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Livestock Risk Protection (LRP) Insurance: Applications and Challenges

OUTLINE OF DISCUSSION

- Mechanics of LRP Insurance
- LRP in practice: an application
- Some things I like / don't like
- LRP as part of a broader risk management plan
- Best practices for price risk management



A LITTLE BIT ABOUT ME...

Cattle Market Notes Weekly

Josh Maples



James Mitchell



Kenny Burne

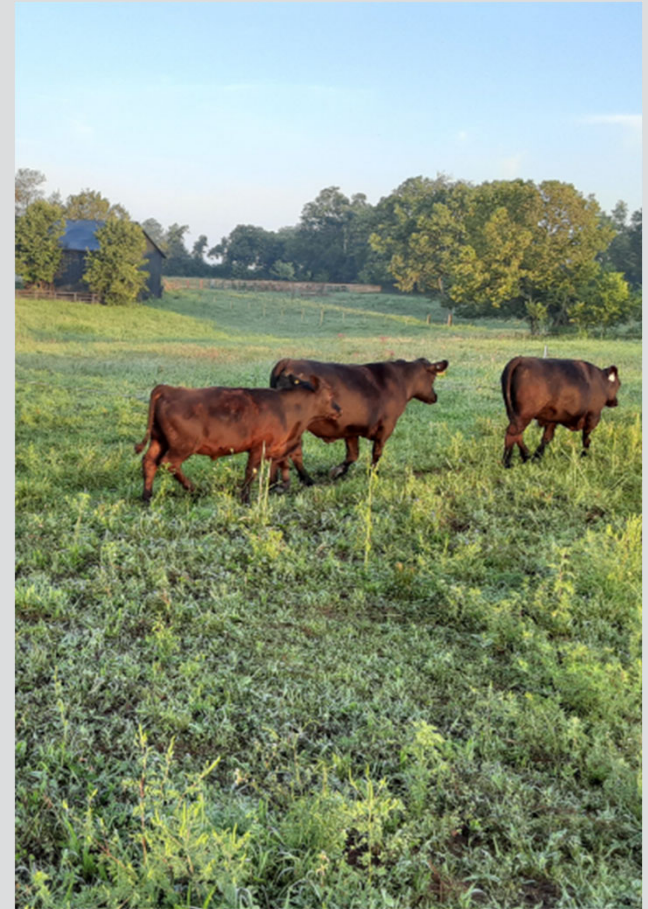


- KY native
- Tobacco / livestock background
- Extension Livestock economist for 25 years
- A lot of traveling / writing
- Farm a bit on side



BACKGROUND ON THE PROGRAM AND ITS USE

- Historically limited risk management tools for cattle
- Limited contracting in Southeast
- Futures / options have challenges
- Internet sales with delayed delivery
- LRP was first real option for smaller operations

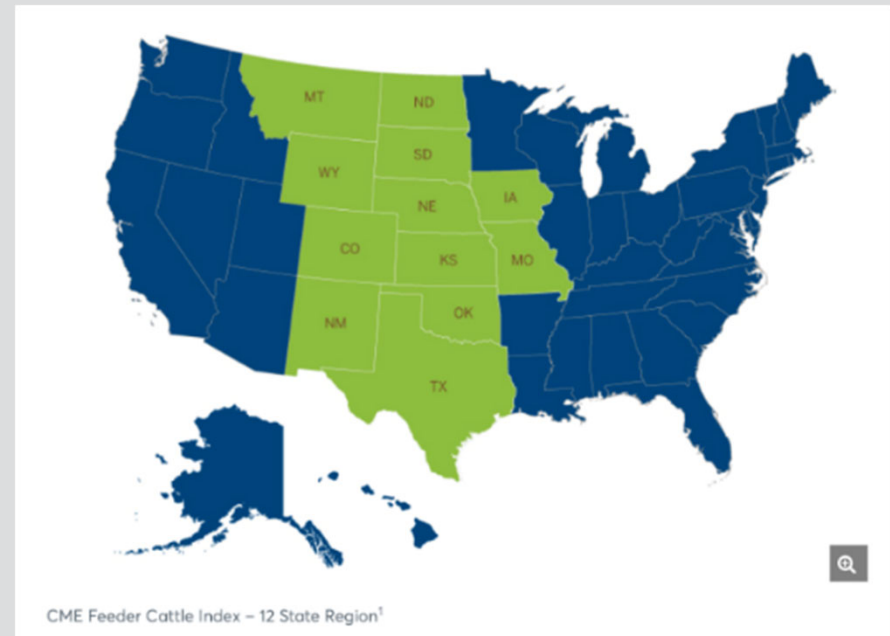


THE BASICS OF LRP INSURANCE

- LRP is a subsidized insurance product to protect against falling cattle prices
- Payouts (indemnities) are based on price changes in the CME feeder cattle index
 - Same index that settles futures, not what you sell cattle for!
- Producers choose how much protection they want in the form of “coverage levels”
- Works very similar to a put option to establish price floor

