


**“The ABC’s & 123’s of LGM and LRP Insurance”  
2006 Crop Insurance Workshop, November 7-9, 2006  
Dr. Darrell R. Mark**

**The ABC’s & 123’s Of  
LGM and LRP Insurance**



**2006 Insurance Workshop  
November 7-9, 2006**

Darrell R. Mark, Ph.D  
Ext. Livestock Marketing Specialist  
University of Nebraska

dmark2@unl.edu  
agecon.unl.edu/mark

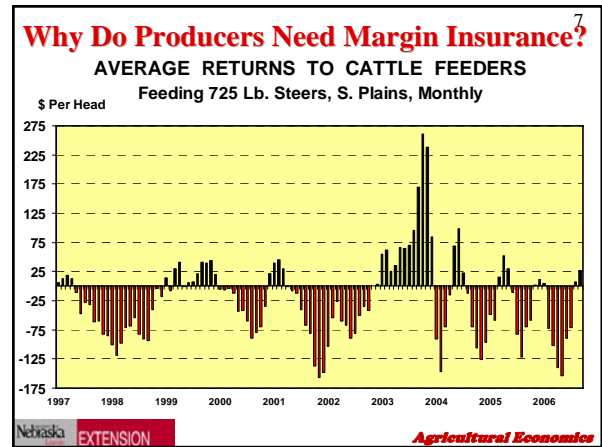
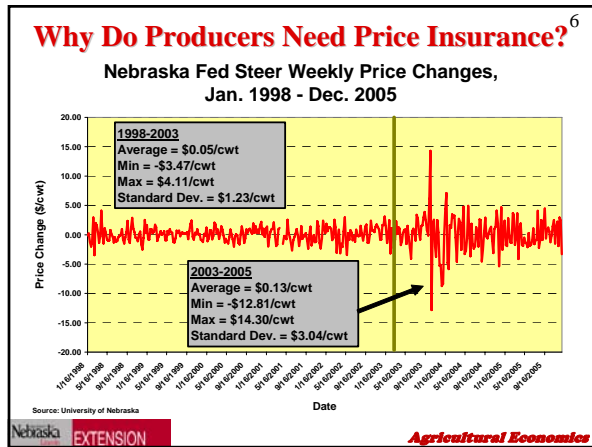
Nebraska EXTENSION Agricultural Economics

**Today’s Topics**

- Brief Overview of Livestock Risk Protection Insurance**
  - LRP is single-peril price insurance
- Livestock Gross Margin Insurance for Cattle**
  - LGM is cattle feeding profit margin insurance (doesn’t insure production losses)




Nebraska EXTENSION Agricultural Economics



**LRP is Price Risk Protection**

- Pays Producers If A Regional/National Cash Price Index Falls Below A Set Price
  - ✓ Does Not Guarantee A Cash Price Received
- Covers Feeder Cattle, Fed Cattle, & Swine



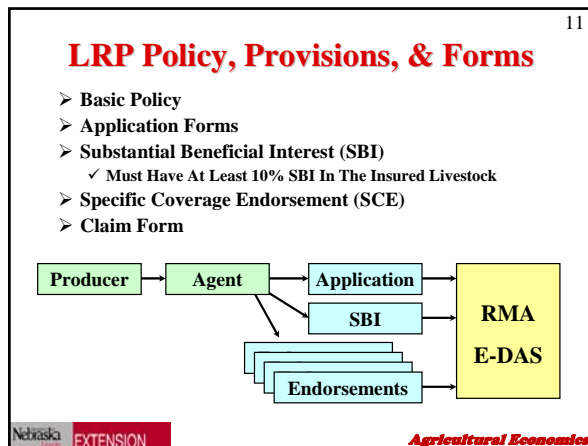
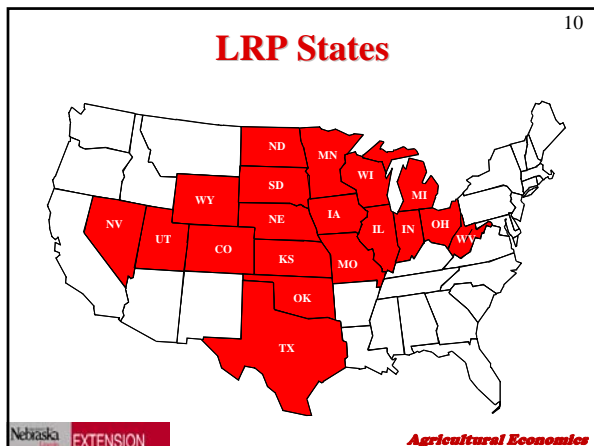
Nebraska EXTENSION Agricultural Economics

**Encourage Producers To Enroll**

- Once Enrolled, Producers Have The Right *But Not The Obligation* To Purchase Coverage
- Coverage Obtained With A Specific Coverage Endorsement (SCE)
- Livestock Has To Be In Eligible State
  - ✓ Owners Can Be In Other States

