Ethanol Byproduct Use for Beef Cattle & Impact on Quality

G. Erickson & T. Klopfenstein

UNIVERSITY OF Nebraska Lincoln

NEBRASKA

IANR

UNL Meta Analysis of WDGS Effect on Carcass Characteristics

Virgil Bremer,
Galen Erickson & Terry Klopfenstein

Criteria for Trials Used

- Focus on corn WDGS only
- UNL Mead research
- DRC, HMC, DRC:HMC diets
- Individual animal carcass data
  - HCW
  - 12^{th} rib fat
  - Marbling score
  - Yield grade

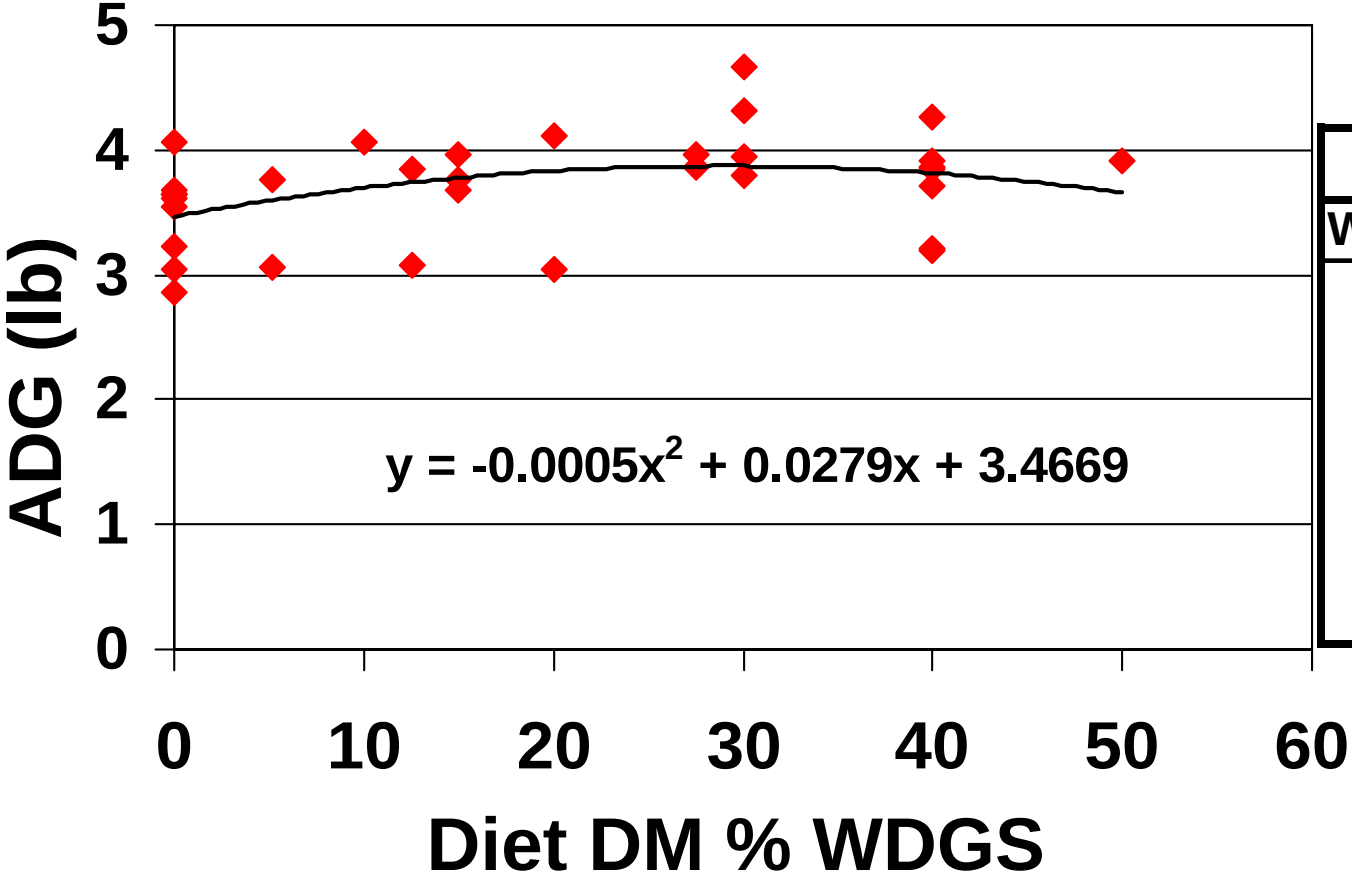
UNL Studies Used

Experiment	Year	Diet DM % WDGS	Hd/Tx
Sindt et al.	1990	0, 5.2, 12.6, 40	40
Larson et al.	1991	0, 5.2, 12.6, 40	40
Ham et al.	1992	0, 40	32
Fanning et al.	1997	0, 30	20
Vander Pol et al.	2002	0, 20, 40	10
Vander Pol et al.	2004	0, 10, 20, 30, 40, 50	48
Buckner et al.	2005	0, 30	50
Corrigan et al.	2005	0, 15, 27.5, 40	40
Luebbe et al.	2005	0, 15, 30	32

Materials and Methods of Trials

- Diet % WDGS (DM basis)
- 5-7.5 % DM roughage in diet
- Calves and Yearlings
  - Predominantly black crossbred steers
- 34 treatment means (n= 1257 hd)
- USDA called Quality grade on 500 = Small^{0}
- Calculated YG used (n= 873) except when LM area unknown (n= 384)

