

New USDA-RMA Insurance Product:

Weaned Calf Risk Protection (WCRP)



Center for Agriculture Profitability

cap.unl.edu/elliott-dennis

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Objective

Provide yield and revenue protection with both yield and revenue risk protection up to weaning age for SPRING born calves

WCRP: Three Separate Products

- Yield Protection
 - Pays for losses from average historical total weaning weight
- Revenue Protection
 - Pays for losses in revenue based on projected prices
- Revenue Protection with Harvest Price Exclusion
 - Pays for losses in revenue based on observed harvest prices

What Risk Do You Want To Manage?

$$\text{Net Profit} = \left(\underbrace{\text{Production Sold}}_A * \underbrace{\text{Output Price}}_B \right) - \underbrace{\text{Variable Production Costs}}_C - \left(\text{Fixed Costs} \right)$$

D

The diagram shows the Net Profit equation: Net Profit = (Production Sold * Output Price) - Variable Production Costs - Fixed Costs. Brackets group the terms: a blue bracket groups 'Production Sold' and 'Output Price'; a blue bracket groups 'Variable Production Costs'; and a blue bracket groups 'Fixed Costs'. Red brackets are used to label risk management tools: a red bracket under 'Production Sold' is labeled 'A'; a red bracket under 'Output Price' is labeled 'B'; a red bracket under 'Variable Production Costs' is labeled 'C'; and a red bracket under both 'Production Sold' and 'Output Price' is labeled 'D'.

Types of Subsidized Risk Management Tools

A – WCRP-YP

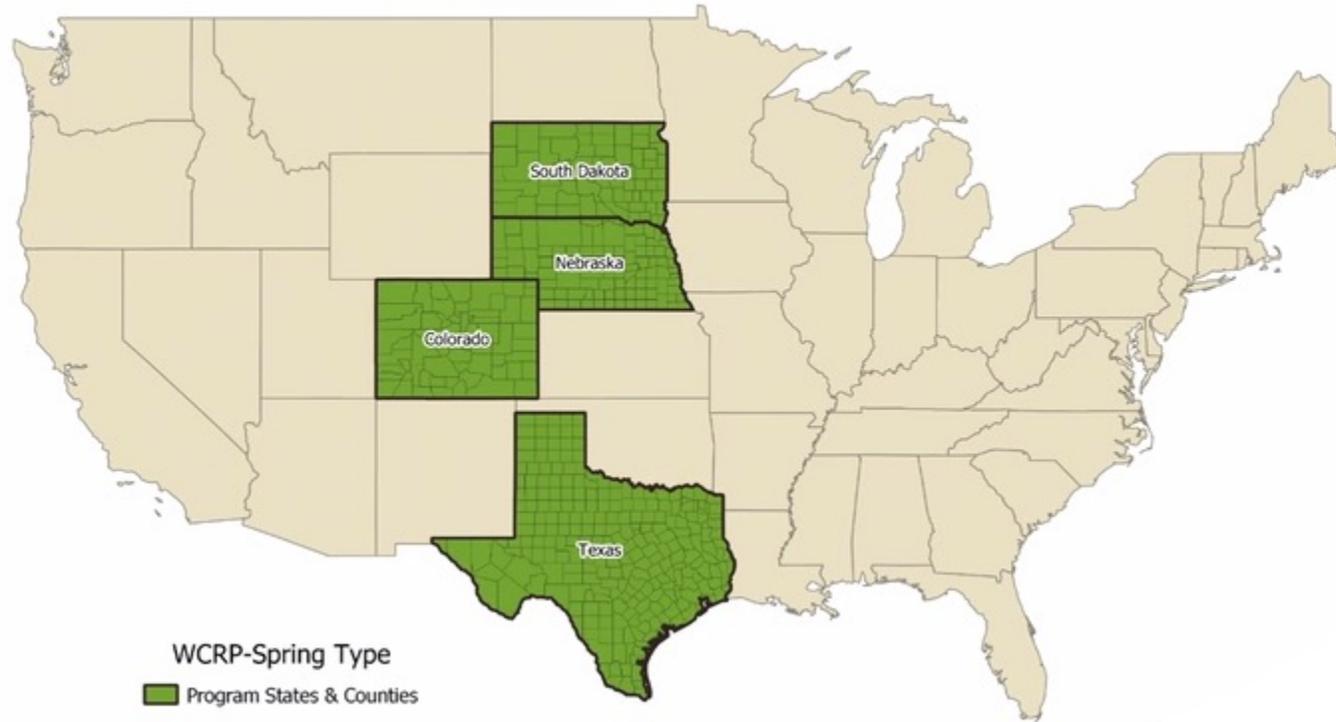
B – LRP

C – Pasture Range and Forage Insurance (PRF), Annual Forage (AF)