Nebraska EXTENSION Agricultural Economics

**“The ABC’s & 123’s of LGM and LRP Insurance”**  
**2006 Crop Insurance Workshop, November 7-9, 2006**  
**Dr. Darrell R. Mark**



- ### Coverage
- Coverage Available About 5pm To 9am CST
    - ✓ Available Sat Mornings Until 9am, But Not Sun, Mon, & Holidays
  - Coverage Initiated With Specific Coverage Endorsement (SCE)
    - ✓ No Limit On Number Of SCEs
  - Producers Have Flexibility On The:
    - ✓ Timing Of Purchase
    - ✓ Time Length Of The SCE
    - ✓ Number Of Head Covered
- 12
- Nebraska EXTENSION Agricultural Economics

- ### Eligible Livestock
- Feeder Cattle
    - ✓ Feeder Steers, Bulls, & Heifers < 600 lbs
    - ✓ Feeder Steers & Heifers From 600-900 lbs
    - ✓ Includes Dairy & Brahman Breeds
  - Fed Cattle
    - ✓ Steers & Heifers
    - ✓ Select Or Higher, Yield Grade 1-3
    - ✓ Weight: 1,000-1,400 lbs.
  - Swine
    - ✓ Market Hogs
    - ✓ Weight: 150-225 lbs (Carcass), 203-304 lbs (Live)
- 13
- Nebraska EXTENSION Agricultural Economics

### Limitations On Number Of Head Insured

	Swine	Fed Cattle	Feeder Cattle
Per SCE	10,000	2,000	1,000
Per Crop Year July 1-June 30	32,000	4,000	2,000

➤ Producer Must Own Covered Livestock Until 30 Days Prior To Coverage End Date

14

Nebraska EXTENSION Agricultural Economics

### Endorsement Lengths

Months	LRP Endorsement Lengths					
	LRP Fed Cattle		LRP Feeder Cattle		LRP Swine	
	Weeks	Actual Days	Weeks	Actual Days	Weeks	Actual Days
3	13	91	13	91	13	91
4	17	119	17	119	17	119
5	21	147	21	147	21	147
6	26	182	26	182	26	182
7	30	210	30	210		
8	34	238	34	238		
9	39	273	39	273		
10	43	301	43	301		
11	47	329	47	329		
12	52	364	52	364		

15

Nebraska EXTENSION Agricultural Economics



**“The ABC’s & 123’s of LGM and LRP Insurance”**  
**2006 Crop Insurance Workshop, November 7-9, 2006**  
**Dr. Darrell R. Mark**

**The Fed Cattle Hedge With LRP** 22

- On October 27, 2006, Producer Selects Fed Cattle LRP Policy With:
  - ✓ Expected Ending Value = \$91.075/cwt
  - ✓ Coverage Price = \$84.23/cwt
  - ✓ Cost = \$1.31/cwt (After 13% Subsidy)
  - ✓ End Date = February 23, 2007
- MESP = Coverage Price – Premium + LRP Basis
- MESP = \$84.23/cwt – \$1.31/cwt + -\$0.66/cwt
- MESP = \$82.26/cwt

Nebraska EXTENSION Agricultural Economics

MESP = CP + LRP Basis – Premium = \$84.23 + -\$0.66 - \$1.31 = \$82.26 23

Date	Cash	LRP Insurance	LRP Basis
8-27-2006	No action	Buy LRP With \$84.23/cwt Coverage Price For \$1.31/cwt EEV = \$91.075/cwt	Exp. 2-27 basis to be -\$0.66/cwt
2-27-2007	Sell 100 head of 1200 lb. steers @ \$79.34/cwt	LRP Indemnity (AEV < CP) = \$4.23/cwt AEV = \$80.00/cwt	Actual 2-27 basis is -\$0.66/cwt
	Cash price received = \$79.34/cwt	Net on LRP = \$2.92/cwt	Diff. b/w Act. & Exp. = \$0.00/cwt
ASP = \$79.34 + \$2.92 = \$82.26			

Nebraska EXTENSION Agricultural Economics

MESP = CP + LRP Basis – Premium = \$84.23 + -\$0.66 - \$1.31 = \$82.26 24

Date	Cash	LRP Insurance	LRP Basis
8-27-2006	No action	Buy LRP With \$84.23/cwt Coverage Price For \$1.31/cwt EEV = \$91.075/cwt	Exp. 2-27 basis to be -\$0.66/cwt
2-27-2007	Sell 100 head of 1200 lb. steers @ \$89.34/cwt	LRP Indemnity (AEV > CP) = \$0.00/cwt AEV = \$90.00/cwt	Actual 2-27 basis is -\$0.66/cwt
	Cash price received = \$89.34/cwt	Net on LRP = -\$1.31/cwt	Diff. b/w Act. & Exp. = \$0.00/cwt
ASP = \$89.34 + -\$1.31 = \$88.03			

