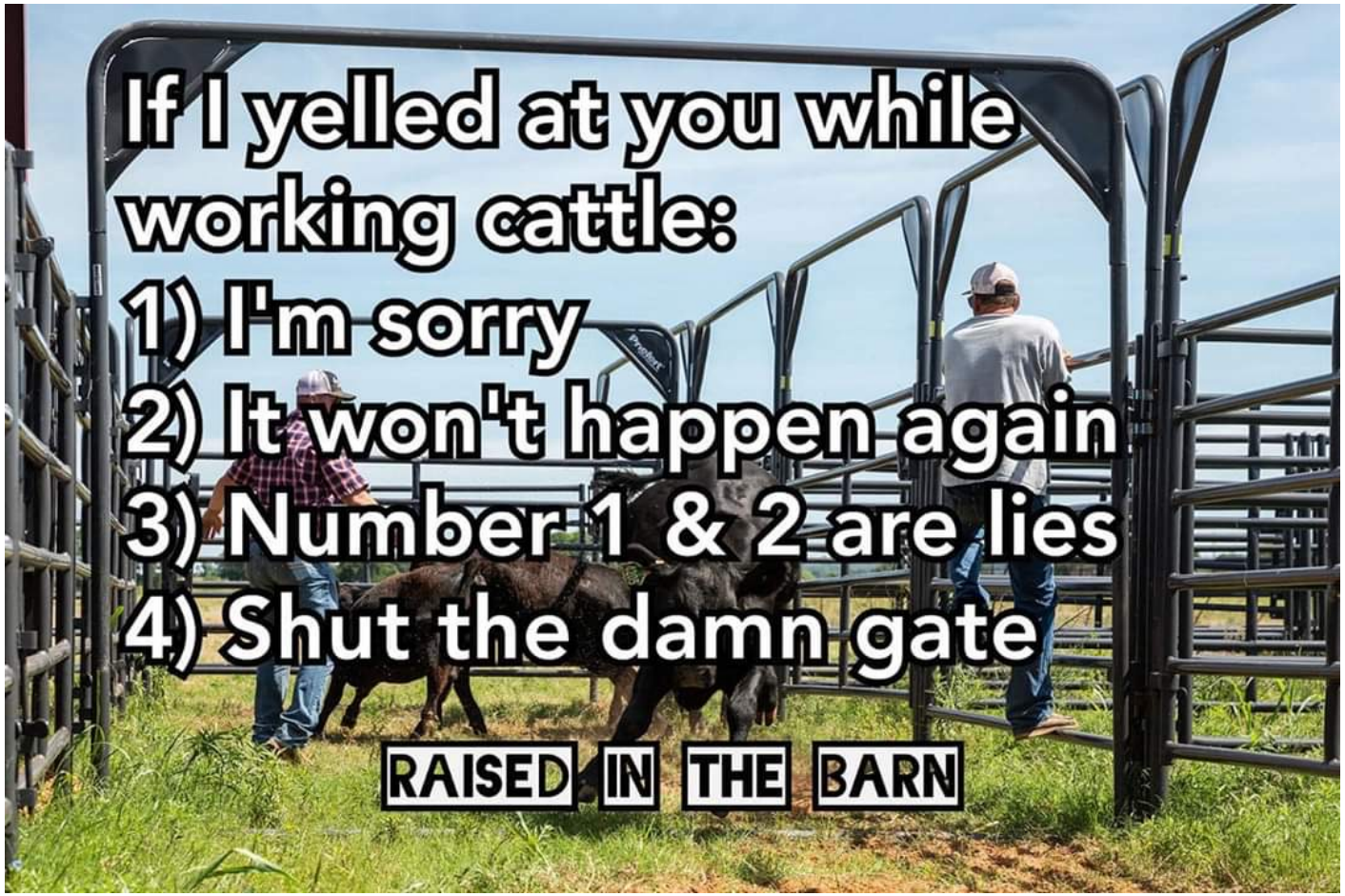

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Preconditioning Economics

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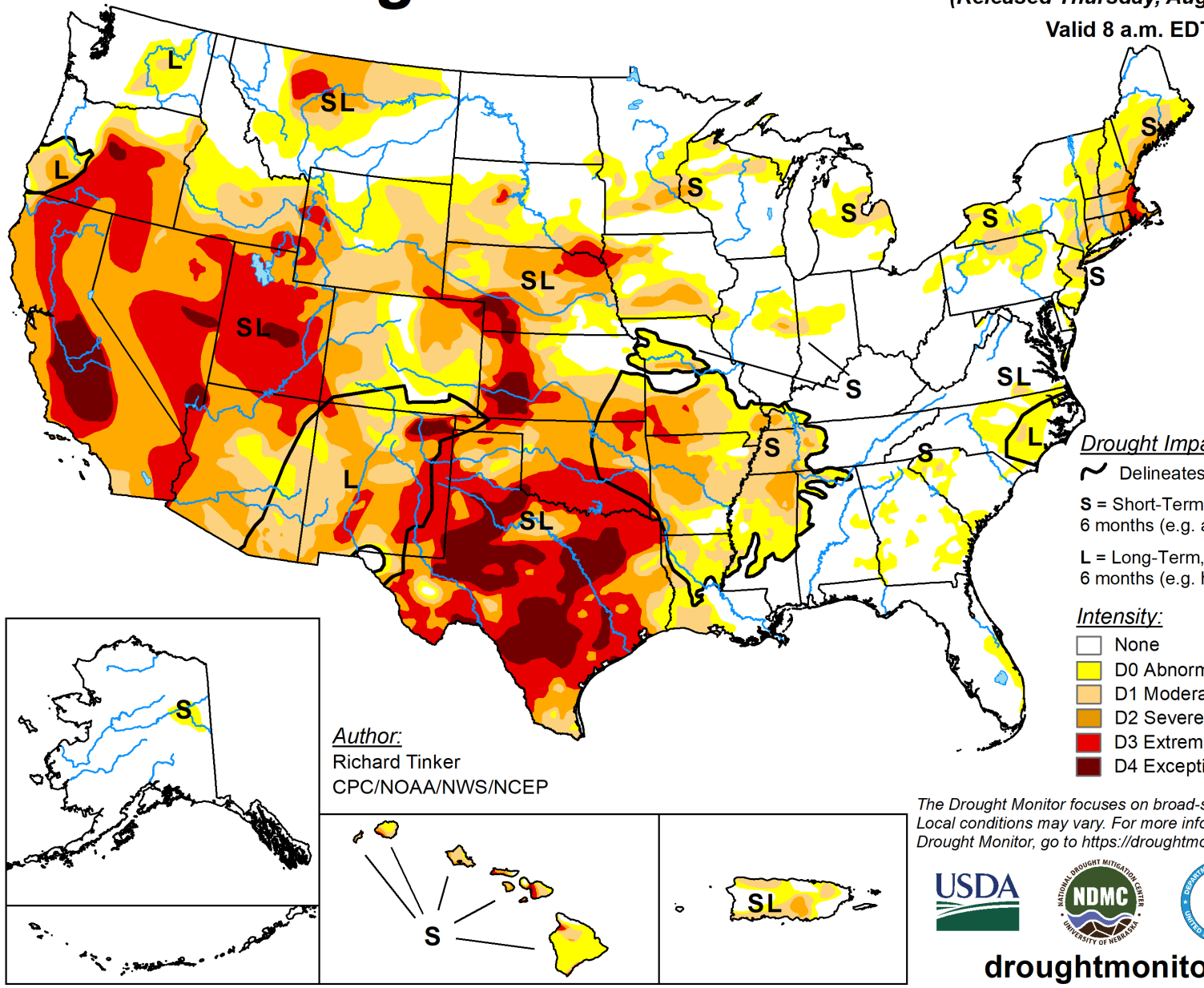
U.S. Drought Monitor

August 9, 2022

(Released Thursday, Aug. 11, 2022)

Valid 8 a.m. EDT



Drought Impact Types:

Delineates dominant impacts

S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)

