

Effect of Ethanol Production on Northeastern Colorado Corn Prices

By Jonathan Huss

Overview

- Introduction & Methods
- Ethanol Background
- Study Site Background
- County Production and Use
- Corn Prices
- Transportation Costs
- Conclusion

Introduction and Methods

- Ag major part of U.S. history and economy
- Many new technological advances
 - Ethanol production
 - New crop varieties
- Prices and Production
 - Vary from year to year: supply vs. demand, weather, etc.

Introduction and Methods cont.

■ Method

- Gathered background information on ethanol production process
- Looked at Northeastern Colorado corn production, uses, and prices
- Used this information to determine effect of ethanol production on corn prices

Introduction and Methods cont.

■ Risks

- Hard to determine exact effects in local area
 - National market for corn and ethanol
 - No distinct line of where markets start and end
 - No way to figure exact use
- Production
- Price

Ethanol Background

■ What is Ethanol

- Alcohol that can be used as fuel or fuel additive

■ History

- Been around since prehistoric times
- Used to power vehicles since late 1800's/early 1900's
 - Quadricycle
 - Ford Model T

Ethanol Background cont.

■ How produced

- Break down glucose and starch found in corn kernels
- Field corn (not sweet corn used)
- Can also be produced by other crops
 - Sugar cane
 - Potatoes
 - Some trees and grasses
 - Algae (newer concept)



Ethanol Background cont.

■ What is produced

- One bushel of corn produces roughly 2.8 gallons of ethanol and 17 pounds of distillers grains.
- Energy balance: amount of energy produced divided by amount of energy needed for production
 - Corn has energy balance of 1.3
 - Sugar cane has energy balance of 8

Ethanol Background cont.

■ Laws

- Energy Policy Act of 2005
 - 6.1 billion gallons by 2009
 - 7.5 billion gallons by 2012
- Energy Independence and Security Act of 2007
 - 36 billion gallons by 2022

Study Site Background

■ Northeastern Colorado

- Logan, Sedgwick, Phillips, Washington, Yuma
- Known as major ag production area in state

■ Crops

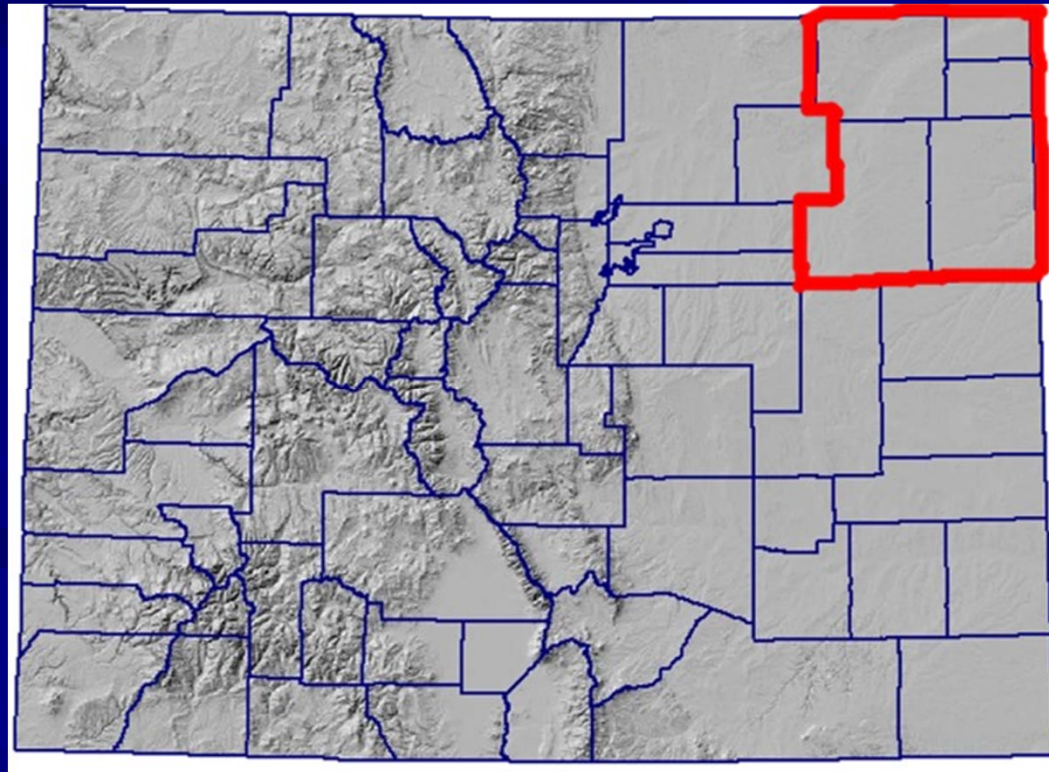
- Corn, wheat, beans, sugar beets, sunflowers, peas, popcorn, potatoes, alfalfa, sorghum, and oats

■ Livestock

- Many feedlots and some hog facilities

Study Site Background cont.