Nebraska EXTENSION Agricultural Economics

**What Were The Alternatives To This LRP Hedge?** 25

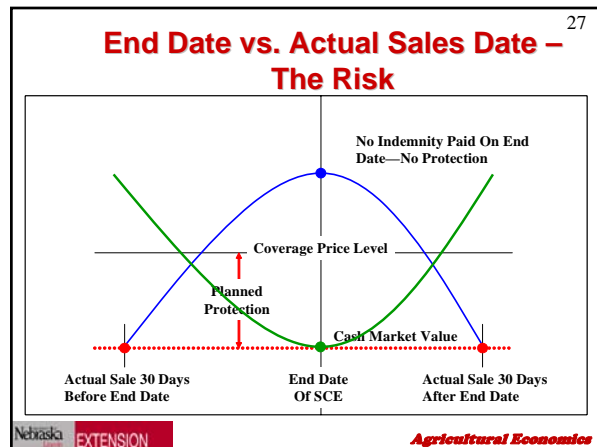
- Futures Hedging
  - ✓ 10/27/06 – Feb 07 LC Futures = \$91.68/cwt
  - ✓ Adjust For Basis
  - ✓ Higher Protected Price
  - ✓ Maximum Price Also Established
- Options Hedging—Buying Puts
  - ✓ Adjust For Basis
  - ✓ Establishes Minimum Price, No Maximum Price

Nebraska EXTENSION Agricultural Economics

**Termination Of Coverage** 26

- If Any Portion Of Insured Livestock Is Disposed Of Prior To Last 30 Days Of Coverage, Then
  - ✓ That Portion Of The Coverage Will Terminate
  - ✓ No Indemnity Will Be Paid For That Portion
  - ✓ No Premium For That Portion Will Be Refunded
- An Exception Is Allowed For Transfer Of Coverage

Nebraska EXTENSION Agricultural Economics



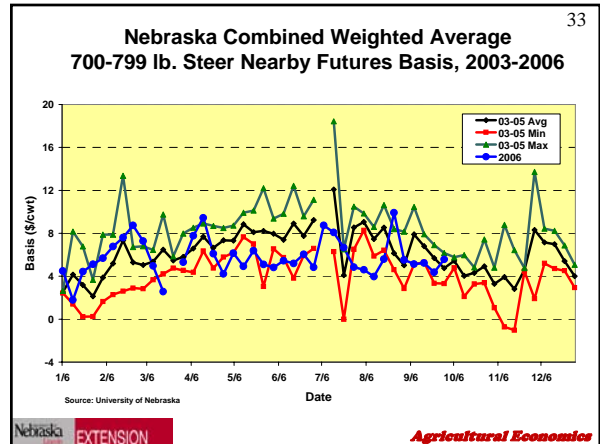
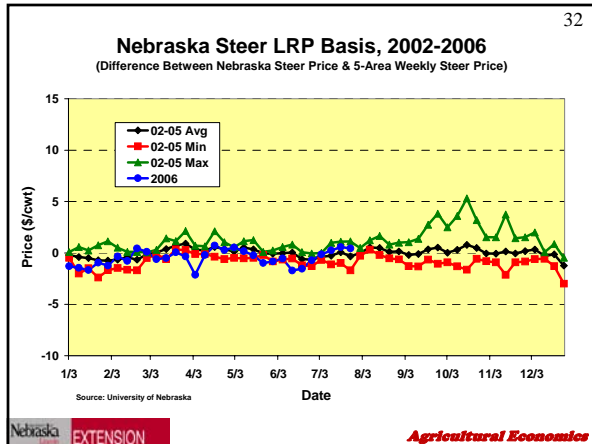
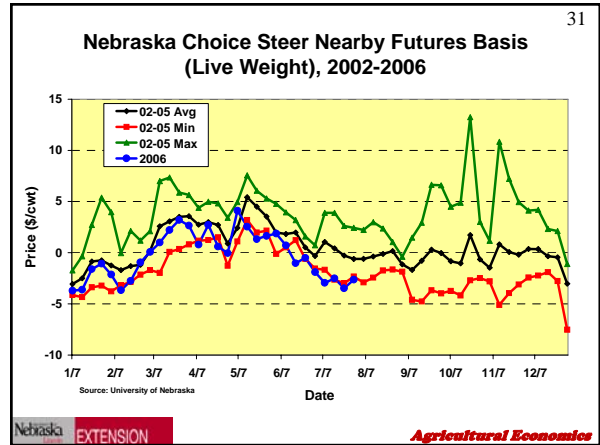
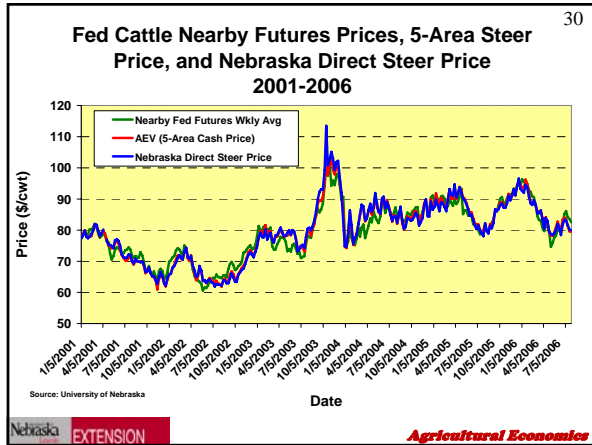
**“The ABC’s & 123’s of LGM and LRP Insurance”**  
**2006 Crop Insurance Workshop, November 7-9, 2006**  
**Dr. Darrell R. Mark**