WHAT IS THE CME© FEEDER CATTLE INDEX

- 7-day moving average of feeder cattle prices in 12 states
- Medium / Large Frame #1-2 Steers - 700-900 lbs
 - No thin, fleshy, dairy, etc.
- LRP works to extent that this index moves with local prices
 - Basis should be considered



HOW DOES IT WORK

- Available through many types of insurance agents
 - USDA-RMA has agent locator tool
 - Premium will be the same
- Each policy has an ending date and an expected ending value
 - This is for the CME© index (will be very close to futures)
- Choose ending date near when cattle will be sold
- Index < coverage level on ending date - indemnity is due on each lb covered

LRP HAS GOTTEN MUCH MORE POPULAR

- Subsidy increase
- Payment due after ending date
- Can sell up to 60 days before end date
- Increased maximum # of head
- Larger operations are using it



LET'S CONSIDER A BACKGROUNDING SCENARIO

- Place 500 lb steer in October
 - \$280 per cwt
- 3-way blend / grass hay ration (\$240 / \$100 per ton) – 3% BW
- 2.5 lbs per day over 120 days
- Sell 800 lb steers in February
- March Futures: \$240*
 - \$5 under basis estimate
 - Expected sale price: \$235 per cwt



SIMPLE BUDGET

Sales	# units	unit	price / unit	total
Feeder	800	lbs	\$2.35	\$1,880
Expenses				
Weaned Calf	500	lbs	\$2.80	\$1,400
Hay	1,170	lbs	\$0.05	\$53
3-way blend	1,170	lbs	\$0.12	\$140
Feed 2	0	lbs	\$0.00	\$0
Mineral	0.25	lbs / day	\$0.40	\$12
Vet / Med	1	head	\$30.00	\$30
Sale Expenses	1	head	\$30.00	\$30
Hauling	1	head	\$15.00	\$15
Other	1	head	\$10.00	\$10
Interest	8.0%	rate		\$40
Death loss	2%			\$29
Total Expenses				\$1,759
Return to Land, Capital and Management				\$121



Photo: Dustin Hayes

LRP POLICY ILLUSTRATION: 800 LB STEERS

- Ending date: mid-February 2023
- Expected Ending Value: \$240 per cwt
- Selected available coverage levels
 - \$238 for \$6 per cwt: \$48 per head, \$2 per cwt deductible
 - \$234 for \$4 per cwt: \$32 per head, \$6 per cwt deductible
 - \$226 for \$2 per cwt: \$16 per head, \$14 per cwt deductible

Premium paid on lbs covered – premium per cwt X 800 lbs

SIMPLE LRP SCENARIO

- Plan to sell feeder steers in February weighing 800 lbs
 - Worried market will drop between now and then
- Purchase LRP policy with February ending date
 - Expected ending value: **\$240** (CME Index)
 - Buy a **\$234** coverage level for \$4 per cwt (\$32 per head)
- Basis estimate – \$5 under for 800 lb steers?
- Estimated price floor around **\$229, minus \$4 per cwt premium**

BUDGET WITH LRP

Sales	# units	unit	price / unit	total
Feeder	800	lbs	\$2.35	\$1,880
Expenses				
Weaned Calf	500	lbs	\$2.80	\$1,400
Hay	1,170	lbs	\$0.05	\$53
3-way blend	1,170	lbs	\$0.12	\$140
Feed 2	0	lbs	\$0.00	\$0
Mineral	0.25	lbs / day	\$0.40	\$12
Vet / Med	1	head	\$30.00	\$30
Sale Expenses	1	head	\$30.00	\$30
Hauling	1	head	\$15.00	\$15
Other	1	head	\$10.00	\$10
LRP Premium	1	head	\$32.00	\$32.00
Interest	8.0%	rate		\$40
Death loss	2%			\$29
Total Expenses				\$1,791
Return to Land, Capital and Management				\$89



PRICES RISE SIGNIFICANTLY

- LRP ending value ends up being \$260 per cwt (\$20 more than expected)
- You sell your steers for \$255 per cwt (\$2,040 per head)
- You spent \$4 per cwt on LRP insurance (\$32 per head)
- Best case scenario – purchased insurance and market improved

RETURNS – RISING PRICES

Sales	# units	unit	price / unit	total
Feeder	800	lbs	\$2.55	\$2,040
Expenses				
Weaned Calf	500	lbs	\$2.80	\$1,400
Hay	1,170	lbs	\$0.05	\$53
3-way blend	1,170	lbs	\$0.12	\$140
Feed 2	0	lbs	\$0.00	\$0
Mineral	0.25	lbs / day	\$0.40	\$12
Vet / Med	1	head	\$30.00	\$30
Sale Expenses	1	head	\$30.00	\$30
Hauling	1	head	\$15.00	\$15
Other	1	head	\$10.00	\$10
LRP Premium	1	head	\$32.00	\$32.00
Interest	8.0%	rate		\$40
Death loss	2%			\$29
Total Expenses				\$1,791
Return to Land, Capital and Management				\$249