- Two ethanol plants in place
 - Sterling Ethanol, LLC (opened Fall 2005)
 - Yuma Ethanol, LLC (opened Fall 2007)



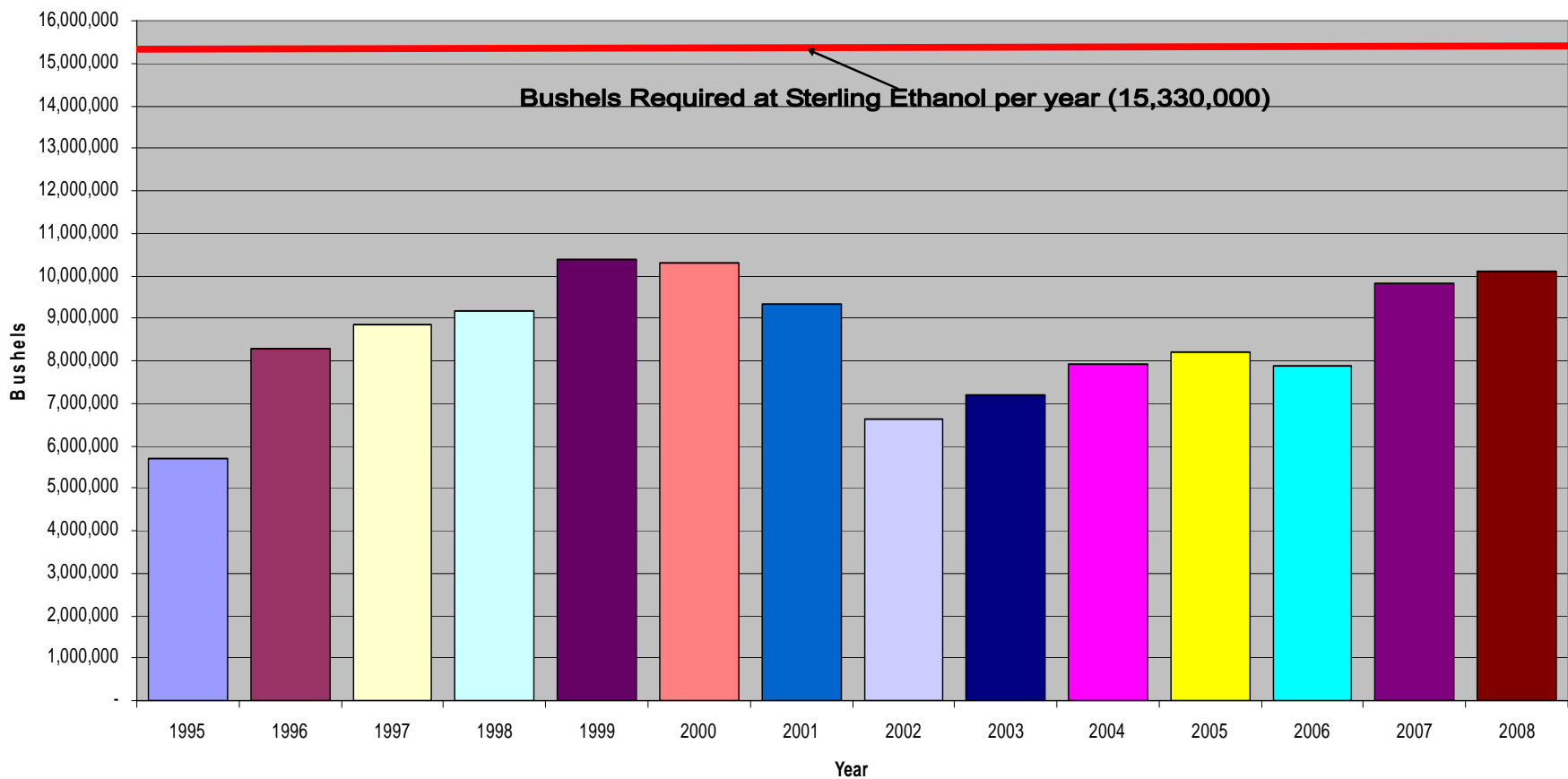
County Production and Use

- Constructing ethanol plant in an area increases demand for corn
- Production figured before plant is constructed
 - Make sure there is available supply to produce ethanol
 - Costs figured in