**Change In AEV Relative To 30 Days Ago (2001-2005)** 28

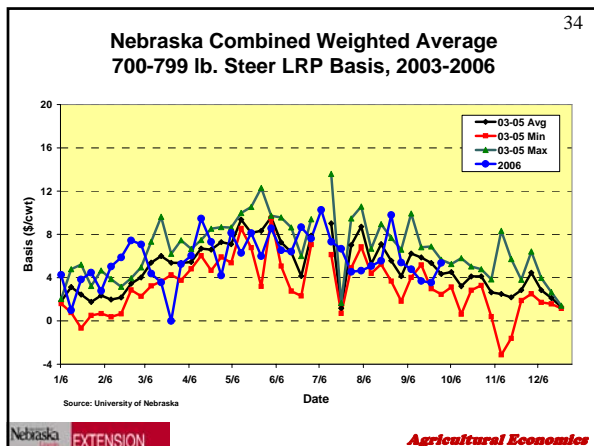
	Average (\$/cwt)	Largest Decrease (\$/cwt)	Largest Increase (\$/cwt)
Swine AEV (CME Index)	-0.09	19.10	16.14
Fed Cattle AEV (5-Area Price)	0.05	25.56	18.57
Feeder Cattle AEV (CME Index)	0.43	15.26	10.01

Nebraska EXTENSION Agricultural Economics

- Basis To Consider For LRP** 29
- **Futures Basis = Local Cash Price – Futures Price**
  - **LRP Basis = Local Cash Price – AEV**
    - ✓ Difference Between Local Selling Price & Actual Ending Value Of LRP Insurance Contract
  - **AEV**
    - ✓ Feeder Cattle – CME Feeder Cattle Cash Index
    - ✓ Fed Cattle – 5 Area Weighted Avg Weekly Steer Price
    - ✓ Swine – CME Lean Hog Cash Index (2-Day Volume Weighted Avg Of Negotiated & Swine/Pork Market Formula Price)
- Nebraska EXTENSION Agricultural Economics



**“The ABC’s & 123’s of LGM and LRP Insurance”**  
**2006 Crop Insurance Workshop, November 7-9, 2006**  
**Dr. Darrell R. Mark**



**Basis Risk Reduction With LRP**

- Swine and Fed Cattle Get Biggest Reduction In Basis Risk
- Little Basis Risk Reduction For Feeder Cattle

Nebraska EXTENSION Agricultural Economics

**LRP Benefits for Producers**

- **Guaranteed Cost & Coverage**
  - ✓ Set For Day & No Bid/Ask Spread
- “After Hours” Price Protection
- No Commission Costs, Brokerage Accounts
- **Partial Basis Risk Coverage**
  - ✓ Indemnifies On A Cash Index
- Any Number Of Head Can Be Covered
  - ✓ Even 1 Head (Up To Program Limits)
- LRP Is An Insurance Policy & Not A Derivative (Preferred By Bankers)

Nebraska EXTENSION Agricultural Economics

**LRP Disadvantages**

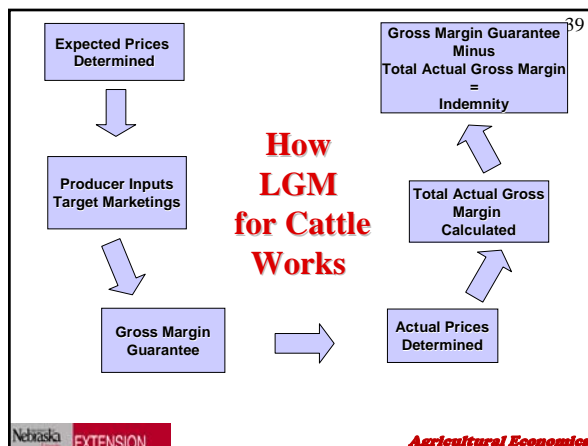
- Some Basis Risk Still Exists
- Policy Settled On Ending Date Regardless Of When Livestock Ready For Market
- Options May Be Sold Prior To Expiration Date If Livestock Sold Or Price Opportunity Exists
- Offsetting Transactions Restrictions Could Limit Common Marketing Strategies