L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

Author:
Richard Tinker
CPC/NOAA/NWS/NCEP

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

droughtmonitor.unl.edu

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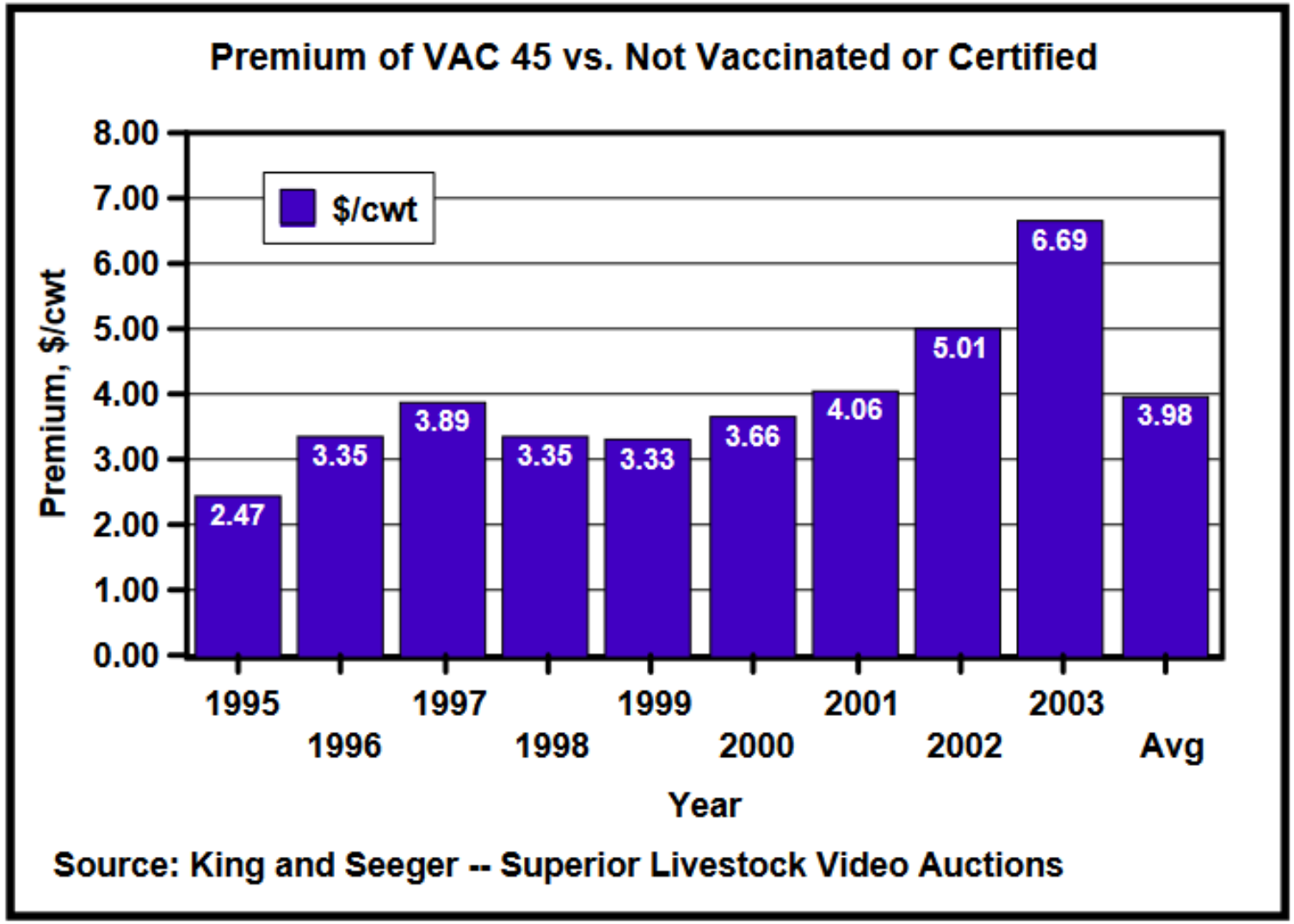