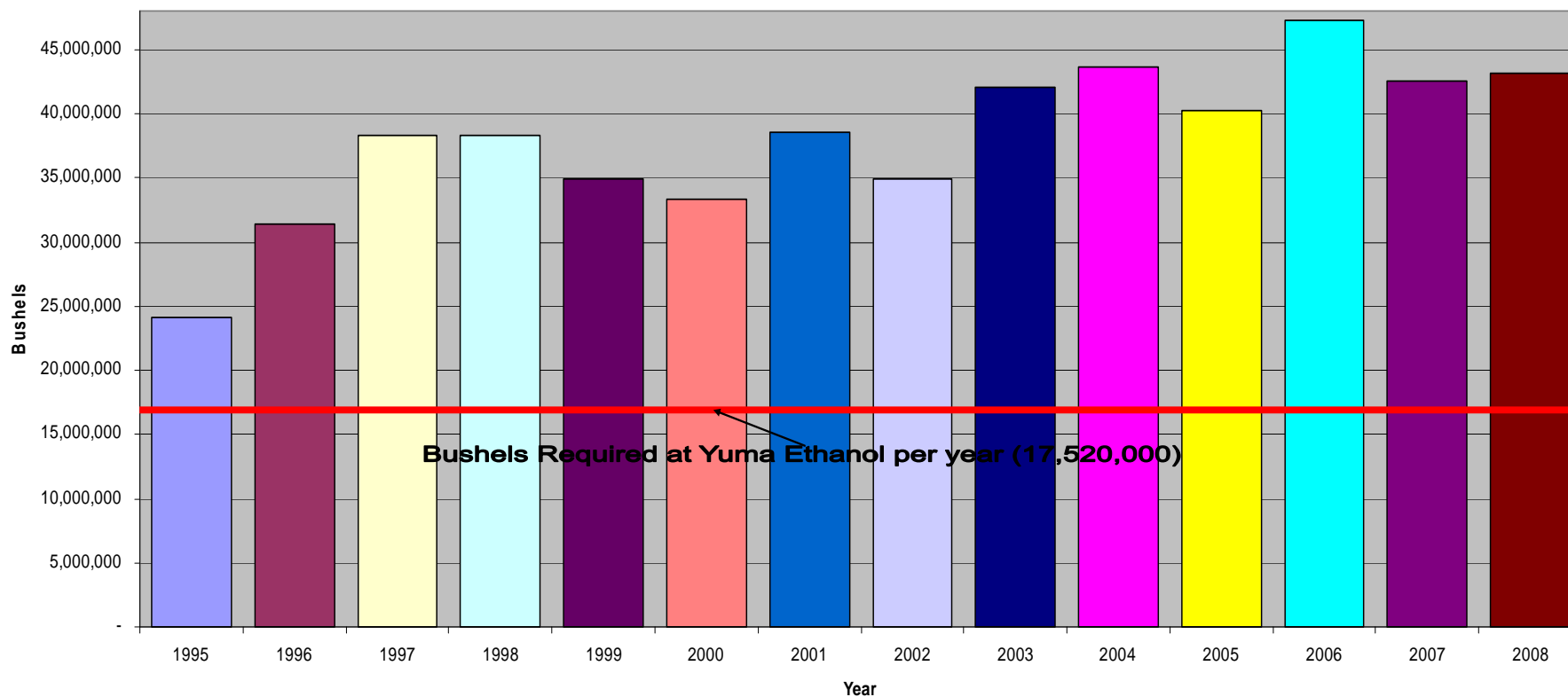
County Production and Use cont.

Logan County Corn Production



County Production and Use cont.