Nebraska EXTENSION Agricultural Economics

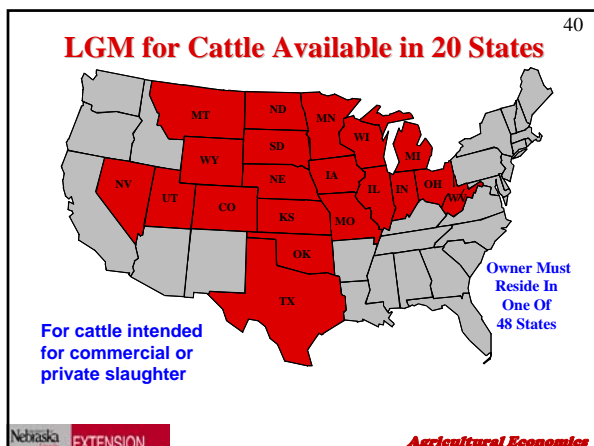
**Livestock Gross Margin Insurance  
For Cattle**

- Offers protection against decline in feeding margin
- Gross Margin = Market value of cattle less feeder cattle and corn costs

Nebraska EXTENSION Agricultural Economics

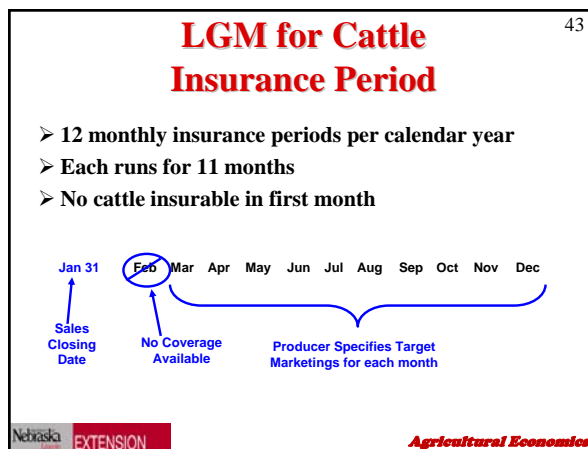


**“The ABC’s & 123’s of LGM and LRP Insurance”  
2006 Crop Insurance Workshop, November 7-9, 2006  
Dr. Darrell R. Mark**



- LGM for Cattle Available For:** 41
- **Yearling Finishing Operation**
    - ✓ Finished weight = 1250 lbs
    - ✓ In-weight = 750 lbs
    - ✓ 5 months on feed
    - ✓ Corn price = price 2 months prior to cattle finished sales month
  - **Calf Finishing Operation**
    - ✓ Finished weight = 1150 lbs
    - ✓ In-weight = 550 lbs
    - ✓ 8 months on feed
    - ✓ Corn price = price 4 months prior to cattle finished sales month
- Nebriaska EXTENSION Agricultural Economics

- LGM Sales Period** 42
- Sold on last business day of every month
    - ✓ RMA must first validate price data used to calculate Gross Margin Guarantee (GMG)
    - ✓ Validation occurs after the futures market closes on last day of price discovery period
  - Sale period ends at 9:00 am CST the next business day
- Substantial Beneficial Interest**
- Owner must have 10% interest in livestock to constitute substantial beneficial interest
- Nebriaska EXTENSION Agricultural Economics



**LGM Limitations on Number of Head Insured** 44

Per Insurance Period	5,000
Per Crop Year July 1-June 30	10,000

Nebriaska EXTENSION Agricultural Economics

- LGM Premium** 45
- Determined by simulation of losses
  - Calculated using RMA’s online calculator
    - ✓ <http://www3.rma.usda.gov/apps/premcalc/>
    - ✓ Need a user id and password
- Nebriaska EXTENSION Agricultural Economics

**“The ABC’s & 123’s of LGM and LRP Insurance”  
2006 Crop Insurance Workshop, November 7-9, 2006  
Dr. Darrell R. Mark**

46

### LGM Deductibles

- \$0 to \$150 per head at the insured’s option
  - ✓ In \$10 per head increments

Nebraska EXTENSION Agricultural Economics

47

### LGM Indemnity

- Difference between the Gross Margin Guarantee (GMG) and Total Actual Gross Margin (AGM), if positive, at the end of the insurance period
- LGM for Cattle uses adjusted futures prices to determine expected and actual gross margins
  - ✓ Includes state- and month-specific basis levels

Nebraska EXTENSION Agricultural Economics

48

### LGM Example

- January 31, 2006 sales closing date
- Yearling finishing operation in Nebraska
- August 2006 target marketing month
- Determine the indemnity that would be due to producers for that month
  - ✓ Total indemnity determined based on sum of target marketings in 11-month insurance period