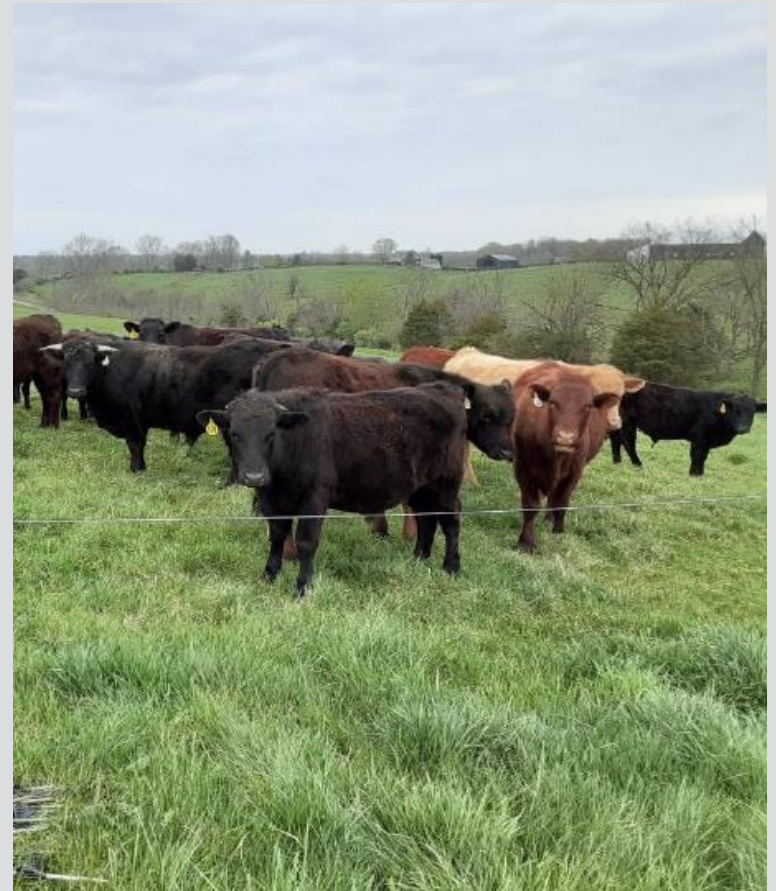


PRICES FALL – A LITTLE

- LRP ending value ends up being \$236 per cwt (\$4 less than expected)
 - Still above \$234 coverage level – no insurance help
- You sell your steers for \$231 per cwt (\$1,848 per head)
- You spent \$4 per cwt on LRP insurance (\$32 per head)
- Market fell, but not enough to trigger indemnity

RETURNS – SMALL PRICE DECLINE

Sales	# units	unit	price / unit	total
Feeder	800	lbs	\$2.31	\$1,848
Expenses				
Weaned Calf	500	lbs	\$2.80	\$1,400
Hay	1,170	lbs	\$0.05	\$53
3-way blend	1,170	lbs	\$0.12	\$140
Feed 2	0	lbs	\$0.00	\$0
Mineral	0.25	lbs / day	\$0.40	\$12
Vet / Med	1	head	\$30.00	\$30
Sale Expenses	1	head	\$30.00	\$30
Hauling	1	head	\$15.00	\$15
Other	1	head	\$10.00	\$10
LRP Premium	1	head	\$32.00	\$32.00
Interest	8.0%	rate		\$40
Death loss	2%			\$29
Total Expenses				\$1,791
Return to Land, Capital and Management				\$57

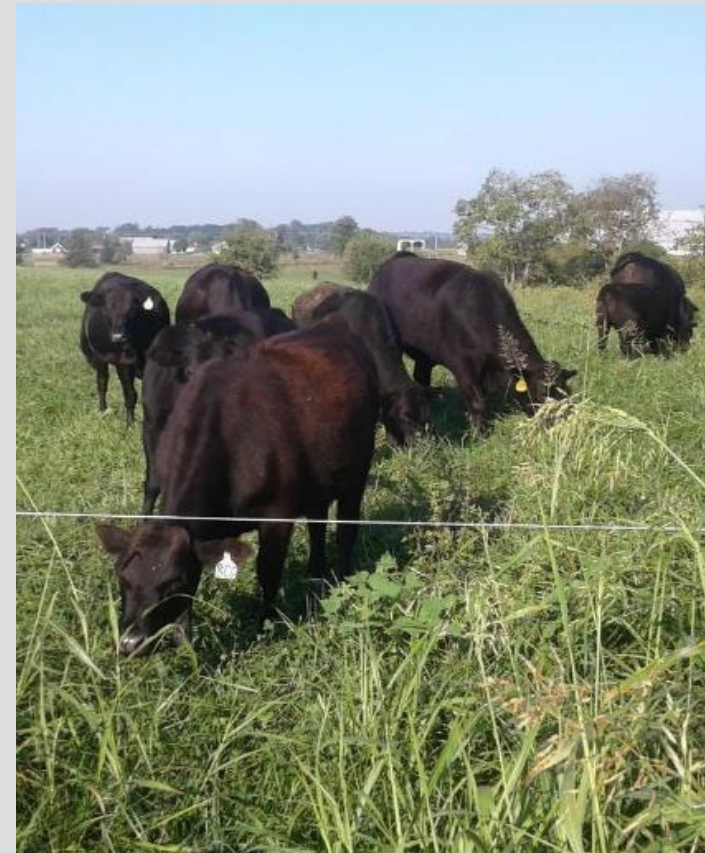


PRICES FALL SIGNIFICANTLY

- LRP ending value ends up being \$220 per cwt (\$20 less than expected)
- You sell your steers for \$215 per cwt (\$1,720 per head)
- You spent \$4 per cwt on LRP insurance (\$32 per head)
- You receive an indemnity of \$14 per cwt (\$112 per head)
- Insurance paid out, but worse price result