Yuma County Corn Production



County	Year	Production (bu)	Cattle Use (bu)	Hog Use (bu)	Ethanol Use (bu)	Difference
Logan	2001	9,350,000	21,734,100	n/a	n/a	(12,384,100)
Logan	2002	6,610,000	27,962,000	1,147,188	n/a	(22,499,188)
Logan	2003	7,195,000	23,704,150	n/a	n/a	(16,509,150)
Logan	2004	7,932,000	19,573,400	n/a	n/a	(11,641,400)
Logan	2005	8,199,000	20,081,800	n/a	2,555,000	(14,437,800)
Logan	2006	7,880,000	20,463,100	n/a	15,330,000	(27,913,100)
Logan	2007	9,838,000	19,573,400	752,930	15,330,000	(25,818,330)
Logan	2008	10,100,000	21,670,550	n/a	15,330,000	(26,900,550)
Yuma	2001	38,580,000	26,945,200	n/a	n/a	11,634,800
Yuma	2002	34,960,000	28,089,100	11,249,163	n/a	(4,378,263)
Yuma	2003	42,075,000	27,517,150	n/a	n/a	14,557,850
Yuma	2004	43,640,000	24,784,500	n/a	n/a	18,855,500
Yuma	2005	40,213,000	25,038,700	n/a	n/a	15,174,300
Yuma	2006	47,217,000	28,089,100	n/a	n/a	19,127,900
Yuma	2007	42,490,000	28,089,100	12,595,458	2,920,000	(1,114,558)
Yuma	2008	43,130,000	29,995,600	n/a	17,520,000	(4,385,600)
Washington	2001	6,990,000	5,465,300	n/a	n/a	1,524,700
Washington	2002	3,500,000	2,796,200	89,630	n/a	614,170
Washington	2003	4,470,000	5,084,000	n/a	n/a	(614,000)
Washington	2004	5,130,000	4,702,700	n/a	n/a	427,300
Washington	2005	4,420,000	5,084,000	n/a	n/a	(664,000)
Washington	2006	4,390,000	6,100,800	n/a	n/a	(1,710,800)
Washington	2007	5,810,000	6,164,350	84,190	n/a	(438,540)
Washington	2008	4,890,000	4,893,350	n/a	n/a	(3,350)
Phillips	2001	14,935,000	6,291,450	n/a	n/a	8,643,550
Phillips	2002	12,770,000	5,719,500	n/a	n/a	7,050,500
Phillips	2003	14,300,000	3,558,800	n/a	n/a	10,741,200
Phillips	2004	13,470,000	3,495,250	n/a	n/a	9,974,750
Phillips	2005	14,840,000	3,304,600	n/a	n/a	11,535,400
Phillips	2006	13,095,000	3,368,150	n/a	n/a	9,726,850
Phillips	2007	13,473,000	3,622,350	n/a	n/a	9,850,650
Phillips	2008	16,400,000	3,431,700	n/a	n/a	12,968,300
Sedgwick	2001	6,390,000	2,287,800	n/a	n/a	4,102,200
Sedgwick	2002	4,175,000	2,542,000	n/a	n/a	1,633,000
Sedgwick	2003	5,473,000	2,351,350	n/a	n/a	3,121,650
Sedgwick	2004	5,370,000	1,207,450	n/a	n/a	4,162,550
Sedgwick	2005	6,473,500	1,207,450	n/a	n/a	5,266,050
Sedgwick	2006	6,123,000	1,143,900	n/a	n/a	4,979,100
Sedgwick	2007	6,490,000	889,700	n/a	n/a	5,600,300