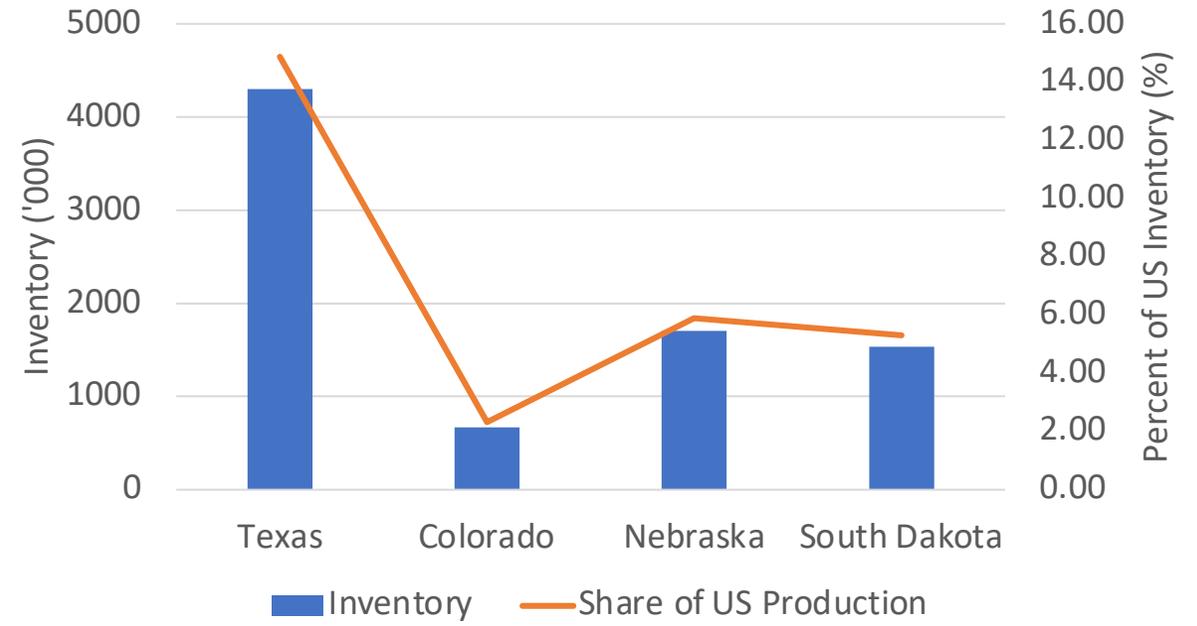
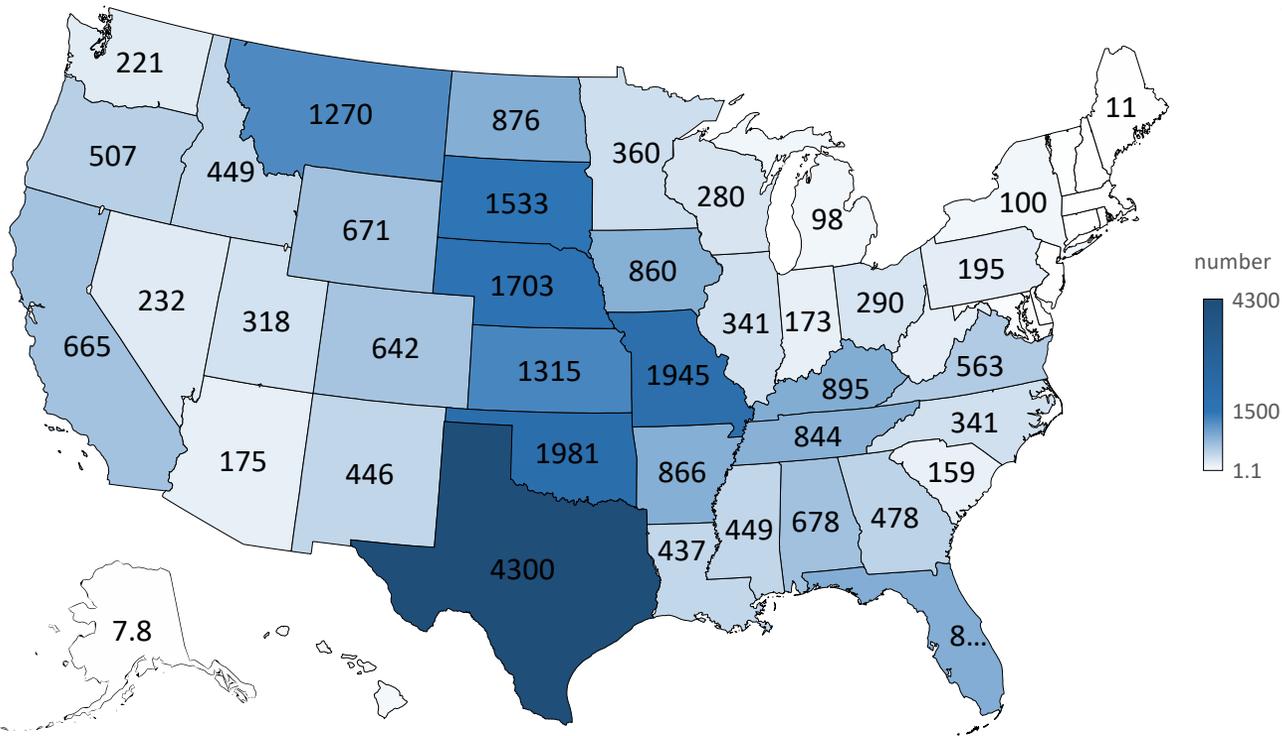
D – WCRP-RP, WCRP-RP w/HP exclusion

Where can WCRP be purchased?

WCRP will initially be available for spring calves in the 4 highlighted states



Calf Crop 2022



Calving Practices: USDA-APHIS, 2017

Percentage of operations that had one or more calves born alive in 2017, by month born and by region:

Month born	Percent Operations					
	Region					
	West		Central		East	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
January	31.9	(2.5)	14.6	(2.0)	31.9	(2.2)
February	48.6	(2.6)	33.7	(2.8)	43.8	(2.4)
March	64.6	(2.7)	66.1	(2.8)	59.0	(2.5)
April	59.1	(2.8)	68.4	(2.8)	52.0	(2.5)
May	45.1	(2.8)	46.7	(2.9)	39.6	(2.4)
June	28.0	(2.5)	27.4	(2.6)	31.0	(2.3)
July	25.3	(2.5)	18.6	(2.4)	29.3	(2.3)
August	23.3	(2.4)	25.5	(2.5)	31.4	(2.3)
September	33.2	(2.6)	27.7	(2.5)	34.6	(2.3)
October *	33.4	(2.6)	25.6	(2.4)	33.4	(2.1)
November*	37.4	(2.7)	21.1	(2.2)	43.6	(2.4)
December*	34.9	(2.7)	12.2	(1.8)	31.2	(2.2)

*Born alive or expected to be born alive

Percentage of operations by number of months in which one or more calves were born alive or were expected to be born alive in 2017, and by herd size:

Number of months	Percent Operations							
	Herd Size (number of beef cows)							
	Small (1-49)		Medium (50-199)		Large (200 or more)		All operations	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
1	10.7	(1.3)	1.8	(0.7)	3.7	(1.5)	8.5	(1.0)
2	18.6	(1.6)	13.4	(1.7)	13.9	(2.6)	17.3	(1.2)
3	18.7	(1.6)	23.2	(2.1)	23.0	(2.7)	19.8	(1.3)
4	14.6	(1.4)	17.6	(2.0)	19.0	(2.9)	15.4	(1.1)
5	11.0	(1.3)	11.2	(1.5)	12.9	(2.1)	11.1	(1.0)
6	8.6	(1.2)	7.5	(1.2)	8.5	(1.7)	8.4	(0.9)
7	5.8	(1.0)	6.2	(1.2)	4.9	(1.1)	5.8	(0.8)
8	4.5	(0.9)	4.0	(0.9)	5.3	(1.3)	4.4	(0.7)
9	2.1	(0.6)	4.9	(1.1)	1.8	(0.6)	2.7	(0.5)
10	1.6	(0.5)	2.3	(0.6)	1.8	(0.8)	1.7	(0.4)
11	1.9	(0.6)	2.4	(0.6)	1.3	(0.7)	2.0	(0.5)
12	2.0	(0.6)	5.4	(1.0)	3.8	(1.1)	2.8	(0.5)
Total	100.0		100.0		100.0		100.0	

Eligible Cattle

Cattle that are explicitly intended for beef production

Examples of insurable cattle breeds:

Angus, Beefmaster, Braford, Braham, Brangus, Braunvieh, Carolais, Chianina, Gelviah, Hereford, Limousin, Red Angus, Red Brangus, Santa Gertrudis, Shorthorn, Simbrah, Simmental (among others)

Consistent with the United States Standards for Grades of Feeder Cattle

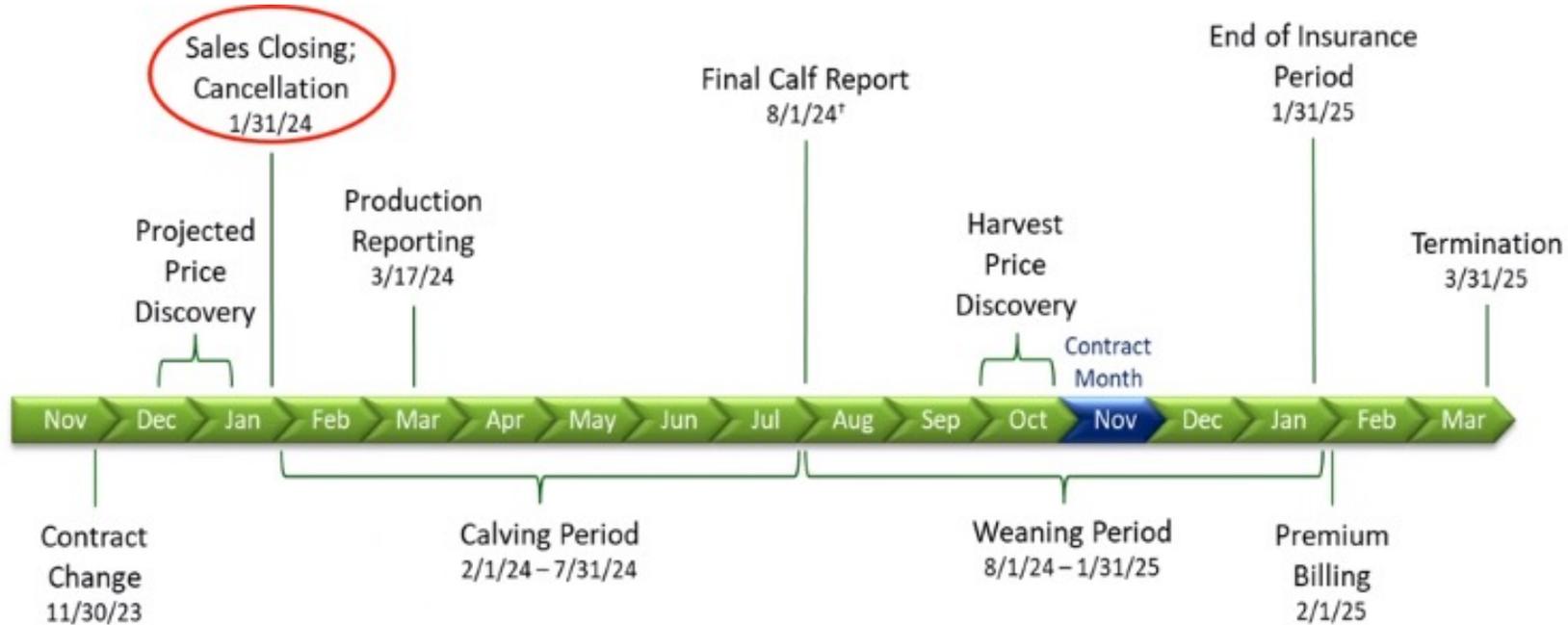
<https://www.ams.usda.gov/grades-standards/feeder-cattle-grades-and-standards>

Cattle that are NOT insurable are:

- Breeds or cross breeds that would typically produce calves grading:
 - Inferior
 - Small Frame
 - Number 3 or 4 thickness grade
- Breeds not explicitly raised for beef production
- All dairy cattle

Examples of NON-insurable cattle: (dairy cattle, miniature breeds, double-muscle breeds, specialty breeds)

WCRP Timeline



*Coverage begins with submission of the Calf Report submitted by the insured. The Calf Report may be revised as often as required to report the birth of additional calves during the 60-day period after the date calving begins except that the Calf Report may not be revised after the earlier of the insured's Calf Reporting Date for the type and unit or the Final Calf Reporting Date for the type specified in the actuarial documents.

Two Periods

Calving (Feb-July)

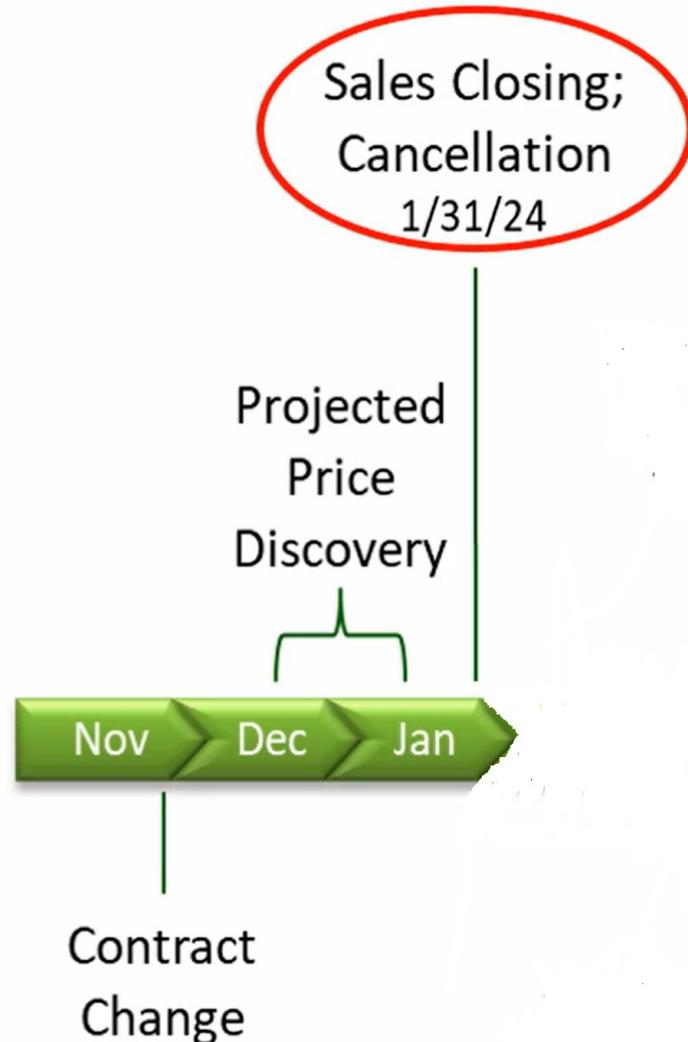
- notice when calving begins
- all calves must be born within 60 days
- all births reported to USDA