Average Daily Gain

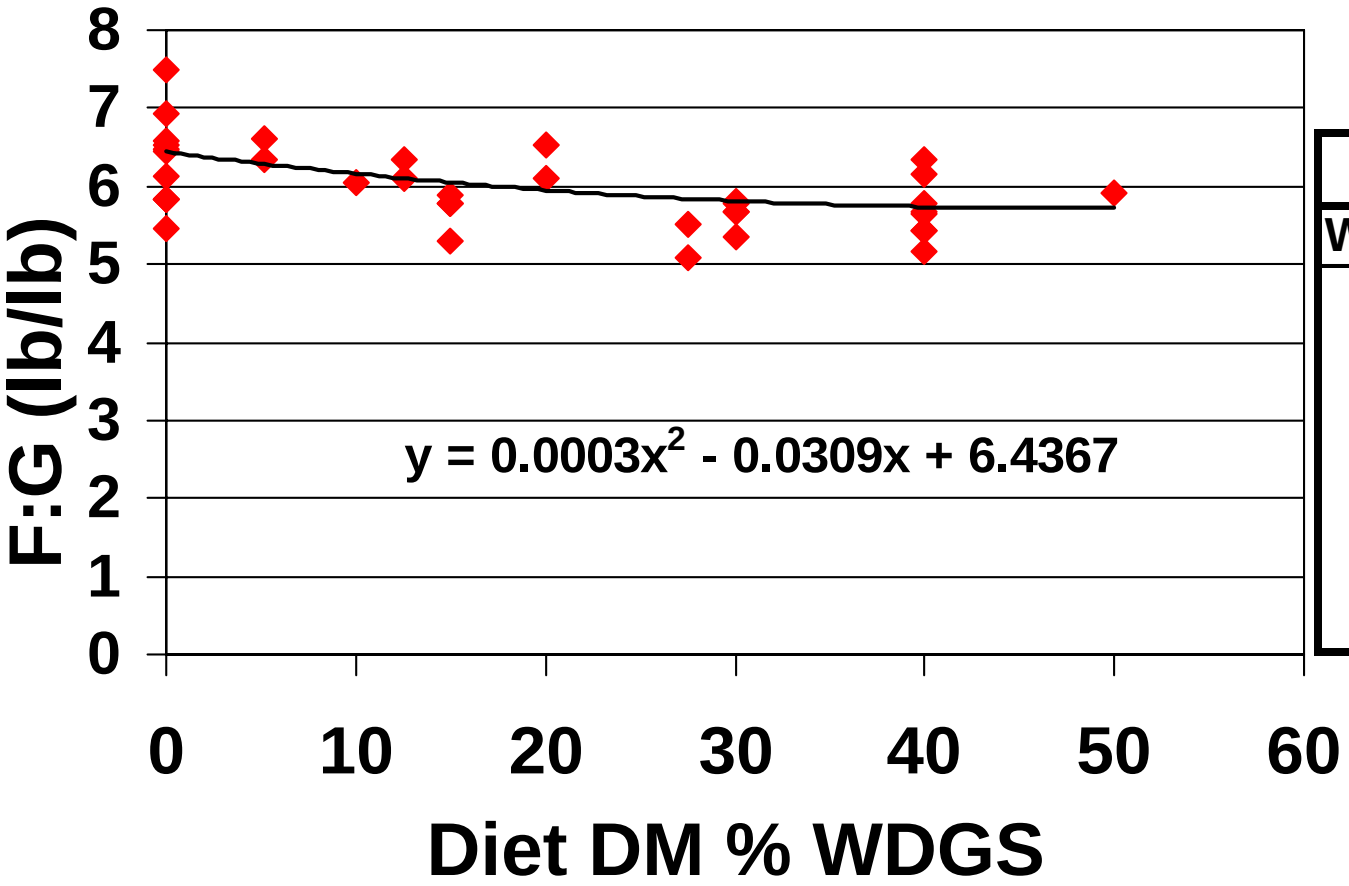


Predicted Values	
WDGS Level	ADG (lb)
0	3.47
10	3.70
20	3.83
30	**3.87**
40	3.81
50	3.66