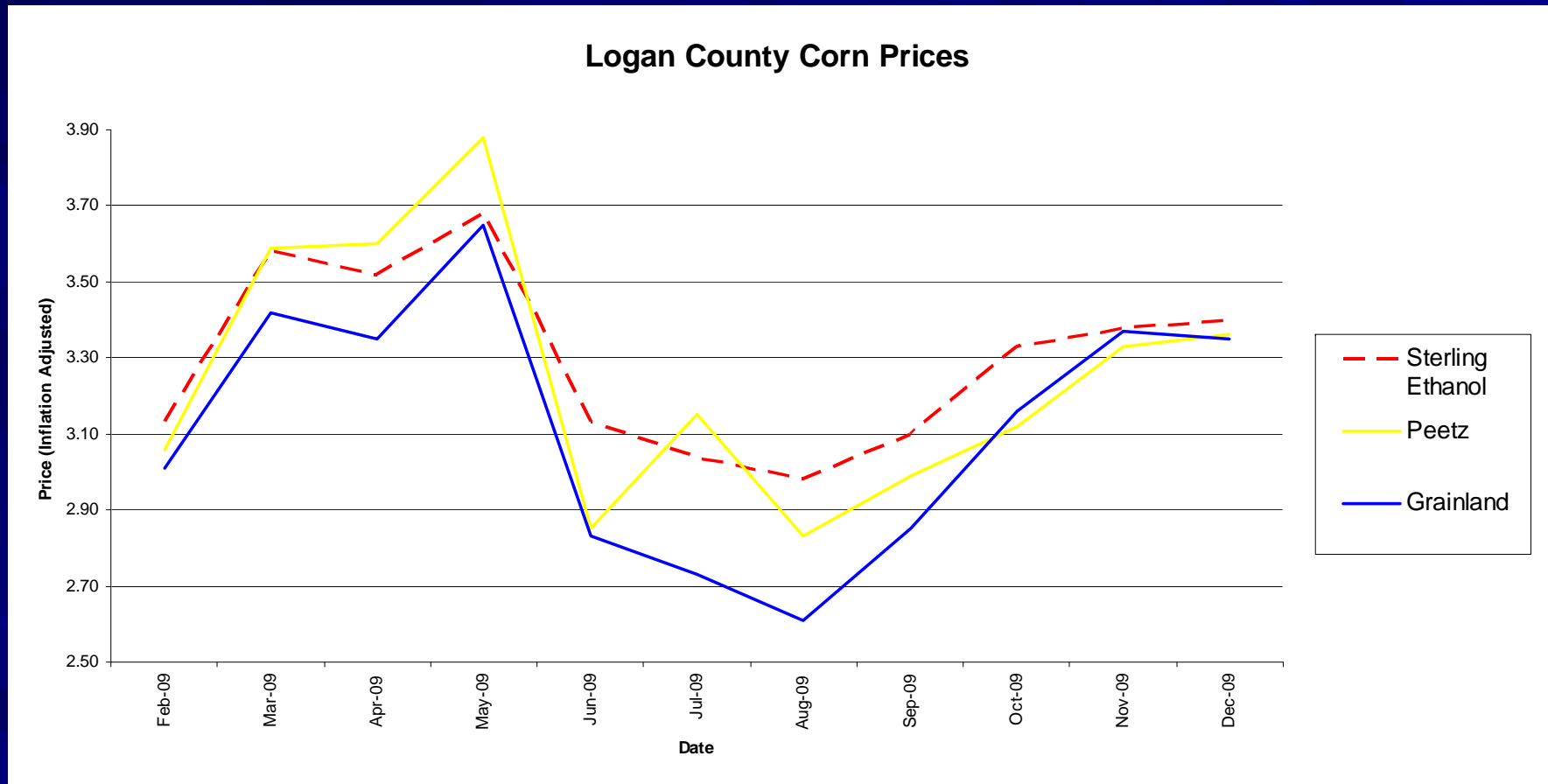
Corn Prices

- Average local historical price
 - \$2.86
 - Standard deviation of 0.75
- Average national historical price
 - \$2.71
 - Standard deviation of 0.79