*Coverage does not begin on a calf until a birth is SUBMITTED

Weaning (Aug-Jan)

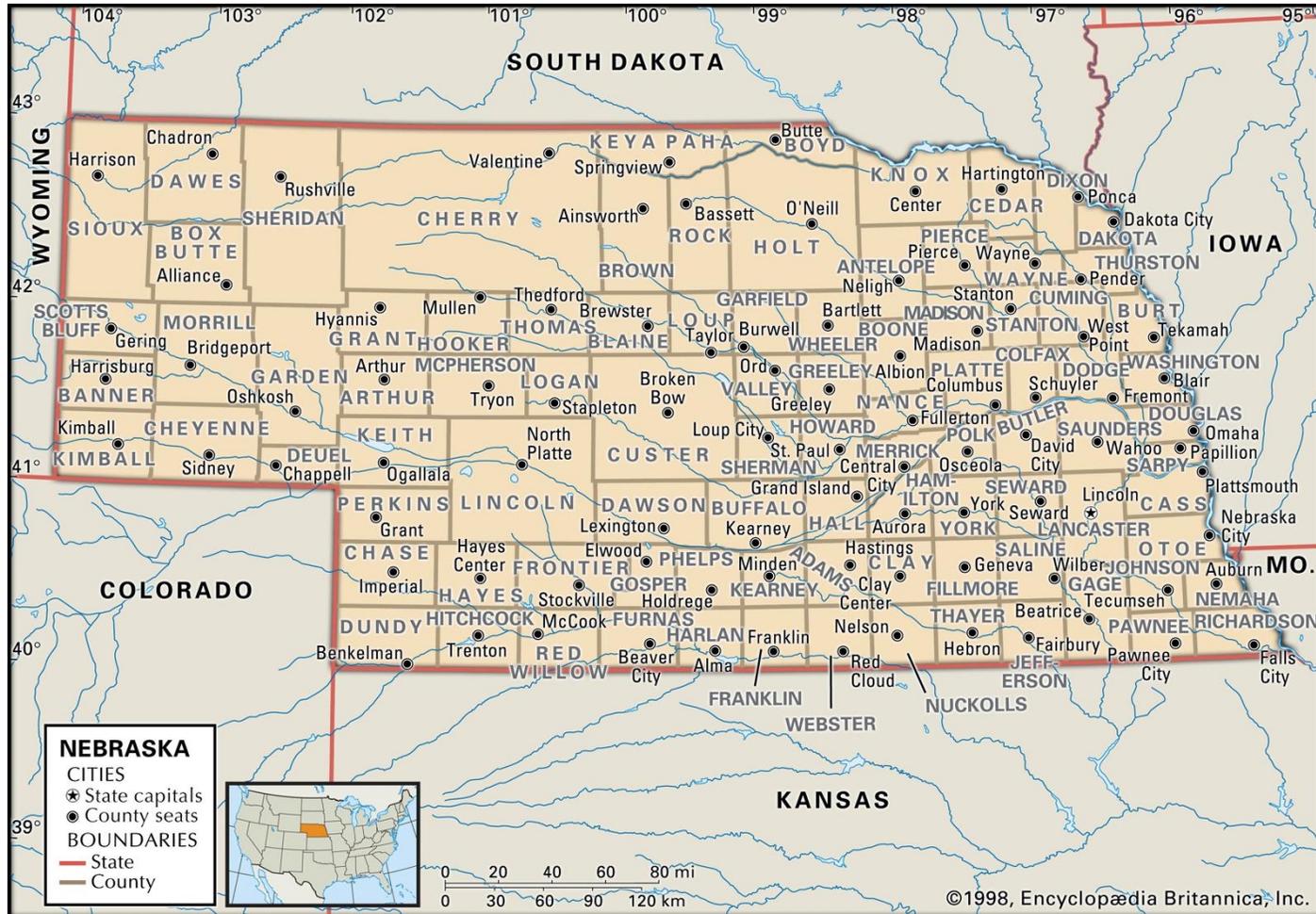
Report when weaning starts

Signup and Price Discovery Timeline



- Calculating Production History (Anytime)
- Projected Price Discovery (Dec 15 – Jan 15)
- Application Signup (Deadline Jan 31)

County Product Based on Historical Production



- Each county has a unique WCRP rated weaning weight (called a Transitional Yield or simply T-yield)
- Operational weaning weights can be:
 - Lower
 - No higher than 125% of county T-yield
- Producer must provide 4-10 years of eligible records
 - If no records, use county T-yield

Example: Production Records + Binding T-yield

- Assume for your county the established T-yield is 500 lbs. per weaned calf
- 125% cap would be 625 lbs. per weaned calf (500×1.25)

Year	Production	Number of Calves	Actual Weaning Weight	Maximum Allowable Weight	Adjusted Weaning Weight	Limited (Y/N)
2020	20,000	35	571	625	571	No
2021	25,000	35	714	625	625	Yes
2022	40,000	60	667	625	625	Yes
2023	30,000	50	600	625	600	No
Average			638		605	

- Weaning weights are bounded between 200-750 lbs.
- No indemnity payments above or below these bounds

Example: T-Yields Staying in Program

- Assume for your county the established T-yield is 500 lbs. per weaned calf
- 125% cap would be 625 lbs. per weaned calf (500×1.25)

Year	Production	Number of Calves	Actual Weaning Weight	Maximum Allowable Weight	Adjusted Weaning Weight	Limited (Y/N)
2020	20,000	35	571	625	571	No
2021	25,000	35	714	625	625	Yes
2022	40,000	60	667	625	625	Yes
2023	30,000	50	600	625	600	No
2024	35,000	55	636	-	636	No
2025	32,000	45	711	-	711	No
2026	37,000	50	740	-	740	No
2027	25,000	45	556	-	556	No
Average			649		633	

- Yields are allowed over the T-yield $\times 1.25$ if there is continuous coverage in WCRP

Example: T-Yields Entering and Exiting

- Assume for your county the established T-yield is 500 lbs. per weaned calf
- 125% cap would be 625 lbs. per weaned calf (500×1.25)