Intercept
cov. P = 0.03
≠ 0 P < 0.01

L P < 0.01
Q P < 0.01

Feed Conversion

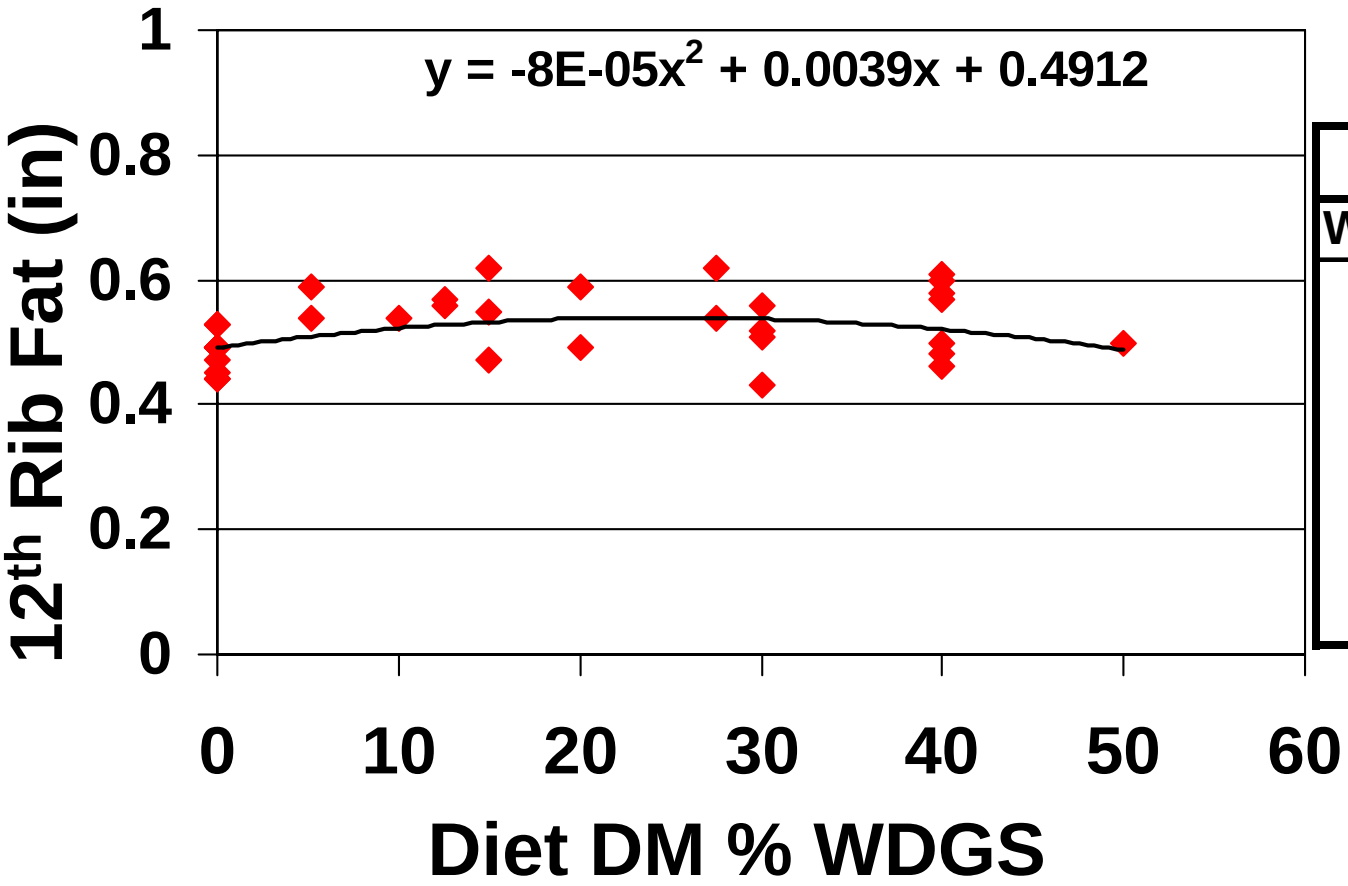


Predicted Values	
WDGS Level	**F:G**
0	6.44
10	6.16
20	5.95
30	5.81
40	5.74
50	**5.73**