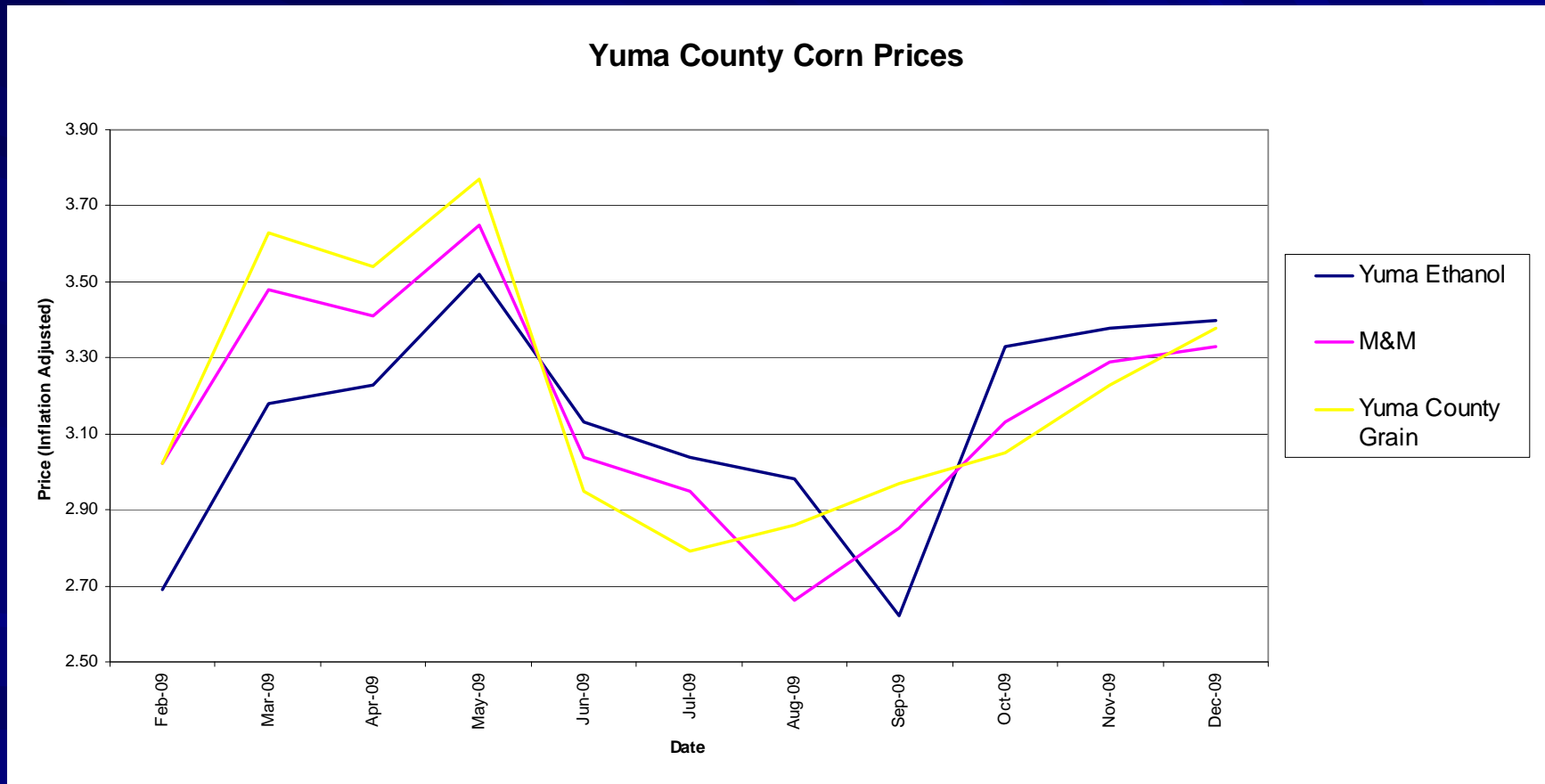
Corn Prices cont.

- Since ethanol plants opened prices have been above average prices
 - Sterling Ethanol, LLC
 - Opened when price was about \$1.84
 - Since opening price has increased
 - Starting to drop a little right now
 - Yuma Ethanol, LLC
 - Opened when price was about \$3.22
 - Price since opening same as Sterling Ethanol