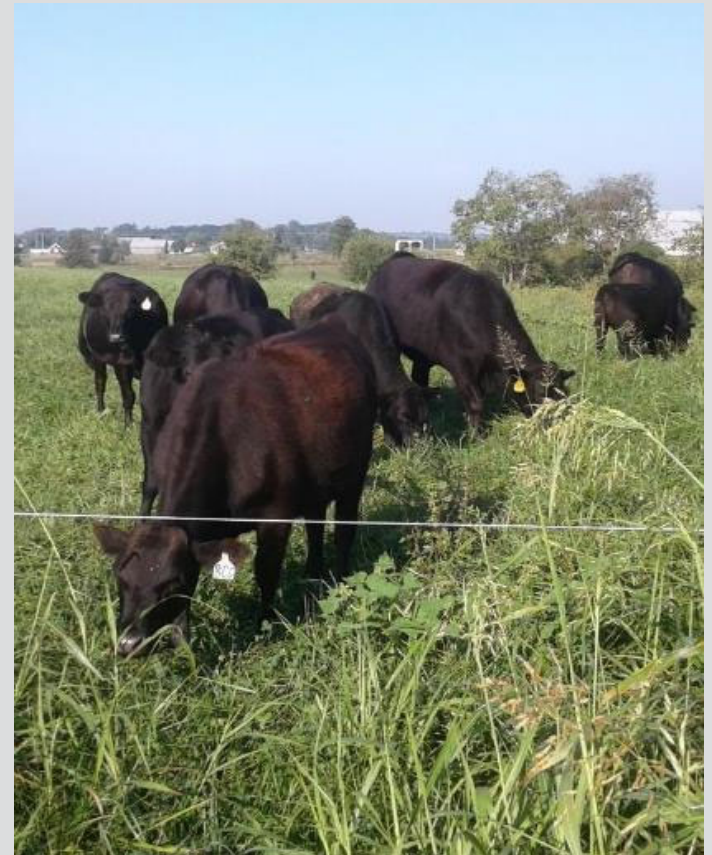
RETURNS – LARGE PRICE DECLINE - WITH LRP

Sales	# units	unit	price / unit	total
Feeder	800 lbs		\$2.15	\$1,720
Indemnity	1 head		\$112.00	\$112
Expenses				
Weaned Calf	500 lbs		\$2.80	\$1,400
Hay	1,170 lbs		\$0.05	\$53
3-way blend	1,170 lbs		\$0.12	\$140
Feed 2	0 lbs		\$0.00	\$0
Mineral	0.25 lbs / day		\$0.40	\$12
Vet / Med	1 head		\$30.00	\$30
Sale Expenses	1 head		\$30.00	\$30
Hauling	1 head		\$15.00	\$15
Other	1 head		\$10.00	\$10
LRP Premium	1 head		\$32.00	\$32
Interest	8.0% rate			\$40
Death loss	2%			\$29
Total Expenses				\$1,791
Return to Land, Capital and Management				\$41



RETURNS – LARGE PRICE DECLINE - NO LRP

Sales	# units	unit	price / unit	total
Feeder	800	lbs	\$2.15	\$1,720
Indemnity	1	head	\$0.00	\$0
Expenses				
Weaned Calf	500	lbs	\$2.80	\$1,400
Hay	1,170	lbs	\$0.05	\$53
3-way blend	1,170	lbs	\$0.12	\$140
Feed 2	0	lbs	\$0.00	\$0
Mineral	0.25	lbs / day	\$0.40	\$12
Vet / Med	1	head	\$30.00	\$30
Sale Expenses	1	head	\$30.00	\$30
Hauling	1	head	\$15.00	\$15
Other	1	head	\$10.00	\$10
LRP Premium	1	head	\$0.00	\$0
Interest	8.0%	rate		\$40
Death loss	2%			\$29
Total Expenses				\$1,759
Return to Land, Capital and Management				(\$39)



LRP NET RETURN OUTCOMES

\$234 COVERAGE LEVEL, \$5 BASIS, \$4 PREMIUM

LRP Ending Value	Local Sale Price	Premium Cost per cwt	Indemnity per cwt	Return per Head
\$240	\$235	\$4	\$0	\$89

LRP NET RETURN OUTCOMES

\$234 COVERAGE LEVEL, \$5 BASIS, \$4 PREMIUM

LRP Ending Value	Local Sale Price	Premium Cost per cwt	Indemnity per cwt	Return per Head
\$240	\$235	\$4	\$0	\$89
\$230	\$225	\$4	\$4	\$41