Intercept
cov. P = 0.04
≠ 0 P < 0.01

L P < 0.01
Q P = 0.09

12th Rib Fat Depth

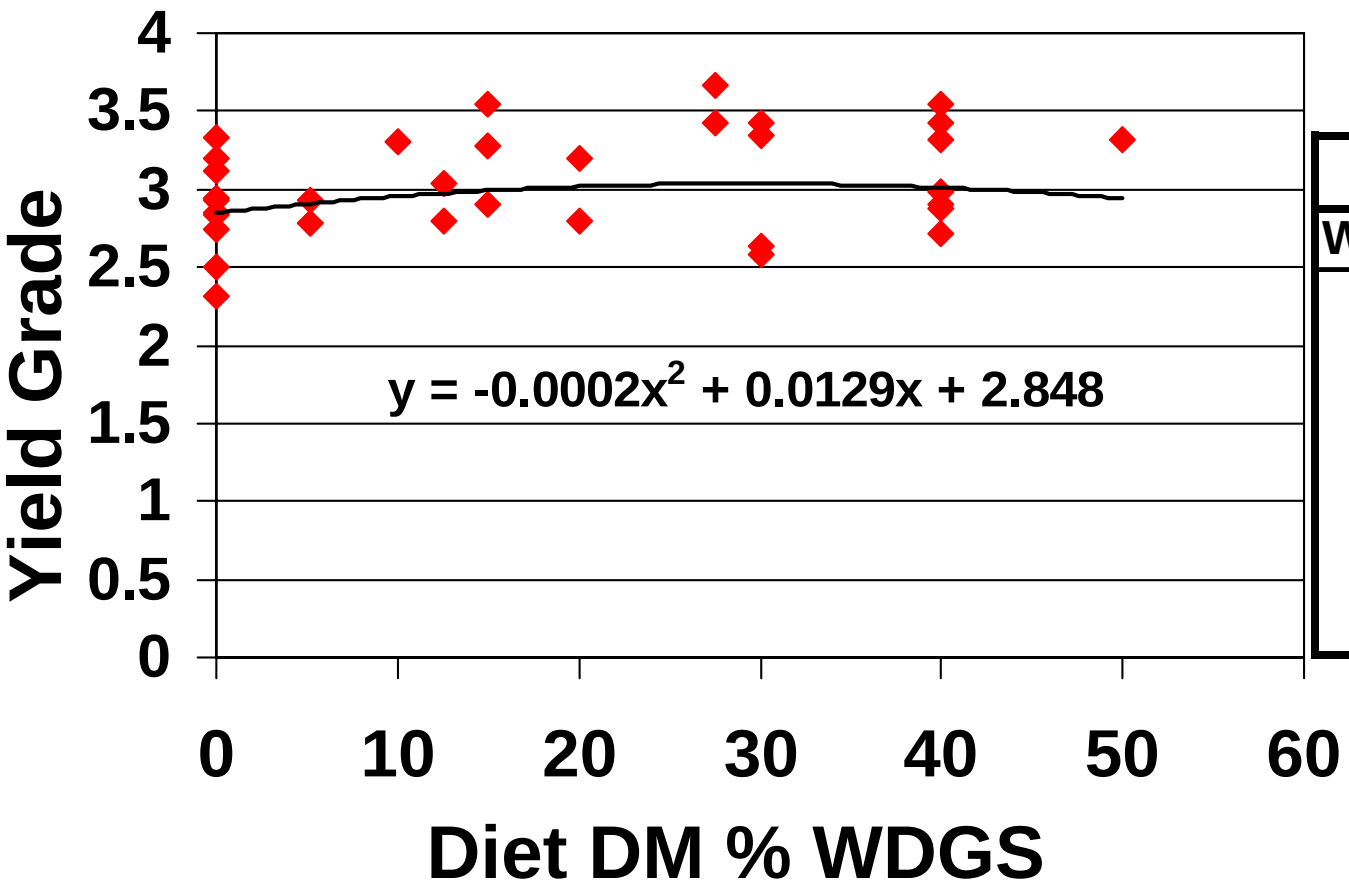


Predicted Values	
WDGS Level	FAT
0	0.49
10	0.52
20	0.54
30	0.54
40	0.52
50	0.49

Intercept
cov. P = 0.02
≠ 0 P < 0.01

L P < 0.01
Q P = 0.04

Yield Grade

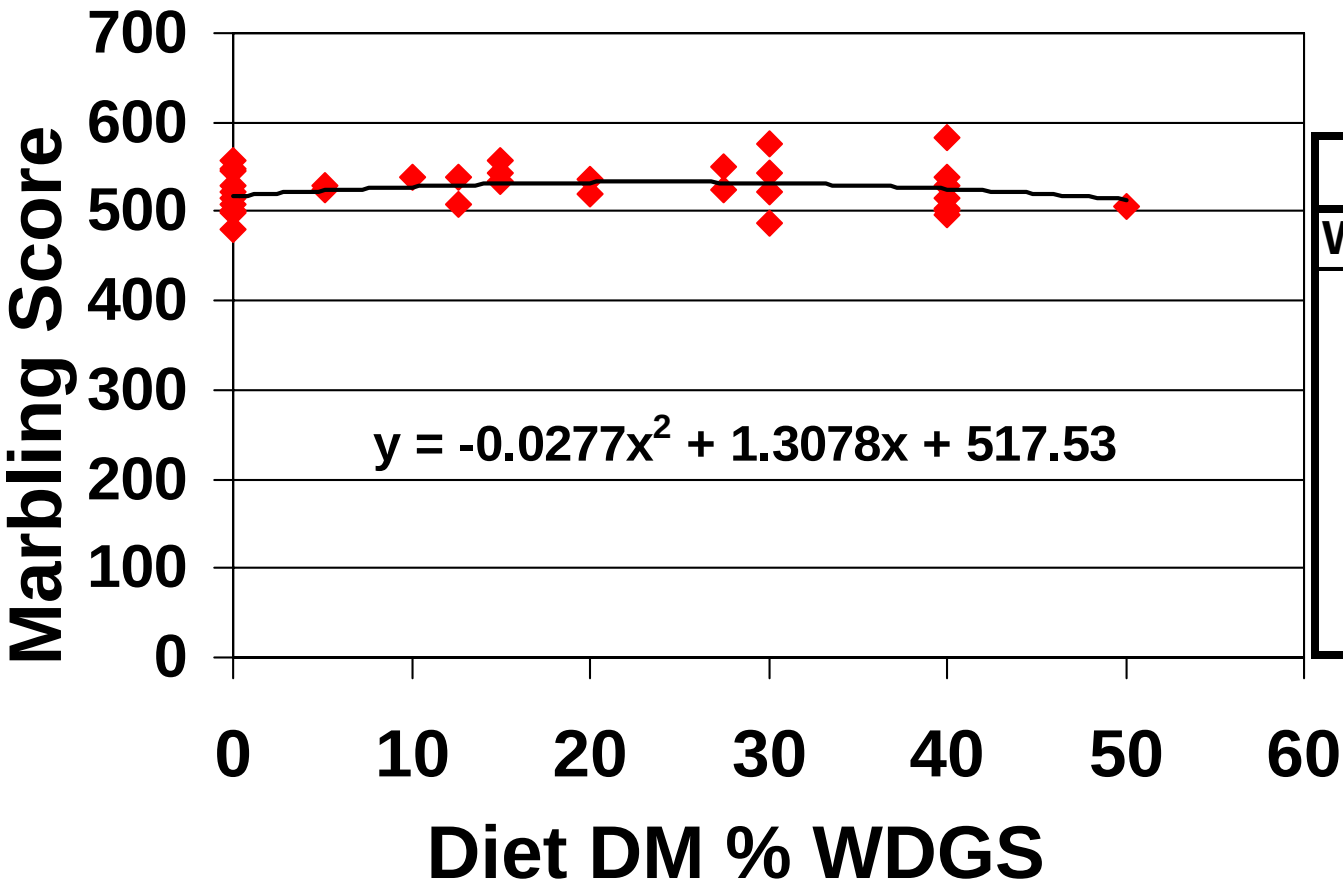


Predicted Values	
WDGS Level	YG
0	2.85
10	2.95
20	3.02
30	3.04
40	3.01
50	2.94

Intercept
cov. P = 0.03
≠ 0 P < 0.01

L P < 0.01
Q P = 0.06

Marbling Score



Predicted Values	
WDGS Level	Marbling
0	518
10	528
20	533
30	532
40	526
50	514

500 = Small^{0}

Intercept
cov. P = 0.08
≠ 0 P < 0.01

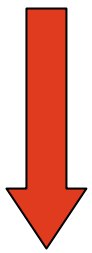
Slope
cov. P = 0.09

L P = 0.05
Q P = 0.05

Conclusion

- Intermediate Levels of WDGS (10-40%)
  DRC & HMC Diets