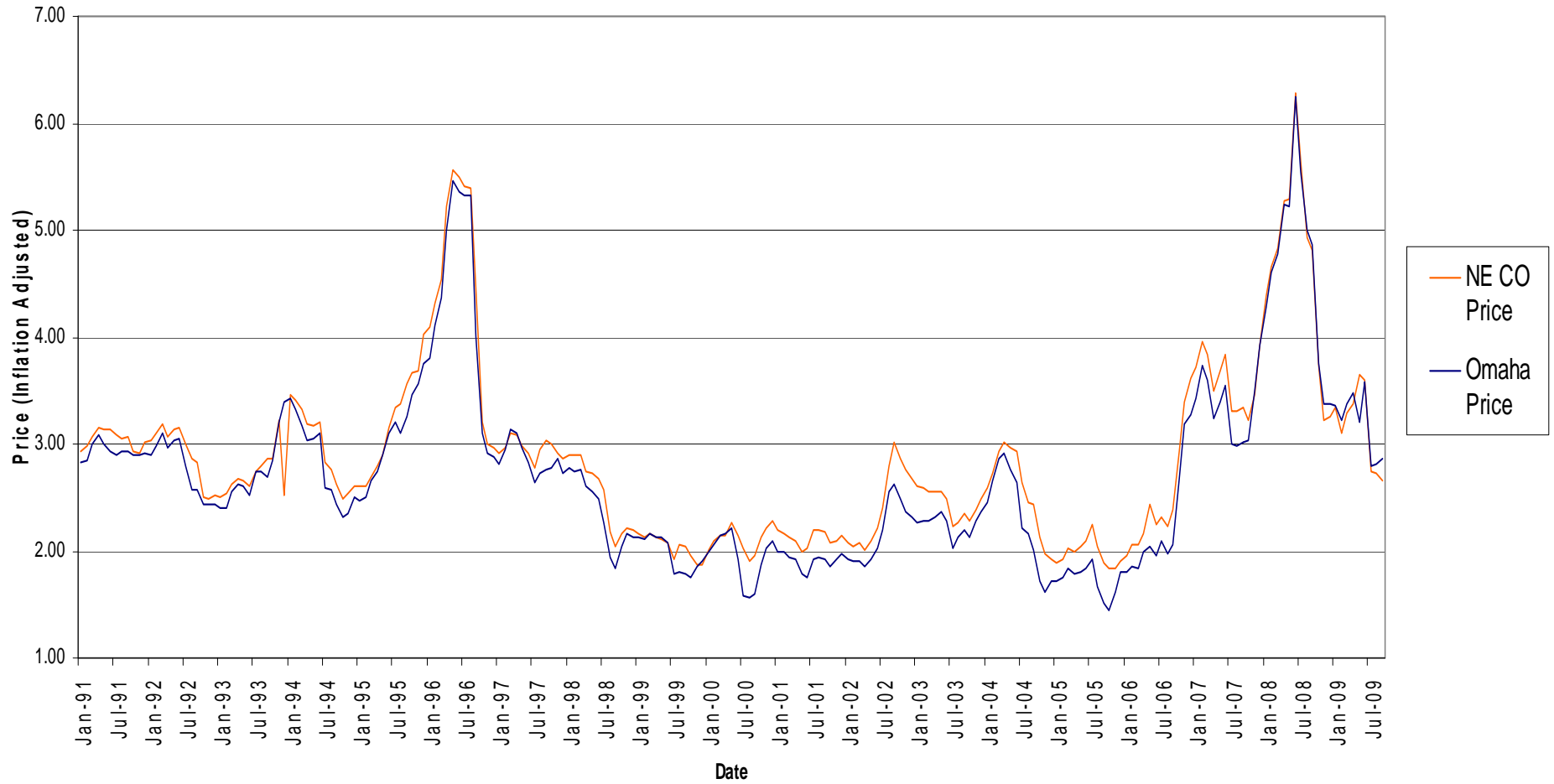
Corn Prices Cont.



Corn Prices cont.



Northeastern Colorado Corn Prices Compared to Omaha, Nebraska Corn Prices



Transportation Costs

- Vary depending on distance (Trucking)

- Local

- .10 - .20 (Logan County)

- .15 - .25 (Yuma County)