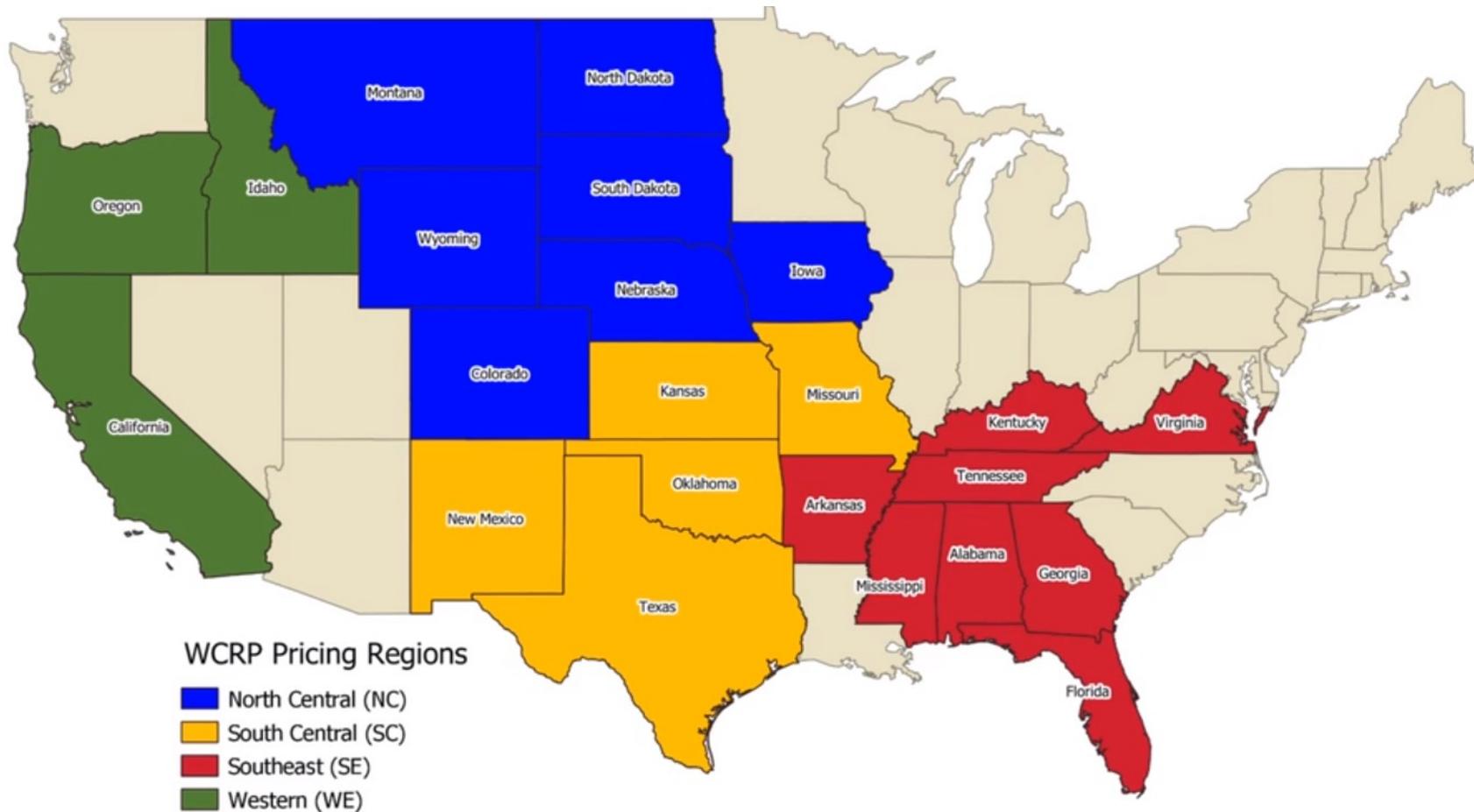
Year	Production	Number of Calves	Actual Weaning Weight	Maximum Allowable Weight	Adjusted Weaning Weight	Limited (Y/N)
2020	20,000	35	571	625	571	No
2021	25,000	35	714	625	625	Yes
2022	40,000	60	667	625	625	Yes
2023	30,000	50	600	625	600	No
2024	35,000	55	636	625	625	Yes
2025	32,000	45	711	625	625	Yes
2026	37,000	50	740	625	625	Yes
2027	25,000	45	556	625	556	Yes
2028	20,000	35	571	625	571	No
2029	25,000	35	714	625	625	Yes
Average			648		606	

Price Discovery

- Price discovery happens between December 15 – January 15
- The November '24 CME Feeder Cattle Futures contract is used



USDA-AMS Regions



Note: Currently, the South Central Region only consists of Texas. The North Central Region consists of Colorado, Nebraska, and South Dakota

Convert CME to Regional Prices

- Uses the CME Feeder Cattle Contract (assumes 700-900 lb.)
- Regional Factor: Adjusts futures price during price discovery to regional price
- Uncertain on what time frame is used for USDA-AMS market reports

$$\text{Regional Factor: } RF = \left(\frac{y_{RegionP_1}}{y_{FuturesP_1}} \right)$$

CME November'24 Feeder Cattle × North Central Regional Factor

\$2.55/lb. × 1.02 =

\$2.60/lb. base weight price

$$\text{Regional Base Price: } y_{RegBaseP_1} = RF \times y_{FuturesP_1}$$

Normalizing to a Base Price

- Weaning can occur at different weights
- Base price: 650 lbs.
- USDA-AMS market prices used to create a “price-weight slide” to base price by region

$$\text{Weight Differential: } \hat{y}_{RegD_1} = \frac{\left(\frac{y_{RegMAX(300-400)_1}}{y_{Reg650P_1}} \right) - 1}{650 - 300}$$

Example:

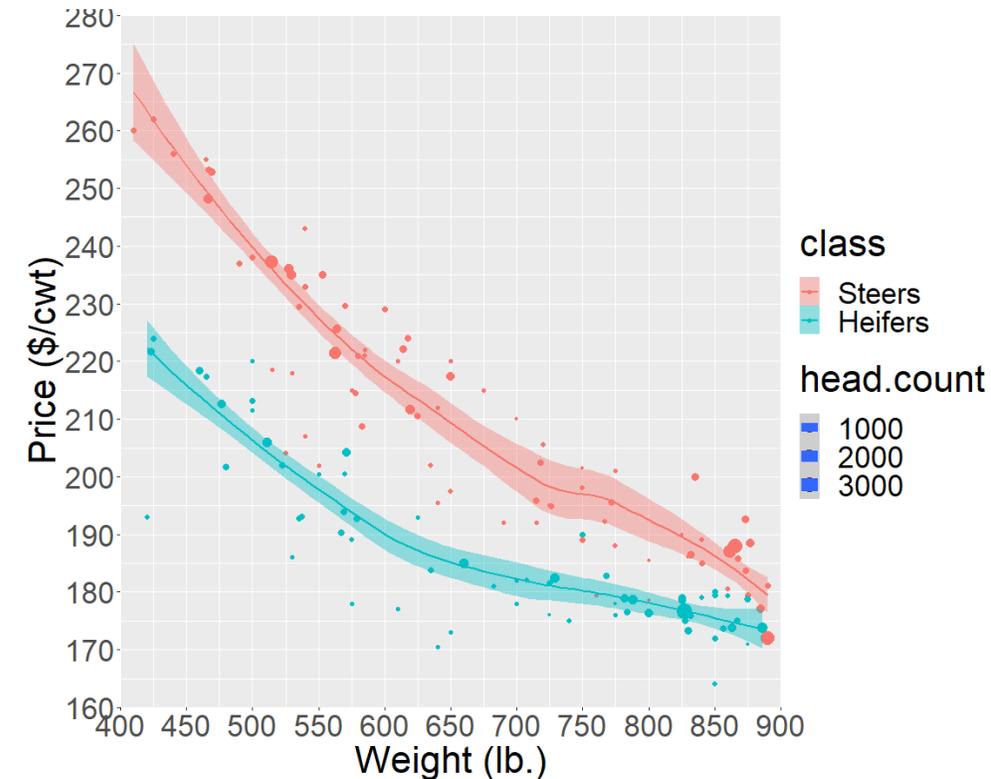
WD = ((300 lbs. price ÷ 650 lbs. Price) – 1) ÷ (650-300) lbs.