LRP NET RETURN OUTCOMES

\$234 COVERAGE LEVEL, \$5 BASIS, \$4 PREMIUM

LRP Ending Value	Local Sale Price	Premium Cost per cwt	Indemnity per cwt	Return per Head
\$240	\$235	\$4	\$0	\$89
\$230	\$225	\$4	\$4	\$41
\$220	\$215	\$4	\$14	\$41
\$210	\$205	\$4	\$24	\$41

LRP NET RETURN OUTCOMES

\$234 COVERAGE LEVEL, \$5 BASIS, \$4 PREMIUM

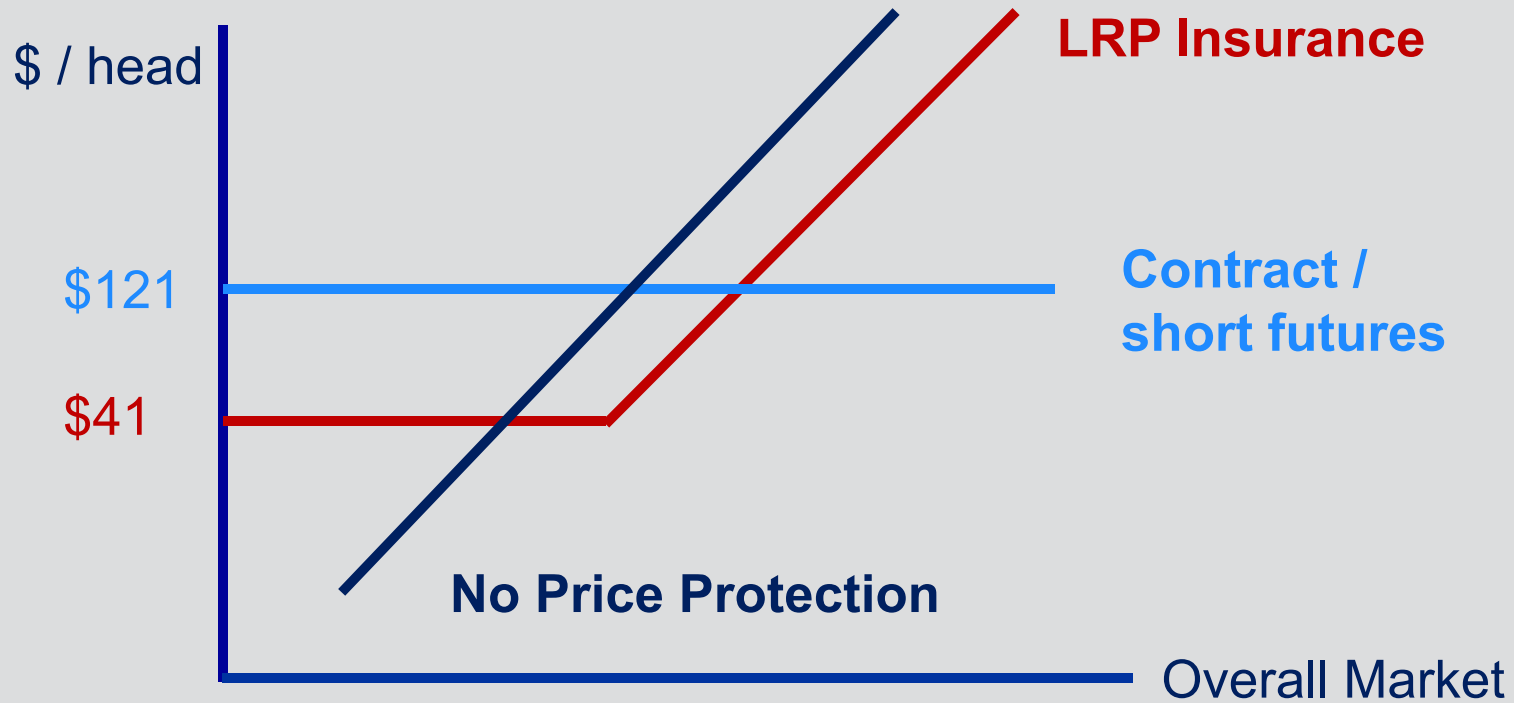
LRP Ending Value	Local Sale Price	Premium Cost per cwt	Indemnity per cwt	Return per Head
\$250	\$245	\$4	\$0	\$169
\$240	\$235	\$4	\$0	\$89
\$230	\$225	\$4	\$4	\$41
\$220	\$215	\$4	\$14	\$41
\$210	\$205	\$4	\$24	\$41