  Equal DOF

Convert more efficiently



Get fat quicker  More marbling

UNL Meta Analysis of WCGF Effect on Carcass Characteristics

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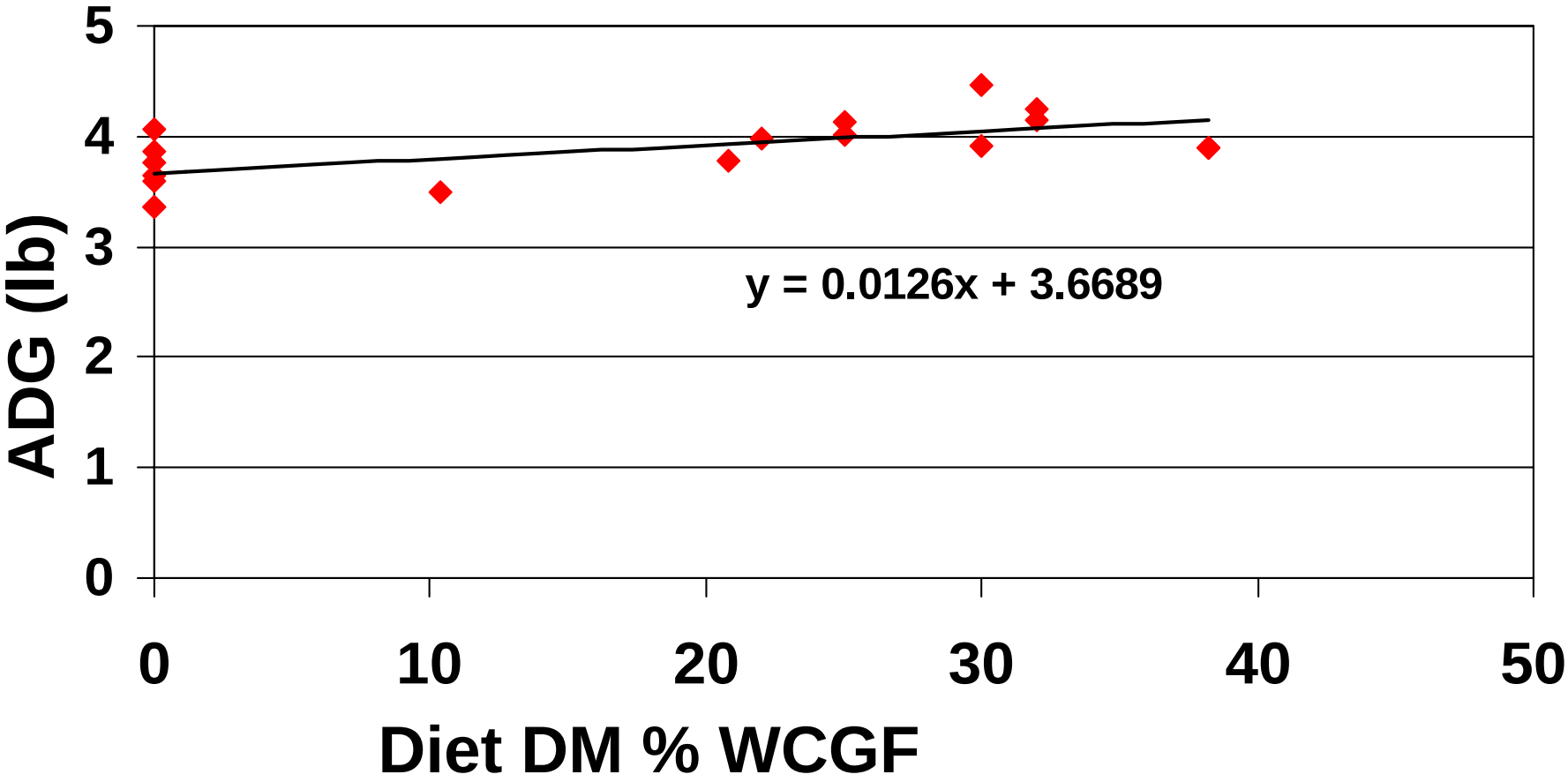
UNL Studies Used

Experiment	Year	Diet DM % Sweet Bran	Hd/Tx
Richards et al.	1993	0, 25	40
Scott et al.	1995	0, 10, 21, 38	40
Herold et al.	1996	0, 38	40
Scott et al.	1999	0, 32	60
Scott et al.	1999	0, 22	48
Buckner et al.	2005	0, 30	50
Losa et al.	2005	0, 30	72

Materials and Methods of Trials

- Diets 0-40 % Sweet Bran® (DM basis)
- DRC, HMC, or DRC:HMC control diet
- 7-7.5 % DM roughage in diet
- Calves and Yearlings
  - Predominantly black crossbred steers
- 18 treatment means (n= 880 hd)
- USDA called Quality grade on 500 = Small^{0}