Figure 3

Dhuyvetter, K. C. 2005

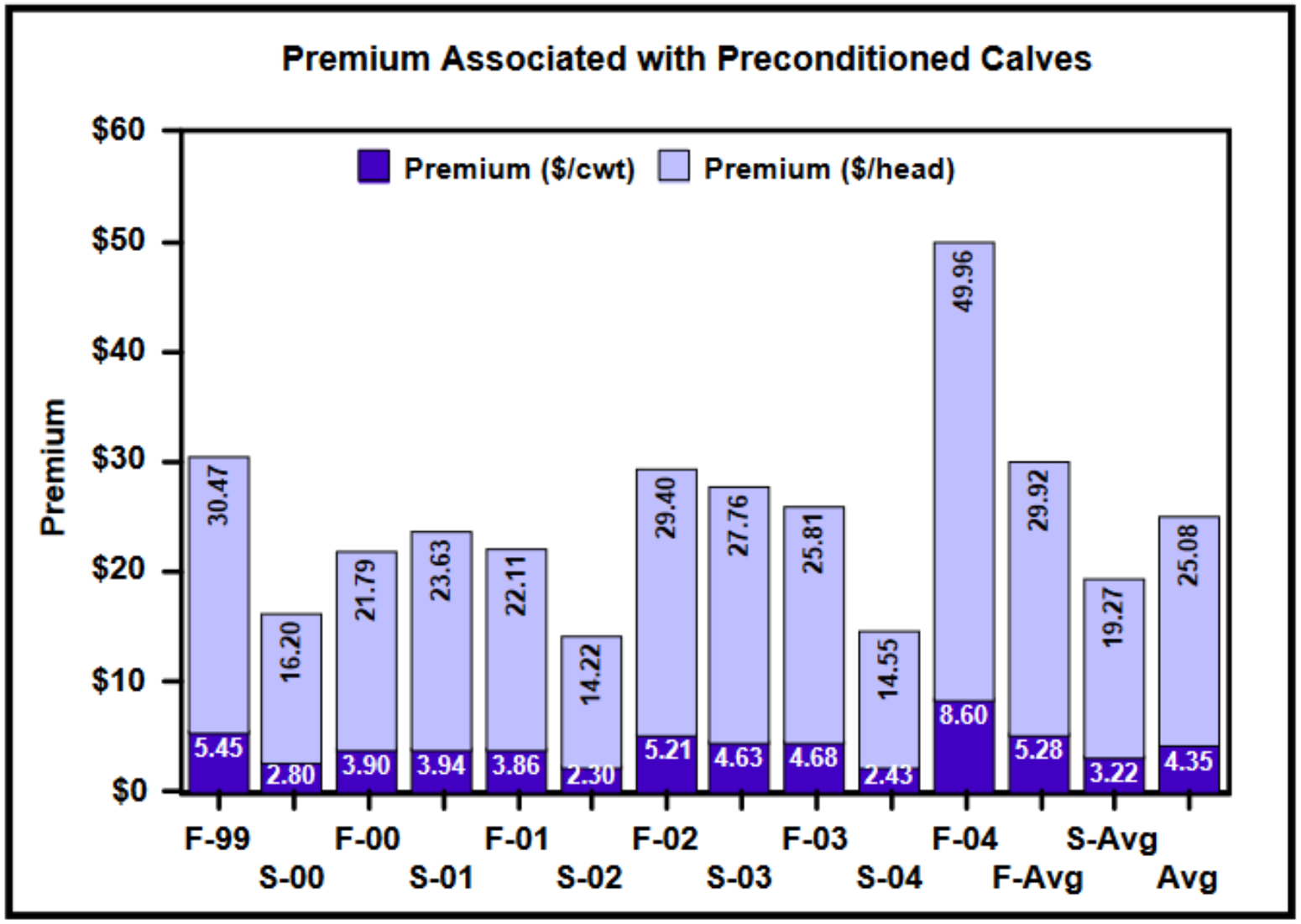

Figure 4

Dhuyvetter, K. C. 2005

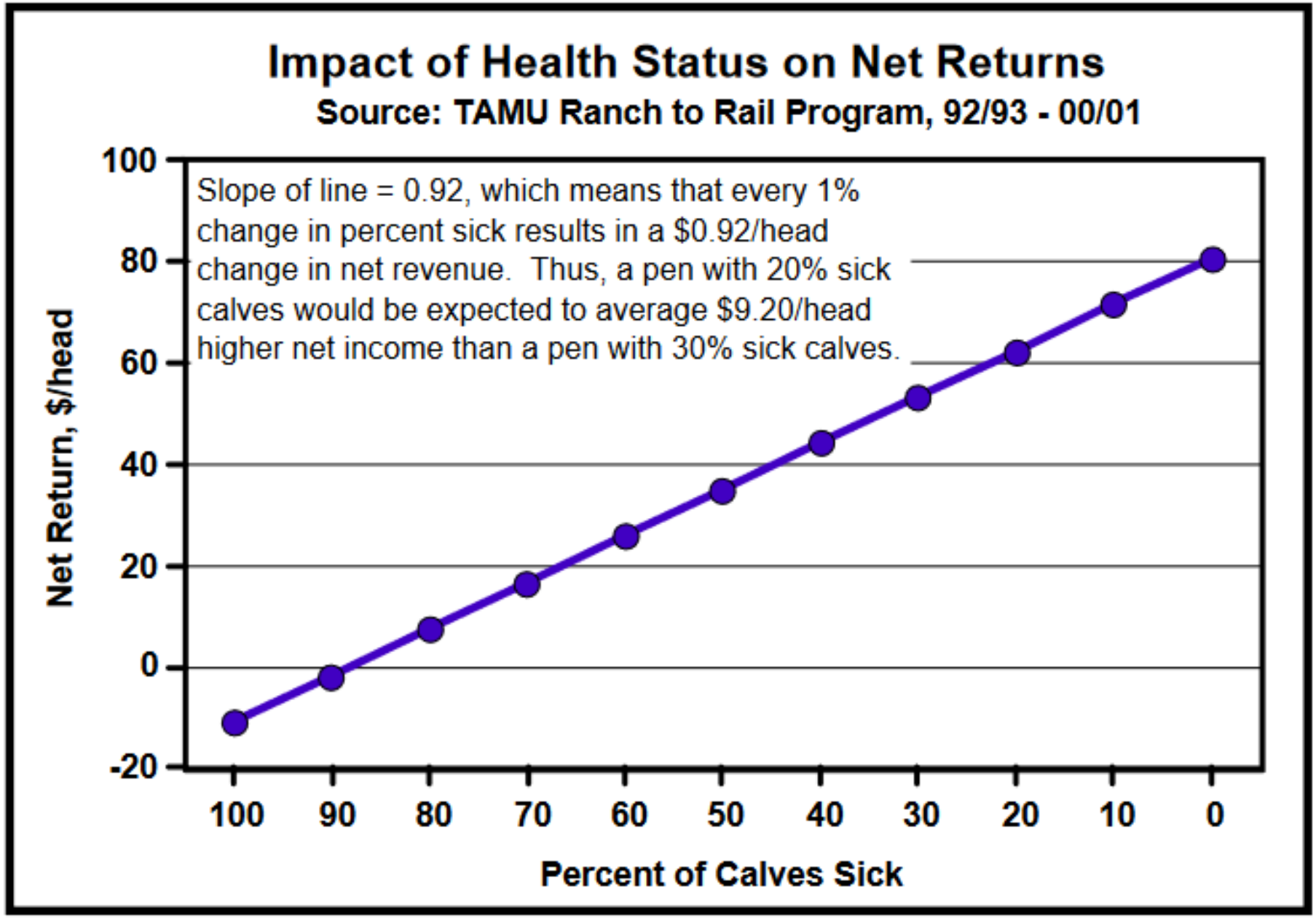
Impact of Health Status on Net Returns
Source: TAMU Ranch to Rail Program, 92/93 - 00/01
Slope of line = 0.92, which means that every 1% change in percent sick results in a $0.92/head change in net revenue. Thus, a pen with 20% sick calves would be expected to average $9.20/head higher net income than a pen with 30% sick calves.
Net Return, $/head
100
80
60
40
20
0
-20
100
90
80
70
60
50
40
30
20
10
0
Percent of Calves Sick

Figure 6.