LRP NET RETURN OUTCOMES

\$234 COVERAGE LEVEL, \$5 BASIS, \$4 PREMIUM

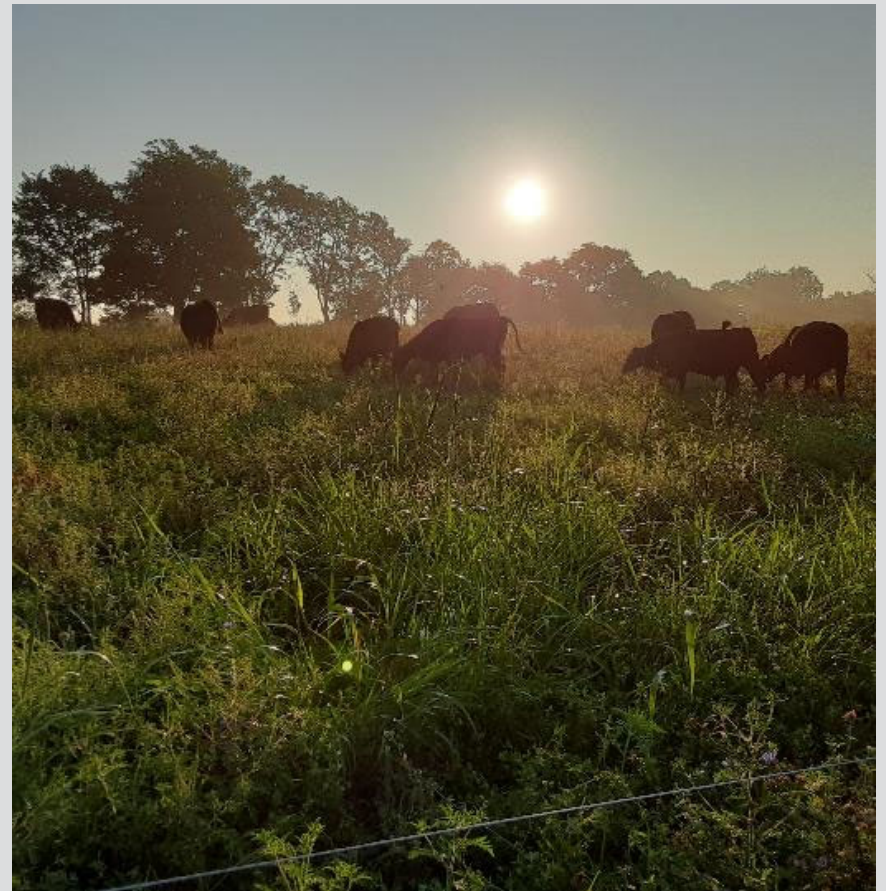
LRP Ending Value	Local Sale Price	Premium Cost per cwt	Indemnity per cwt	Return per Head
\$270	\$265	\$4	\$0	\$329
\$260	\$255	\$4	\$0	\$249
\$250	\$245	\$4	\$0	\$169
\$240	\$235	\$4	\$0	\$89
\$230	\$225	\$4	\$4	\$41
\$220	\$215	\$4	\$14	\$41
\$210	\$205	\$4	\$24	\$41

RETURN GIVEN RISK MANAGEMENT STRATEGY



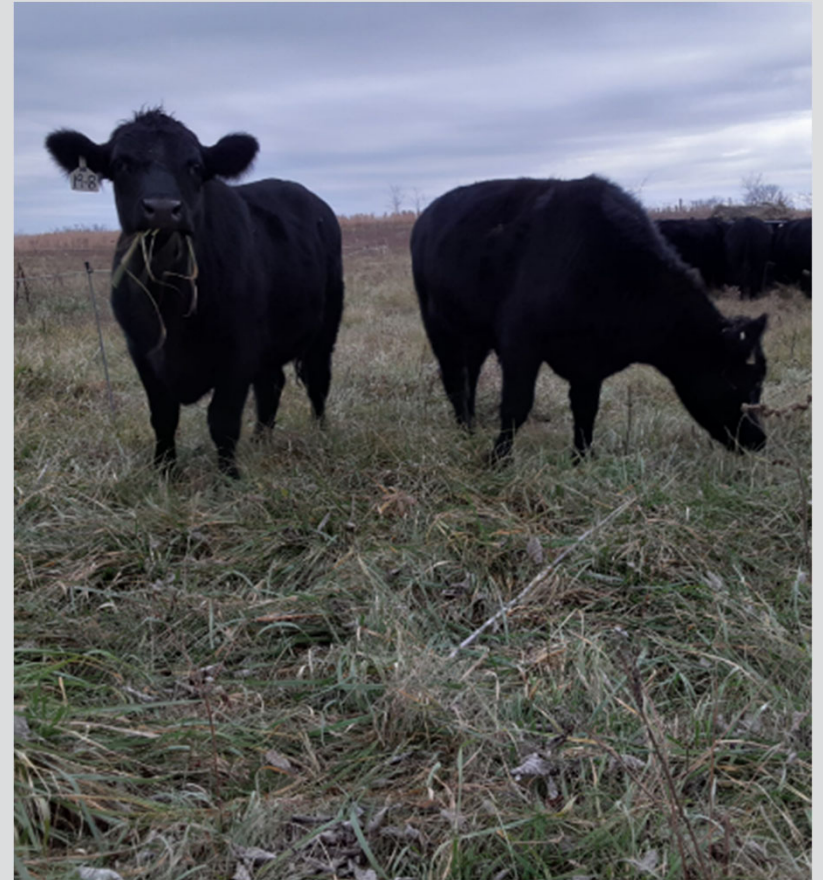
WHAT IF I NEED TO SELL AT A DIFFERENT TIME

- Indemnity is calculated on ending date!
- Can sell up to 60 days before
 - Rally after sale could lower indemnity
- Can sell anytime after
 - Unprotected past ending date



SOME LESS-THAN-IDEAL THINGS...