Nebraska EXTENSION Agricultural Economics

49

### Expected Gross Margin (EGM)

- Yearling Finishing Operation
  - $EGM_t = (12.50 \text{ cwt} \times \text{Live Cattle Price}_t) - (7.50 \text{ cwt} \times \text{Feeder Cattle Price}_{t-2}) - (57.5 \text{ bu} \times \text{Corn Price}_{t-2})$
- Calf Finishing Operation
  - $EGM_t = (11.50 \text{ cwt} \times \text{Live Cattle Price}_t) - (5.50 \text{ cwt} \times \text{Feeder Cattle Price}_{t-8}) - (54.5 \text{ bu} \times \text{Corn Price}_{t-4})$

Nebraska EXTENSION Agricultural Economics

50

### Expected Live Cattle Price

- Expected August Live Cattle Price as of Jan
  - August 2006 CME LC Futures Price:
    - 1-27 \$84.475
    - 1-30 \$84.10
    - 1-31 \$84.375
    - 3-day Ave \$84.32
  - Nebraska August LC Basis (LGM) = \$1.20
  - Expected August LC Price = \$84.32 + \$1.20
  - Expected August LC Price = \$85.52/cwt

Nebraska EXTENSION Agricultural Economics

51

### Expected Feeder Cattle Price

- Expected March Feeder Cattle Price
  - March 2006 CME FC Futures Price:
    - 1-27 \$110.625
    - 1-30 \$109.75
    - 1-31 \$109.825
    - 3-day Ave \$110.07
  - Nebraska March FC Basis (LGM) = \$4.63
  - Expected March FC Price = \$110.07 + \$4.63
  - Expected March FC Price = \$114.70/cwt

Nebraska EXTENSION Agricultural Economics

**“The ABC’s & 123’s of LGM and LRP Insurance”  
2006 Crop Insurance Workshop, November 7-9, 2006  
Dr. Darrell R. Mark**

52

### Expected Corn Price

- Expected June Corn Price
  - May 2006 CBOT Corn Futures Price:
    - 1-27      \$2.285
    - 1-30      \$2.2775
    - 1-31      \$2.29
    - 3-day Ave   \$2.28
  - July 2006 CBOT Corn Futures Price:
    - 1-27      \$2.375
    - 1-30      \$2.365
    - 1-31      \$2.38
    - 3-day Ave   \$2.37

Nebraska EXTENSION Agricultural Economics

53

### Expected Corn Price

- Expected June corn price (a weighted average)
  - = (1/2 x Expected May Corn Futures Price)
  - + (1/2 x Expected July Corn Futures Price)
  - = (1/2 x \$2.28/bu) + (1/2 x \$2.37/bu)
  - = \$2.33/bu
  - Nebraska June Corn Basis (LGM) = **-\$0.18**
- Expected June Corn Price = **\$2.33 + (-\$0.18)**
- Expected June Corn Price = **\$2.15/bu**

Nebraska EXTENSION Agricultural Economics

54

### Expected Gross Margin (EGM)

- Yearling Finishing Operation
  - $EGM_{Aug} = (12.50 \text{ cwt} \times \text{Exp Live Cattle Price}_{Aug})$   
     - (7.50 cwt X Exp Feeder Cattle Price<sub>Mar</sub>)  
     - (57.5 bu X Exp Corn Price<sub>Jun</sub>)
  - $EGM_{Aug} = (12.50 \text{ cwt} \times \$85.52/\text{cwt})$   
     - (7.50 cwt X \$114.70/cwt)  
     - (57.5 bu X \$2.15/bu)
  - $EGM_{Aug} = \$1069.00 - \$860.25 - \$123.625$
  - $EGM_{Aug} = \$85.13$

Nebraska EXTENSION Agricultural Economics

55

### Gross Margin Guarantee (GMG)

- GMG = EGM – Deductible
- Deductible
  - \$0 to \$150 per head at the insured’s option
  - Let’s use a \$20/head deductible
- GMG = \$85.13 – \$20
- GMG = **\$65.13**

Nebraska EXTENSION Agricultural Economics

56

### Actual Gross Margin (AGM)

- Yearling Finishing Operation
  - $AGM_{Aug} = (12.50 \text{ cwt} \times \text{Act Live Cattle Price}_{Aug})$   
     - (7.50 cwt X Act Feeder Cattle Price<sub>Mar</sub>)  
     - (57.5 bu X Act Corn Price<sub>Jun</sub>)

Nebraska EXTENSION Agricultural Economics

57

### Actual Live Cattle Price

- Actual August Live Cattle Price
  - August 2006 CME LC Futures Price:
    - 8-28      \$89.325
    - 8-29      \$89.40
    - 8-30      \$89.875
    - 3-day Ave   \$89.53
  - Nebraska August LC Basis (LGM) = **\$1.20**
- Actual August LC Price = **\$89.53 + \$1.20**
- Actual August LC Price = **\$90.73/cwt**