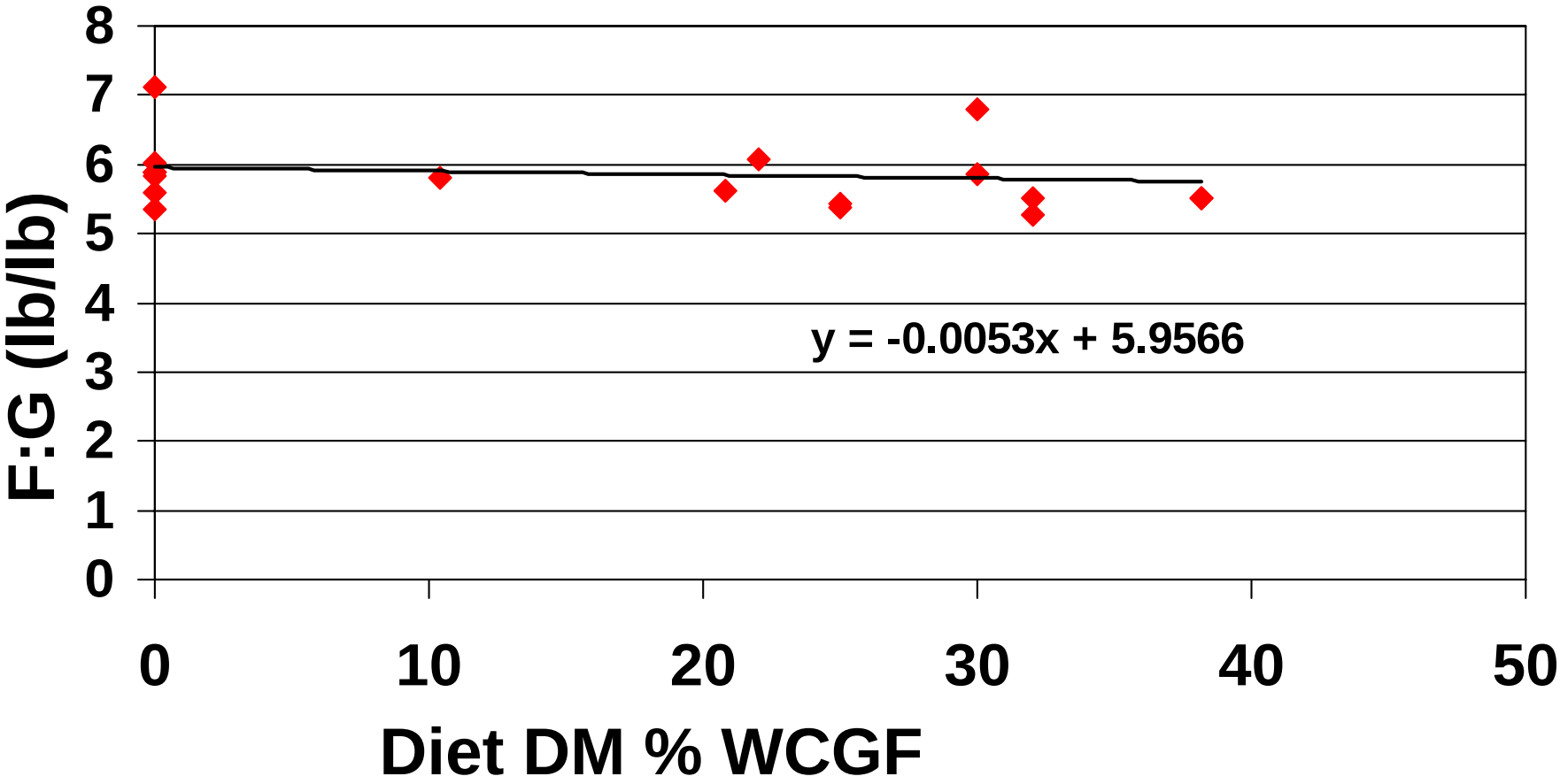
Average Daily Gain



Intercept
cov. P = 0.05
≠ 0 P < 0.01

L P < 0.01
Q P = 0.67

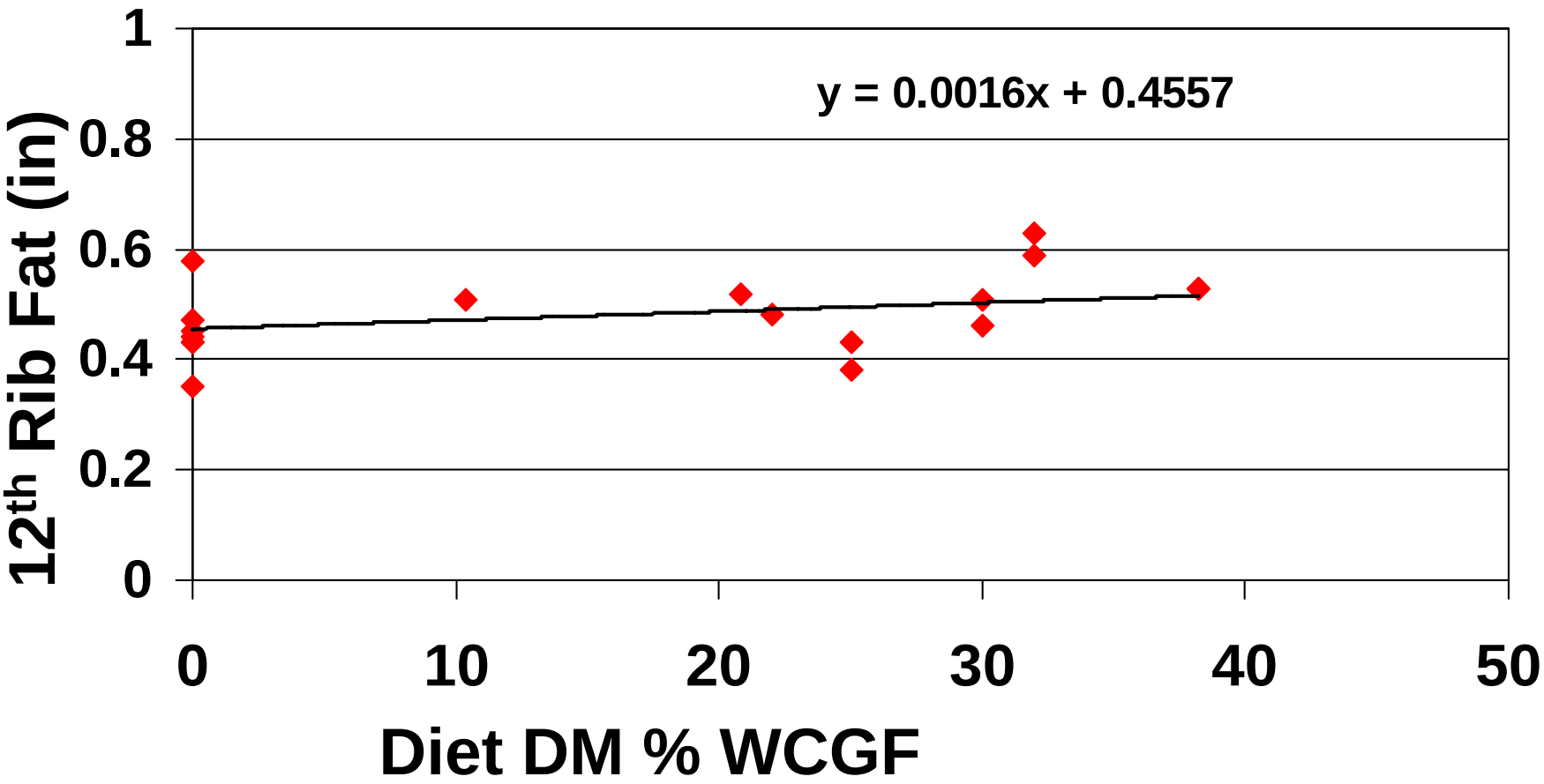
Feed Conversion



Intercept
cov. P = 0.05
≠ 0 P < 0.01

L P = 0.03
Q P = 0.48

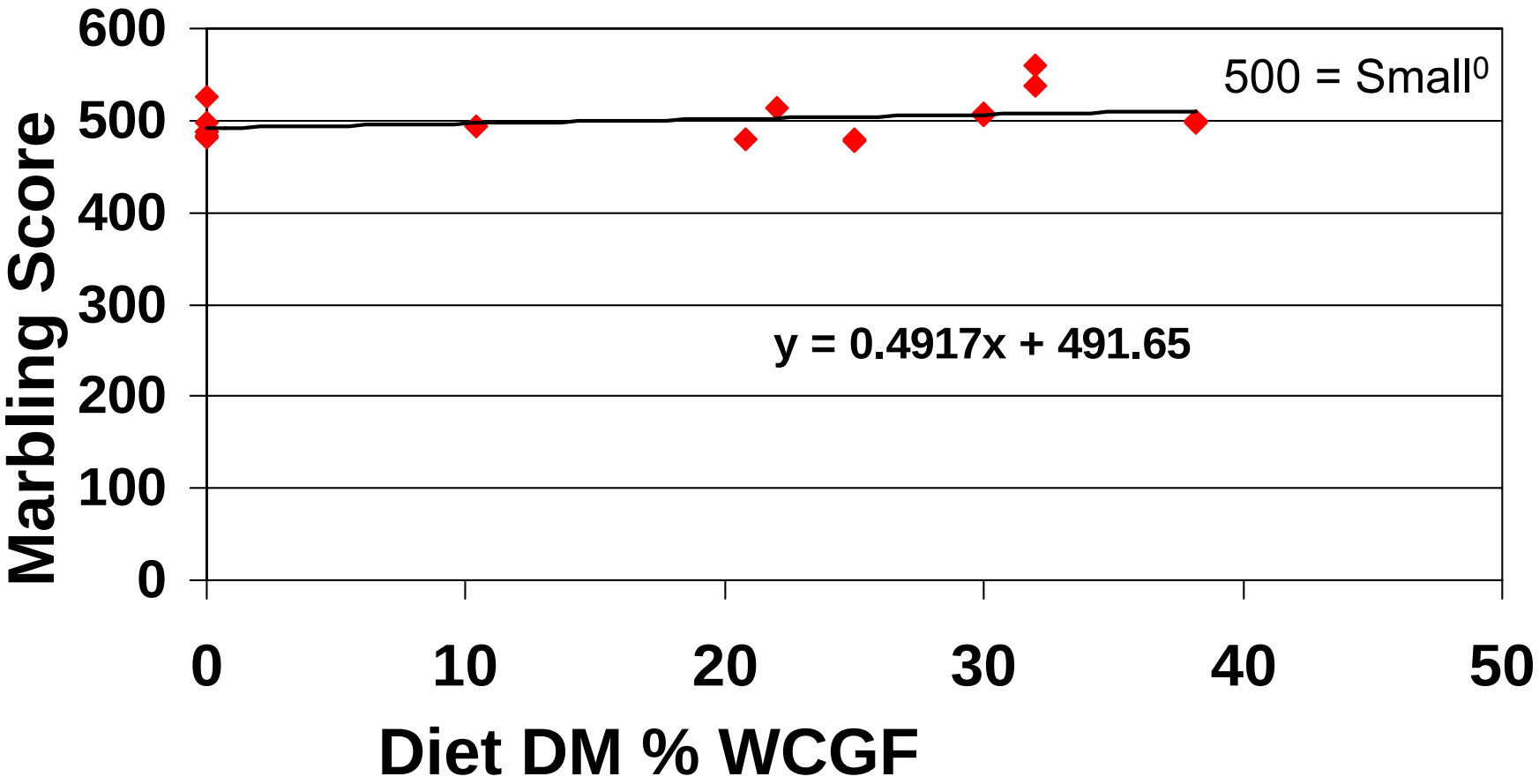
12th Rib Fat Depth



Intercept
cov. P = 0.05
≠ 0 P < 0.01

L P < 0.01
Q P = 0.87

Marbling Score



Intercept
cov. P = 0.06
≠ 0 P < 0.01

L P < 0.01
Q P = 0.78

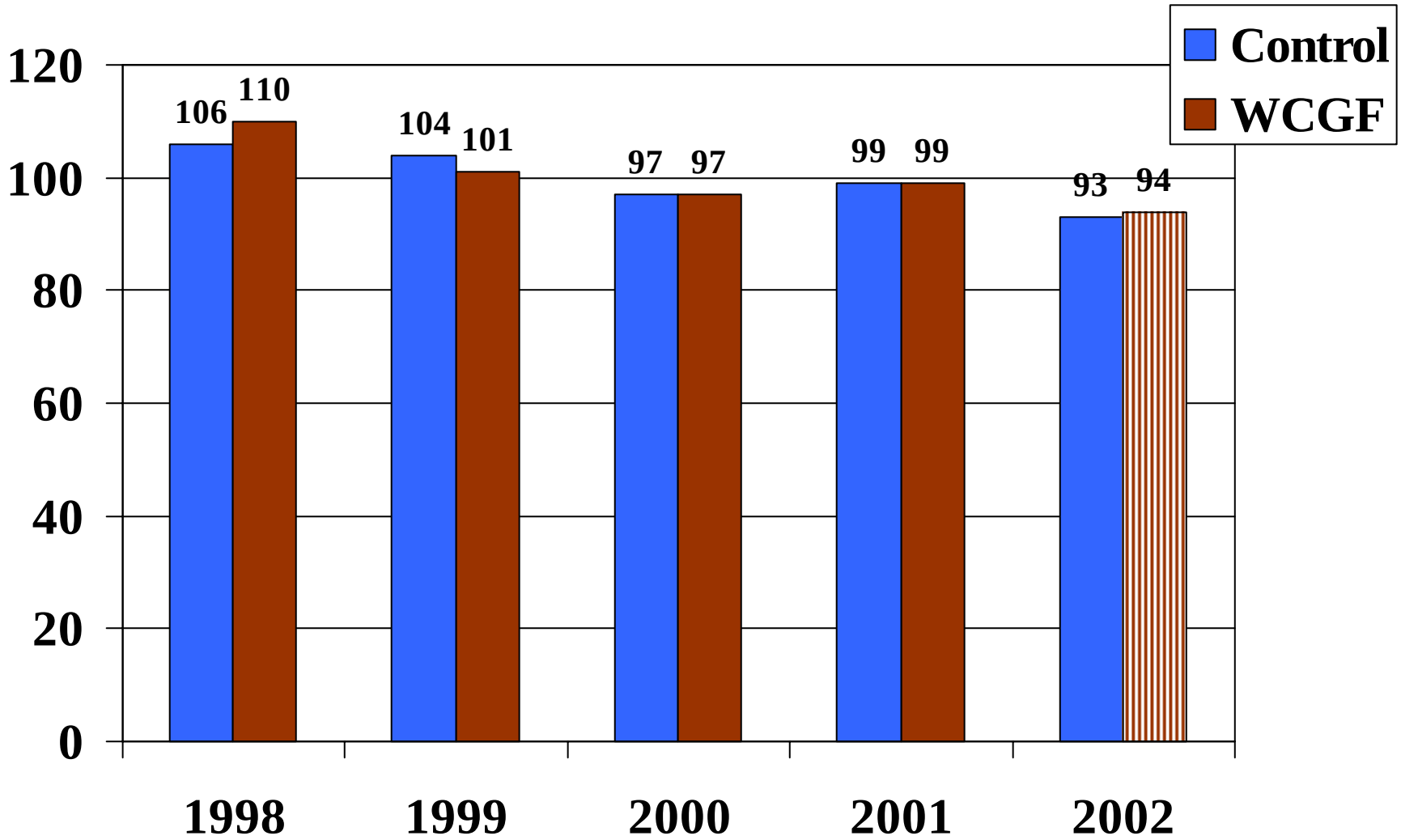
WCGF and quality grade

	Control	Sweet Bran
Comparison 1	58.8	61.4
Comparison 2	57.2	56.8

[a] 8 university studies with steam-flaked corn; 1200+ hd Control, 2,200+ hd fed Sweet Bran

[b] ~6,000 heifers fed in 21 pen replicates, commercial feedlot

WCGF and quality grade



Over 2.3 million hd over 5 yrs not fed Sweet Bran
Over 1.4 million hd over 5 yrs fed Sweet Bran in 2002

Utilization of Corn Co-Products in the Beef Industry

NEBRASKA CORN BOARD

University of Nebraska Lincoln

A joint project of the Nebraska Corn Board and the University of Nebraska–Lincoln Institute of Agriculture and Natural Resources

Corn Processing Co-Products Manual

A REVIEW OF CURRENT RESEARCH ON DISTILLERS GRAINS AND CORN GLUTEN

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Beef Extension Page

http://beef.unl.edu

Beef Cattle Production: Home

Beef Cattle Production

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NU IANR News
02/14/05

Beekeeping Workshops Teach Bee Biology, Practical Bee-Handling Skills ...
Nebraska Statewide Arboretum Announces 2005 Community Landscape Grant Awards ...