WD = ((\$3.00 ÷ \$2.60) – 1) ÷ 350 lbs.

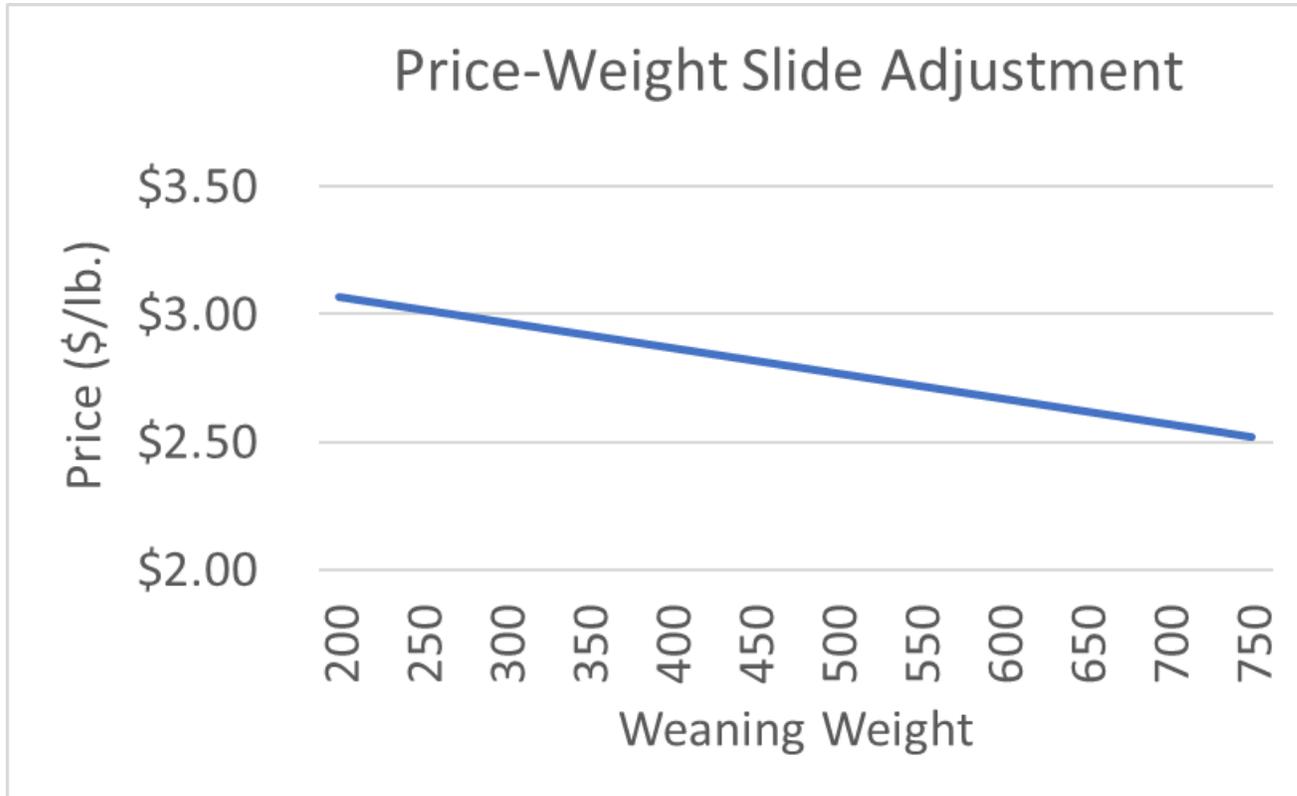
WD = ((\$1.1538) – 1) ÷ 350 lbs.

WD = (\$0.1538) ÷ 350 lbs.

WD = 0.0004 => 0.04% “price slide”



Price Adjustment Factor



Assume:

- \$2.60 base price weight price
- 0.4% price-weight slide

Marginal Rate of Gain is constant rather than exponential

200# @ \$3.06

650# @ \$2.60

750# @ \$2.49

Price Adjustment Factors

(Projected/Harvest): Used to adjust

$$\text{Price Adjustment Factor: } \hat{y}_{RegPAF_1} = \left(\frac{\hat{y}_{RegD_1}}{y_{RegBaseP_1}} \right)$$

Example: Base Scenario

Assume:

Weaning weight is 600 lbs.

100 calves

100% ownership share

Producer elects:

75% coverage level

100% price election

These decisions result in a 0.05 (i.e. 5%) premium rate

Insurance coverage would be:

450 lbs. of production guarantee
(e.g. 600 x 75%)