*Note: A yellow thought bubble contains the text "Expected LC Futures = \$84.32" with a line pointing to the 8-30 futures price. A speech bubble next to it says "Same".*

Nebraska EXTENSION Agricultural Economics

**“The ABC’s & 123’s of LGM and LRP Insurance”**  
**2006 Crop Insurance Workshop, November 7-9, 2006**  
**Dr. Darrell R. Mark**

58

### Actual Feeder Cattle Price

- Actual March Feeder Cattle Price
  - March 2006 CME FC Futures Price:
    - 3-27 \$103.425
    - 3-28 \$103.725
    - 3-29 \$103.50
    - 3-day Ave \$103.55
  - Nebraska March FC Basis (LGM) = \$4.63
- Actual March FC Price = \$103.55 + \$4.63
- Actual March FC Price = **\$108.18/cwt**

*Note: A callout bubble shows 'Expected FC Futures = \$110.07' with a 'Same' bubble pointing to the 3-day average price.*

Nebraska EXTENSION Agricultural Economics

59

### Actual Corn Price

- Actual June Corn Price
  - May 2006 CBOT Corn Futures Price:
    - 5-9 \$2.285
    - 5-10 \$2.30
    - 5-11 \$2.3775
    - 3-day Ave \$2.32
  - July 2006 CBOT Corn Futures Price:
    - 7-11 \$2.5375
    - 7-12 \$2.5925
    - 7-13 \$2.525
    - 3-day Ave \$2.55

Nebraska EXTENSION Agricultural Economics

60

### Actual Corn Price

- Actual June corn price (a weighted average)
  - $(1/2 \times \text{Actual May Corn Futures Price})$
  - $+ (1/2 \times \text{Actual July Corn Futures Price})$
  - $(1/2 \times \$2.32/\text{bu}) + (1/2 \times \$2.55/\text{bu})$
  - = \$2.44/bu
  - Nebraska June Corn Basis (LGM) = **-\$0.18**
- Actual June Corn Price = \$2.44 + (-\$0.18)
- Actual June Corn Price = **\$2.26/bu**

*Note: A callout bubble shows 'Expected Corn Futures = \$2.15' with a 'Same' bubble pointing to the weighted average price.*

Nebraska EXTENSION Agricultural Economics

61

### Actual Gross Margin (AGM)

- Yearling Finishing Operation
  - $\text{AGM}_{\text{Aug}} = (12.50 \text{ cwt} \times \text{Act Live Cattle Price}_{\text{Aug}})$
  - $- (7.50 \text{ cwt} \times \text{Act Feeder Cattle Price}_{\text{Mar}})$
  - $- (57.5 \text{ bu} \times \text{Act Corn Price}_{\text{Jun}})$
  - $\text{AGM}_{\text{Aug}} = (12.50 \text{ cwt} \times \$90.73/\text{cwt})$
  - $- (7.50 \text{ cwt} \times \$108.18/\text{cwt})$
  - $- (57.5 \text{ bu} \times \$2.26/\text{bu})$
  - $\text{AGM}_{\text{Aug}} = \$1134.125 - \$811.35 - \$129.95$
  - $\text{AGM}_{\text{Aug}} = \$192.83$

Nebraska EXTENSION Agricultural Economics

62

### Indemnity

- Indemnity = GMG – AGM (if positive)
- Indemnity = \$65.13 - \$192.83 < 0
- Indemnity = \$0 per head
- NO INDEMNITY PAID!!!

*Note: A green arrow points from the calculation to the final result.*

Nebraska EXTENSION Agricultural Economics

63

### Important Note...

- This example assumes only target marketings in August for the whole 11-month insurance period
- EGMs & AGMs are multiplied by target marketings each month and summed
  - ✓ Indemnities are paid for the 11-month period according to:
    - Total EGM – Total AGM if positive
- This effectively averages margins over the 11-month period