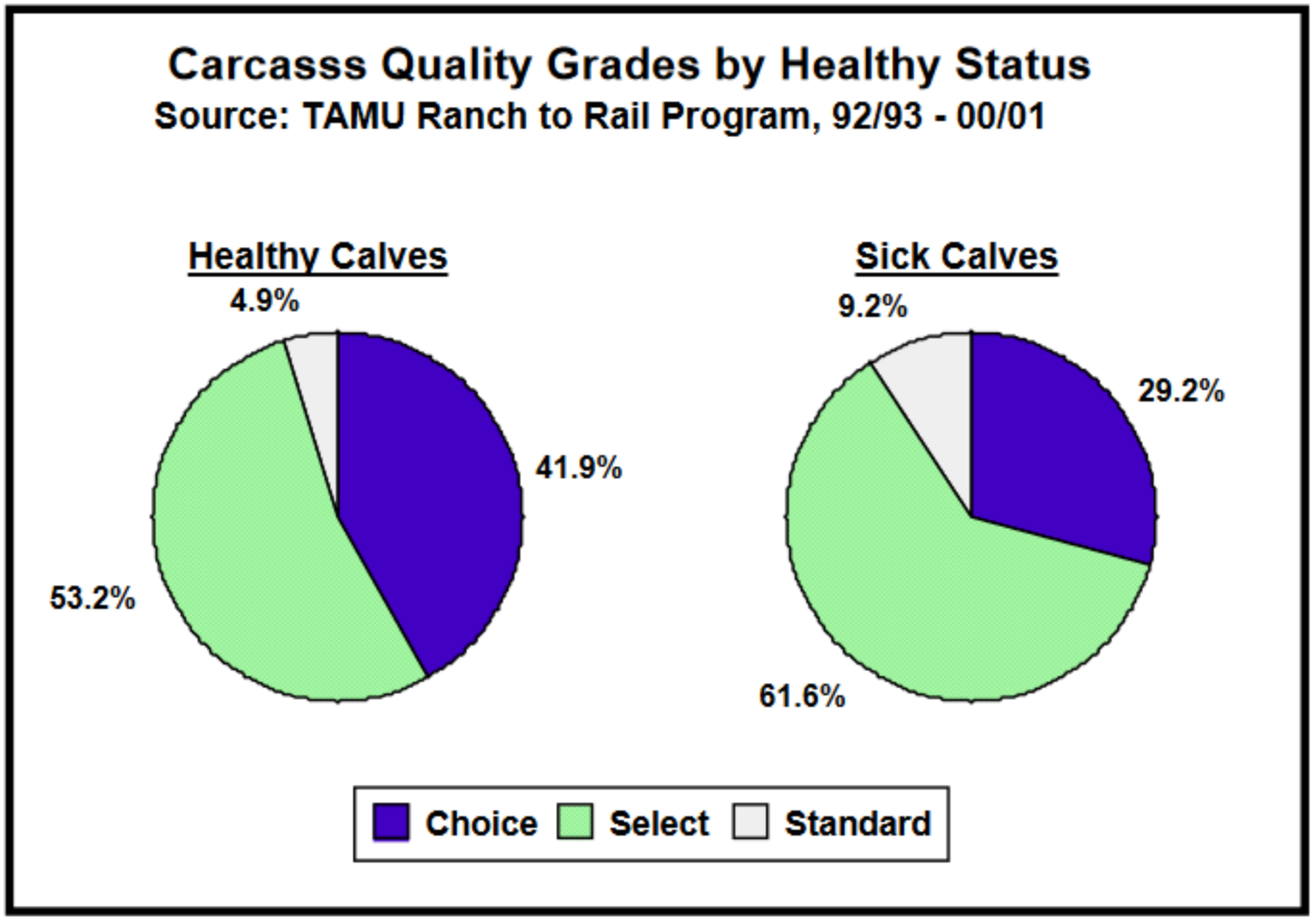
Carcasss Quality Grades by Healthy Status
Source: TAMU Ranch to Rail Program, 92/93 - 00/01
Healthy Calves
4.9%
41.9%
53.2%
Sick Calves
9.2%
29.2%
61.6%
Choice
Select
Standard

Figure 5.