Second Nebraska Youth Beef Leadership Symposium Offered in April ...
Care Needed in Handling Mice to Avoid Hantavirus ...
Crop Scout Training Offered for Pest Managers ...

Timely Topic

An Inexpensive Measure of Feed Efficiency in Beef Cattle
Residual feed intake (RFI), an accurate predictor of feed efficiency, is difficult and expensive to measure. [February 11]

Did you know?

Previously Featured Timely Topics

Keeping Records This Calving Season
With the spring calving season approaching and the national animal identification program beginning to materialize, it is a good time to think about management consideration and records to collect. [February 01]

Genetic Correlations Between Postweaning Feed Efficiency and Cow Traits
Australian scientists used postweaning records on 1781 bulls and heifers individually tested for feed efficiency, and cow records taken at 4 yrs. of age on 751 of the same heifers to estimate genetic correlations between postweaning feed efficiency and certain cow traits. [January 26]

Body Condition Score at Calving is the KEY
One of the major constraints in the improvement of reproductive efficiency of beef cows is the duration of the post-calving anestrus period. [January 11]

Missed something? Go to Resource Archives.

Beef Forum

Cow/Calf Profitability
Steps to increase profit potential in the cow/calf enterprise. [Sep 2002]
Dr. Rick Rasby
Dr. Larry Corah

Missed something? Go to Beef Forum archive.

Educational Programs

The 2005 Nebraska Beef Feedlot Roundtable
Grand Island, February 15, 2005

2nd Annual Nebraska Youth Leadership Symposium
Lincoln, NE, April 17 - 19, 2005