- Non-local

- Sterling to Fort Collins

- \$1.50/ running mile

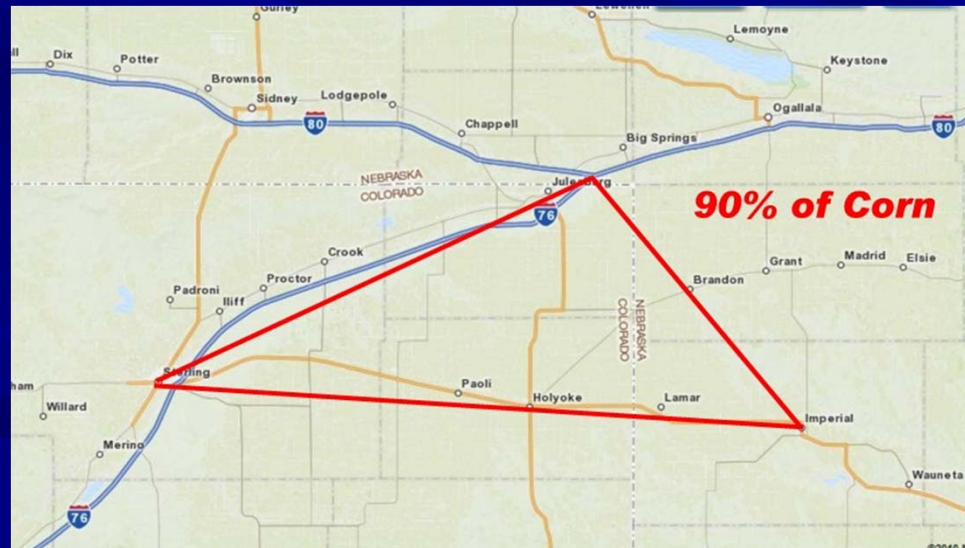
- \$3.00/ loaded mile

- .26 - .31 less for commodity

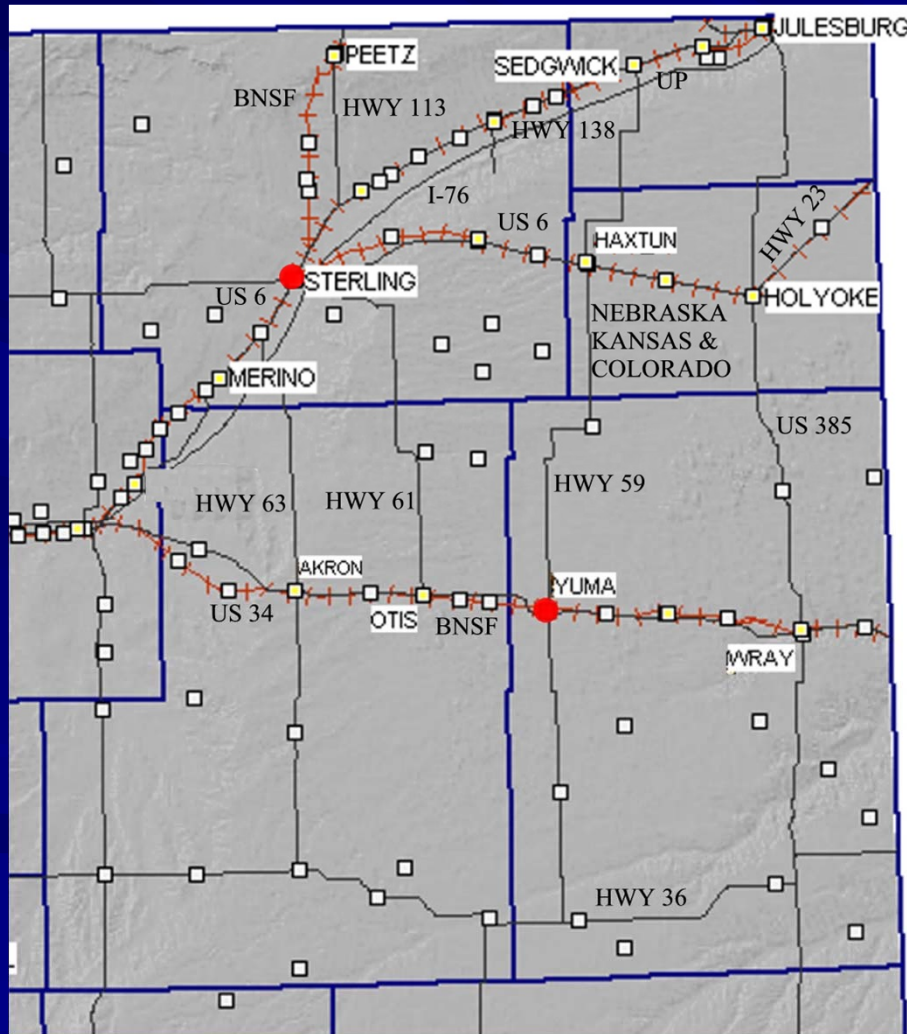


Transportation Costs cont.

- Cheaper to truck grain to ethanol plants than to pay railroad freight
 - Didn't get exact figures



Transportation Costs cont.



Conclusion

- Corn displaced from feedlots
 - Distillers grains taking place of corn in rations
 - More energy
 - Greater gains
 - Cheaper??
- Prices have seemed to increase since ethanol plants opened
 - Local market still following national market

Conclusion cont.

■ Further research

- Continue to look at corn prices
 - Will give a better understanding of how they act
- Get more data relevant to ethanol
 - Distillers grains prices
 - Production changes
 - Commodities
 - Ethanol



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"My great uncle produced a lot of ethanol but he couldn't sell it legally."

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Questions