- Timing of availability
- Lack of flexibility on ending dates / sale dates
- Tight sale date / ending date
 - 7-day CME© Index process
- Adjustments can be tricky
 - Heifers, calves, Holsteins, etc.



HEIFER ADJUSTMENT

- Expected ending value for heavy steers: \$240
 - This is essentially the futures price
 - Make basis adjustment from here
- Expected ending value for heavy heifers: \$216
 - 90% of the steer expected ending value
 - Built in -\$24 per cwt basis
- If your heavy heifers typically sell \$15 off the board, you have to adjust for this

LIGHT WEIGHT ADJUSTMENT

- Adjustment made to expected and actual ending values
 - Moves CME© Index price closer to steer calf price
- Reality - multiplies price movement
 - CME© Index: \$240, Steer Weight 1: \$264
 - CME© Index drops to \$230, Steer Weight 1: \$253
- Premium will reflect difference
- The movement is what matters

WHAT COVERAGE LEVELS ARE BEST

- Risk preference / financial situation?
 - Coverage level vs cost



LRP POLICY ILLUSTRATION: 800 LB STEERS

- Ending date: late February
- Expected Ending Value: \$240 per cwt
- Selected available coverage levels
 - \$238 for \$6 per cwt: \$48 per head, \$2 per cwt deductible
 - \$234 for \$4 per cwt: \$32 per head, \$6 per cwt deductible
 - \$226 for \$2 per cwt: \$16 per head, \$14 per cwt deductible

Premium paid on lbs covered – premium per cwt X 800 lbs

WHAT COVERAGE LEVELS ARE BEST

- Risk preference / financial situation?
 - Coverage level vs cost
- How much risk can you stand?
 - Cost of production
 - Bank loan
 - Can you self-insure?
- Premium subsidy matters



WHEN COMPARING TO PUT OPTIONS...

- LRP Advantages
 - Available in any quantity
 - Significant premium subsidy
 - No commission
 - Can combine with other strategies*
- LRP Disadvantages
 - Less flexible



WHEN COMPARING TO OTHER STRATEGIES

- Compared to a forward contract, LRP has
 - Continued upside price potential
 - Lower production / delivery risk
 - Less solid price floor
 - Premium expense
- Compared to short futures, LRP has
 - No potential for margin calls
 - Premium expense