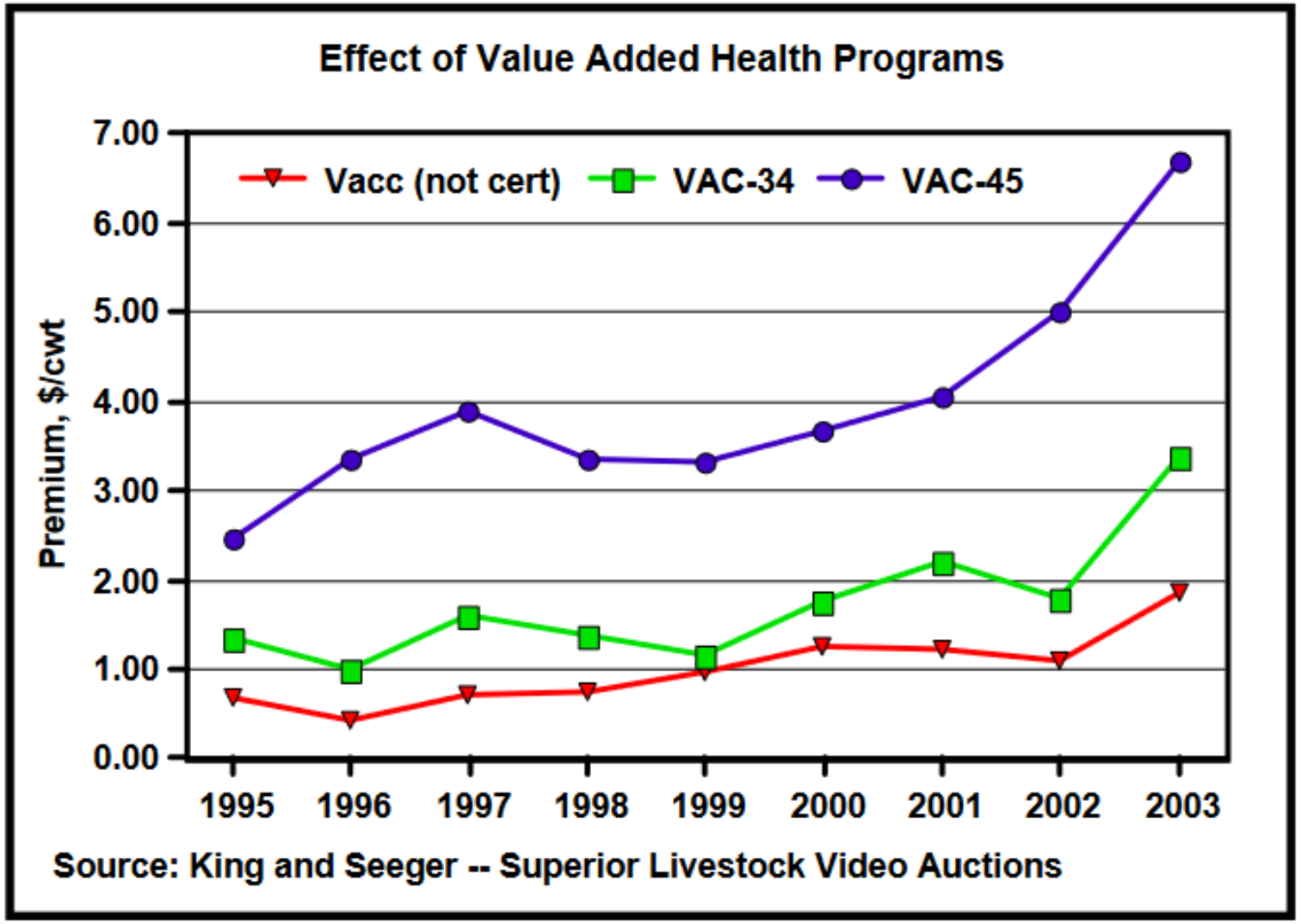
Effect of Value Added Health Programs
Vacc (not cert)
VAC-34
VAC-45
Premium, $/cwt
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1995
1996
1997
1998
1999
2000
2001
2002
2003
Source: King and Seeger -- Superior Livestock Video Auctions

Figure 7

Table 4. Weaning performance and health of beef calves vaccinated against respiratory-disease viral pathogens 0, 1, 2, or 3 times during a 28-d ranch-of-origin weaning period

	Degree of vaccination[1]					
Item	0X	1X	2X	3X	SEM	P-value
BW, kg						
Maternal separation	232	224	228	230	5.6	0.56
Shipping	249	241	243	248	6.6	0.59
Preconditioning ADG, kg	0.60	0.60	0.55	0.65	0.072	0.57
DMI, kg/d	4.41	4.37	4.36	4.51	0.262	0.56
G:F	0.133	0.137	0.124	0.143	0.0138	0.56
Morbidity, %	11.6	5.2	7.4	5.3	6.82	0.49

1 0X = received no respiratory vaccination during preconditioning; 1X = received respiratory vacation at maternal separation; 2X = received respiratory vaccination at maternal separation and again 14 d later; 3X = received respiratory vaccination at maternal separation, 14 d later, and again 28 d later.

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Extension is a Division of the Institute of Agriculture and Natural Resources at the University of Nebraska-Lincoln cooperating with the Counties and the United States Department of Agriculture.