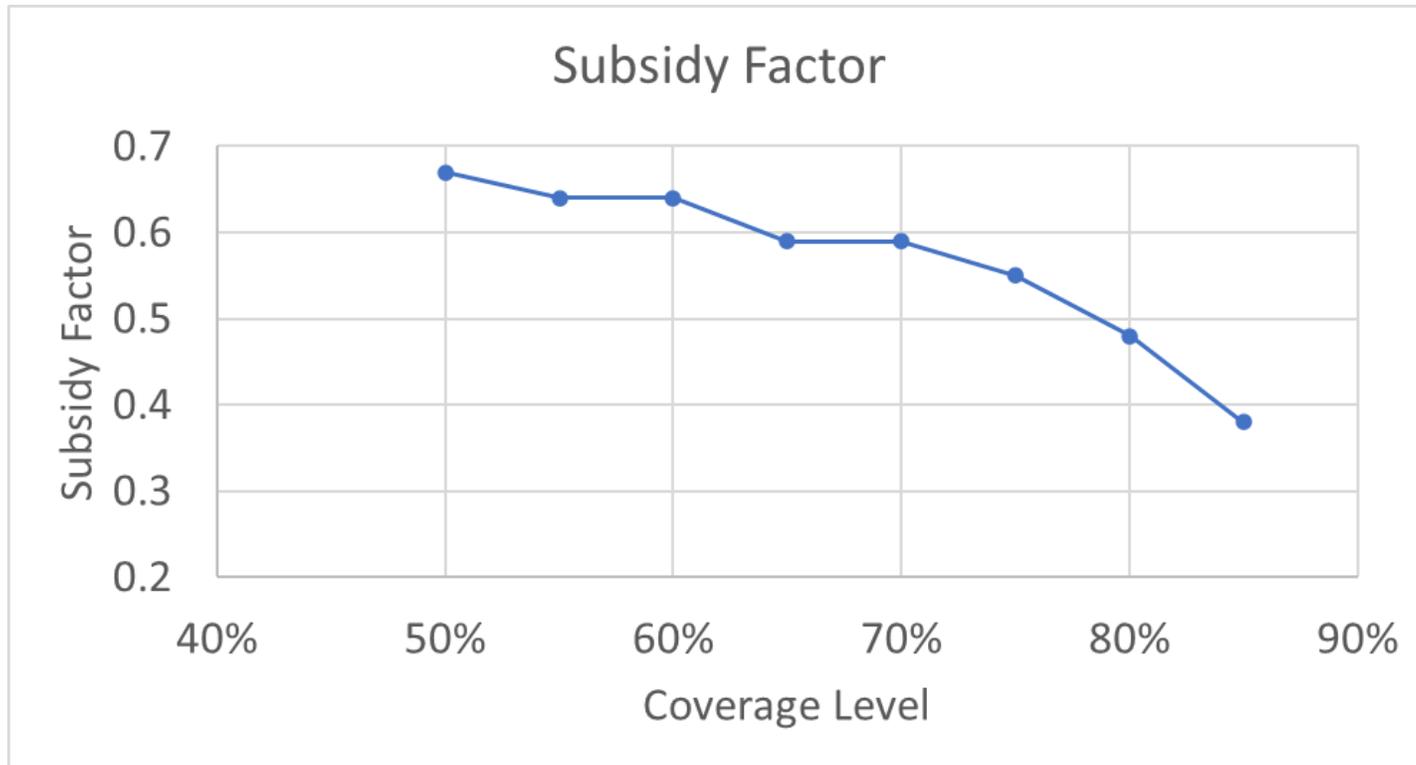
Formulated Producer Projected
Price @ 600 lbs. is \$1.64/lb.

Total liability is \$73,800 (100 x 450 x 1.64)

Total premium is \$3,690 (73,800 x 0.05)

Subsidy Table

- Similar to other Revenue Protection Programs for Crop Insurance



Coverage Level	Subsidy Factor
50%	0.67
55%	0.64
60%	0.64
65%	0.59
70%	0.59
75%	0.55
80%	0.48
85%	0.38

Type of Insurance Dictates Project and Adjusted Prices Used

Plan of Insurance	Formulated Producer Projected Price	Adjusted Producer Projected Price	Formulated Producer Harvest Price	Adjusted Producer Harvest Price
YP	Production Guarantee	Production-to-Count	-	-
RP	Production Guarantee (If PP > HP)	-	Production Guarantee (If PP < HP)	Production-to-Count
RP-HPE	Production Guarantee	-	-	Production-to-Count

Still Unknown in Pricing

- Following the Applicable Price Discovery Period (Dec 15 – Jan 15), the following factors will be made available BY COUNTY:
 - Base Weight
 - Projected Price Adjustment Factor
 - Harvest Price Adjustment Factor
 - Projected Price
 - Harvest Price
 - Price Volatility Factor

Application Sign-up

Similar to other federally subsidized programs, you will need to provide:

- 1) Find an approved insurance provider
- 2) Complete a pre-acceptance worksheet
- 3) Make insurance decisions
 - 1) Select the Insurance plan
 - 2) Declare Share of Ownership
 - 3) Select Coverage Level
- 4) Approved by an insurance provider via inspection with 30 days of sales closing date

Pre-acceptance worksheet (PAW)

What will the insurance agent be asking about?

- Ensure water, forage, feed, and mineral sources
 - Note: Consistent with BQA, extension guidelines, and local practices
- Insect prevention & control methods
 - Note: deworming and fly controls
 - Consistent with BQA, extension guidelines, and local practices
- Disease prevention plan
 - Note: disease prevention, disease treatment, proper handling for sick, disabled & deceased cattle
 - Consistent with BQA, extension guidelines, and local practices
- Vaccination protocol
 - Note: All vaccines given to calves prior to weaning

Record Requirements

Initial Coverage:

- Application
- Weaning weight records from the last 4-10 years
 - Note: If applicable and if deemed acceptable
- Pre-acceptance worksheet will need to be completed

After the Initial Year of Coverage:

- Policy continues until canceled
- Self-certified pre-acceptance worksheet
- Retain records

Acceptable Records?

- Must be verifiable
- Include the number of head and weight
- Align with WCRP requirements

Choices to be made by producers

Choices

- Buy the insurance? (yes/no)
- Coverage level (%)
- Price election (%)
- Harvest price exclusion (yes/no)

Need to know

- Weaning weights
- T-yields for county -> if weaning weights are higher than 125% of T-yields then you will be under protected
- Are you going to move calves to different counties throughout the grazing season? If yes, then need to know the premiums in each county
- Background adjustment ratio -> how does this compare to what you observe on your operation? 1.5 is the standard adjustment