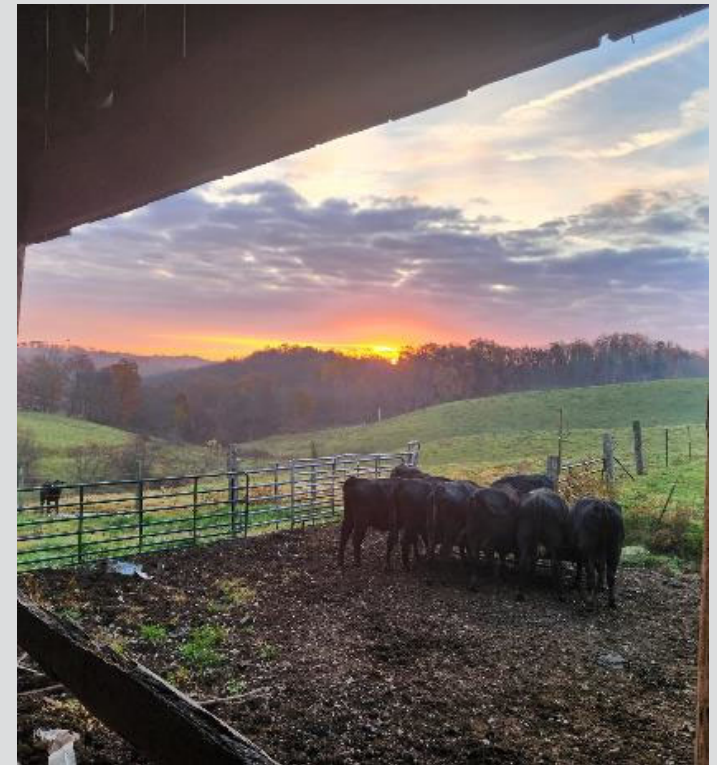


Photo: Grant Martin

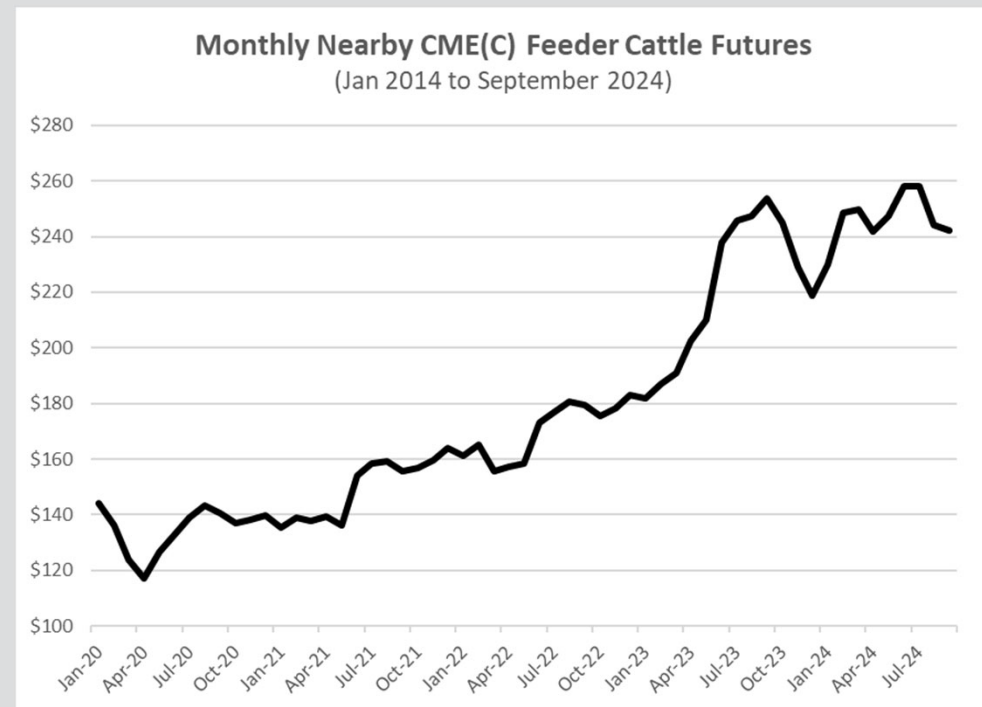
COMBINING LRP WITH OTHER STRATEGIES

- Initially, producers could not have LRP and futures positions
- Potential as lower end of fence
 - Buy put, sell call: LRP replaces put
- Use puts to reset floor in bull market
- Mixed strategies
 - 1/3, 1/3, 1/3
 - Don't think all or nothing



LRP GOT SOME BAD PRESS IN 2023

- Could LRP be partly to blame for slide in CME© feeder futures?
- Notion had some merit
- Volume didn't really support theory
- At most, some impact on markets from option trading
- Some potential for arbitrage exists



BEST PRACTICES FOR PRICE RISK MANAGEMENT

- Know how changes in price impact profit
 - Budget sensitivity

Sales	# units	unit	price / unit	total
Feeder	800	lbs	\$2.35	\$1,880
Expenses				
Weaned Calf	500	lbs	\$2.80	\$1,400
Hay	1,170	lbs	\$0.05	\$53
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Interest	8.0%	rate		\$40
Death loss	2%			\$29
Total Expenses				
				\$1,759
Return to Land, Capital and Management				\$121

BEST PRACTICES FOR PRICE RISK MANAGEMENT

- Know how changes in price impact profit
 - Budget sensitivity
- Know what tools are at your disposal
- Fully understand the strategy being used
- Set pricing targets ahead
 - Takes the emotion out of decisions



BEST PRACTICES FOR PRICE RISK MANAGEMENT

- Manage the downside first, then worry about the upside
- Don't get wrapped up in timing and scheming
- Treat insurance as production cost
- If you aren't leaving money on the table occasionally...



Cattle Market Notes Weekly



Cattle Market Notes Weekly

Josh Maples



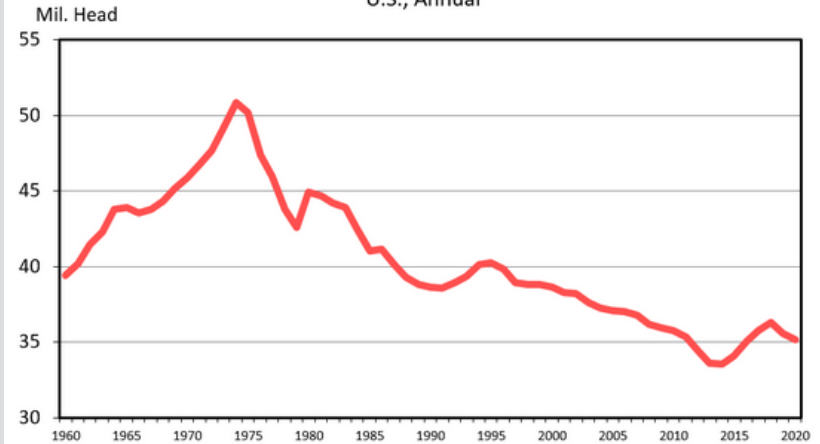
James Mitchell



Kenny Burdine



CALF CROP U.S., Annual



Data Source: USDA-NASS
Livestock Marketing Information Center

C-N-18A
01/29/21

Some Perspective on Calf Crop Revisions
By: Kenny Burdine, Josh Maples, and James Mitchell

Last week, James walked through the January 2021 estimates of US beef cattle inventory from USDA-NASS. This week, we wanted to talk a bit more

Contact Information

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