Beef Home Study Course
Valentine, NE, open enrollment

FAQs

How many days should you dry lot your calves before there safe to turn back on their mothers?

What is the proper planting time for turnips in the panhandle for fall grazing?

I have 2 registered black angus heifers born 1/2004. I haven't had anything to do with cows since I was growning up. Is the gestations period 9 months? What is a good age to breed the heifers? Are they old enough now?

I'am feeding my cattle a free choice mineral it went up $8 a 100# in the last couple months.Is there any other cheeper option I have to give them with the same type of minerals?

I have weaned my first set of heifers. They are all around 500 lbs. I took them off their mommas 1/8/05. When they are weaned I am going to turn them back out into the main herd (Their Mommas). How long do I need to keep them separated for them to be "Wea ...

Go to FAQ Archives to find additional FAQ topics updates

Monthly Production Calendar Highlights

January
February

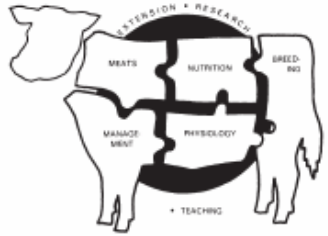
University of Nebraska - Lincoln Institute of Agriculture & Natural Resources

Beef Reports

NEBRASKA

Nebraska Lincoln EXTENSION

MP 88-A



Agricultural Research Division
University of Nebraska Extension
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln

2006 Beef Cattle Report

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IANR

UNIVERSITY OF Nebraska Lincoln

CONTACT: Galen Erickson PH: 402 472-6402

geericks@unlnotes.unl.edu http://beef.unl.edu

Acknowledge:

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