Nebraska EXTENSION Agricultural Economics

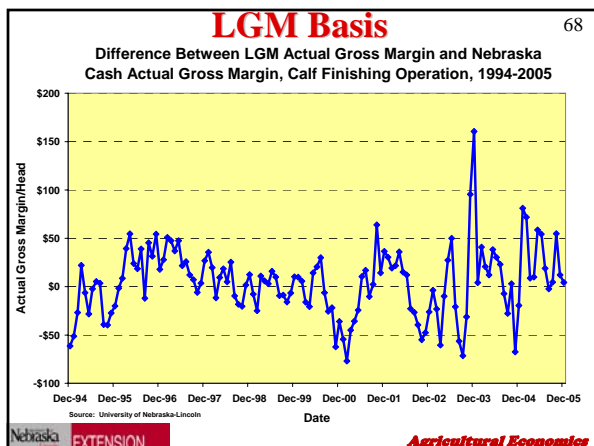
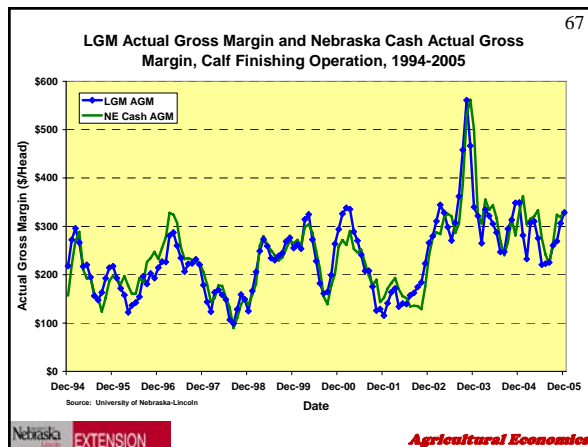
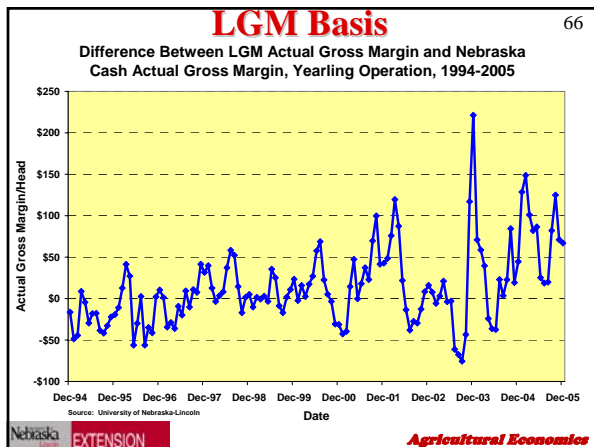
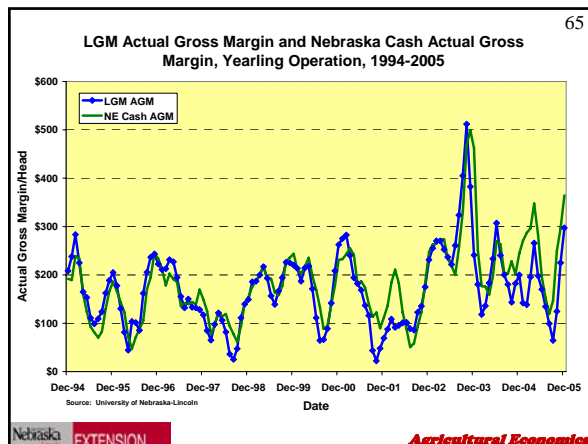
**“The ABC’s & 123’s of LGM and LRP Insurance”**  
**2006 Crop Insurance Workshop, November 7-9, 2006**  
**Dr. Darrell R. Mark**

64

### There Is A Basis Issue...

- LGM indemnities determined based on futures prices and fixed basis
- Producers will realize a different basis for fed cattle, feeder cattle, and corn than the LGM basis (which is derived from 10-year historical NASS cash prices)
  - ✓ Producers’ realized AGM is different than LGM’s AGM
- LGM’s margins don’t account for differences in feed amounts and other costs
  - ✓ LGM doesn’t insure net feeding profits

Nebraska EXTENSION Agricultural Economics



69

### LGM Benefits for Producers

- Convenience
  - ✓ Producers can sign up 12 times per year and insure all of the cattle they expect to market over a rolling 11-month insurance period
  - ✓ Do not have to decide on the mix of options to purchase, the strike price of the options, or the date of entry into various option contracts
- Customization
  - ✓ Can be tailored to any size farm
- Partial basis risk coverage

Nebraska EXTENSION Agricultural Economics

**“The ABC’s & 123’s of LGM and LRP Insurance”**  
**2006 Crop Insurance Workshop, November 7-9, 2006**  
**Dr. Darrell R. Mark**

70

## LGM Disadvantages

- Does not insure against:
  - ✓ Unexpected changes in basis
  - ✓ Death loss
  - ✓ Other production loss
  - ✓ Other costs
    - Energy??

Nebbraska EXTENSION *Agricultural Economics*

71

## More Information On Livestock Insurance



The screenshot shows the Nebraska LRP website. At the top, it says "Nebraska LRP Livestock Risk Protection Insurance". Below that is a navigation bar with "Home LRP", "Tools", "Links", "Resources", and "Contact". A "Quick Links" section includes "Home LRP", "Tools", "Links", "Resources", and "Contact". A "2005 LRP Home Study Guide" is featured, with a description: "Take advantage of the LRP Home Study Guide to get comprehensive information about the LRP insurance program. Materials are available from the program's experts in the program with able presentation and video reviews to support the individual records." There are also sections for "LRP questions" and "LRP News". A large yellow watermark "www.lrp.unl.edu" is overlaid on the page. Logos for RMA, Brownfield, and other partners are visible at the bottom.

Nebbraska EXTENSION *Agricultural Economics*