Inspection and Approval

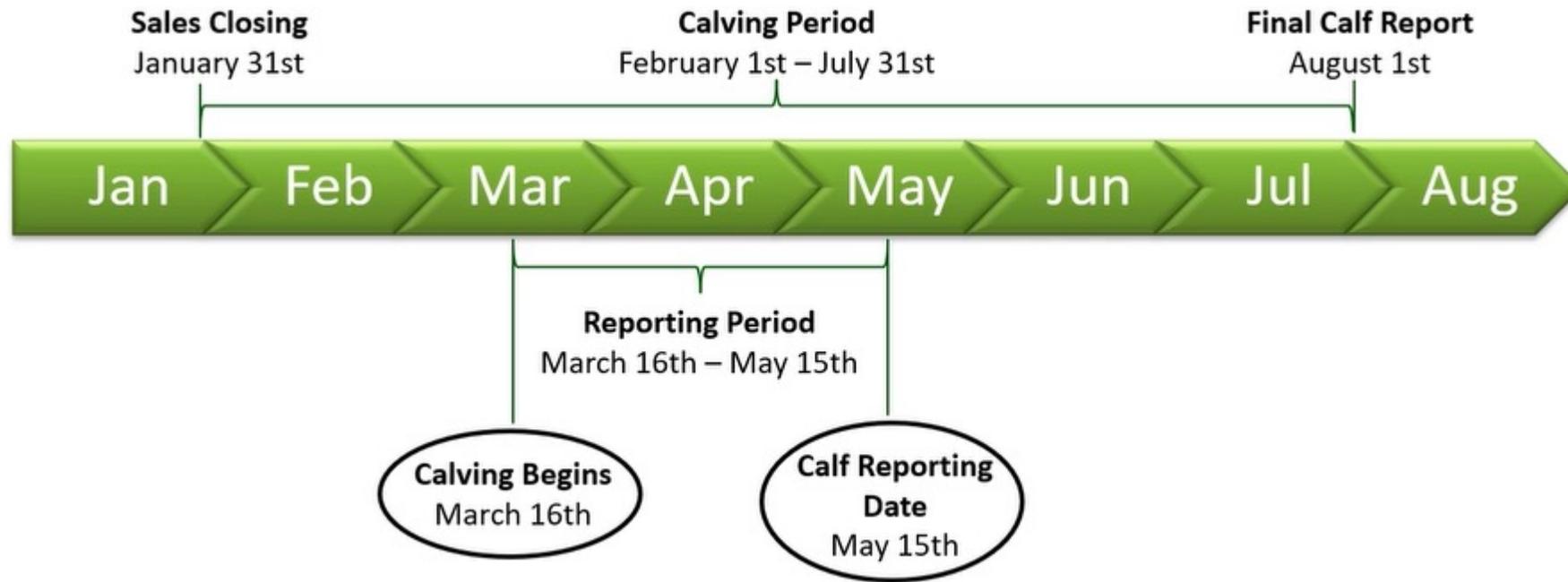
- All cattle in all locations for the application county must be inspected
- Completed within 30 days of the Sales Closing Date
- Will also need to be completed if:
 - Significant change in operation (number of cows, change in acres, management practice)
 - Assess pasture/range conditions due to prior year damage (i.e. fire, drought, etc.)
 - At the discretion of the insurance provider

Pre-Acceptance Inspection Report (PAIR)

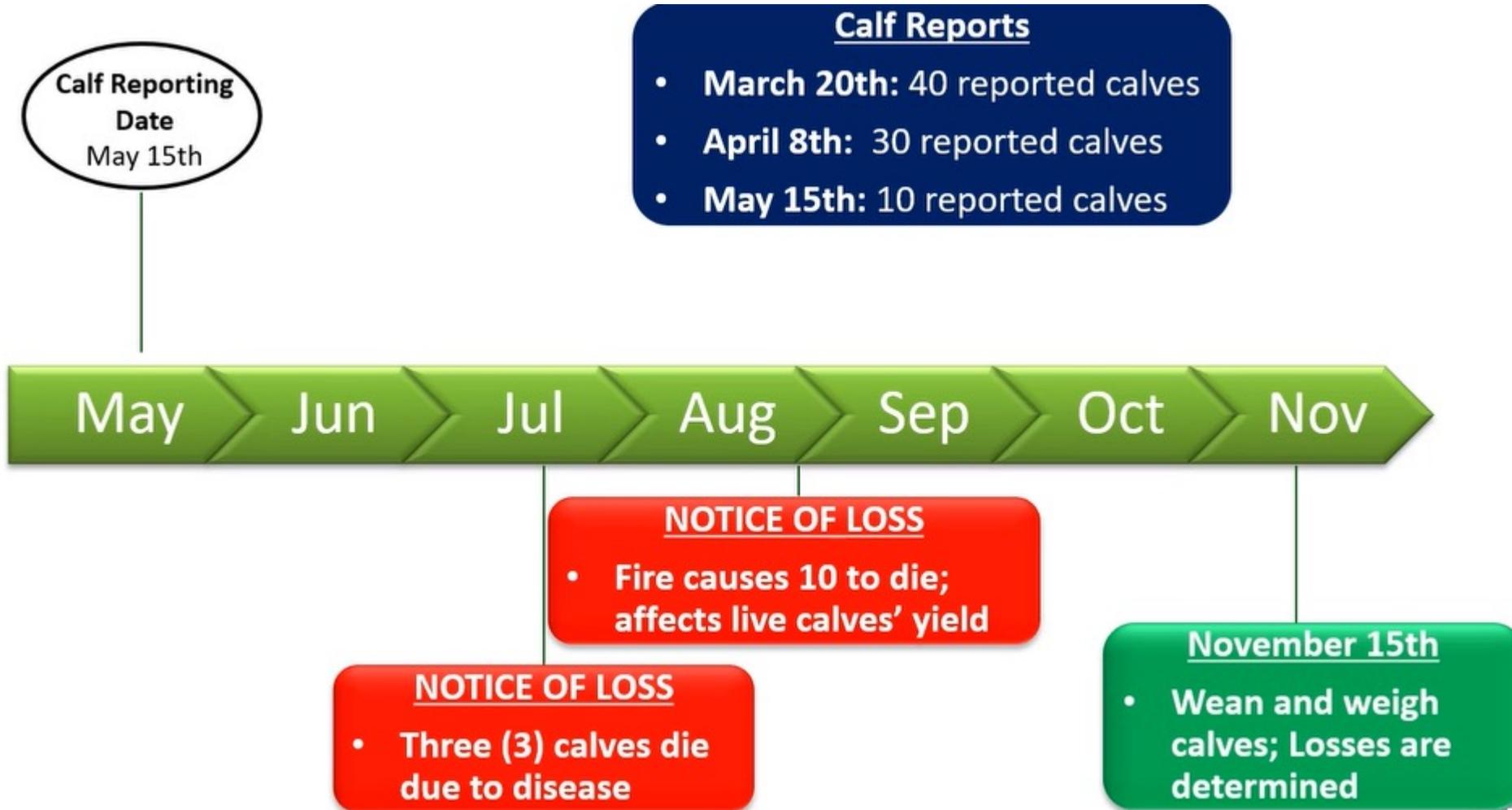
What will the AIP be looking for?

- BQA and extension guidelines being followed
- Determine general body condition score (BCS)
 - Note: if more than 25% of cows are below a BCS of 5, are disabled, or have visible genetic defects then the operation is uninsurable
- Can the land sustain the cattle?
 - Note: Assessing stocking rates, grazing management plan, no significant signs of overgrazing
- Water and feed sources
- Verifiable insect, head health, and disease control plans

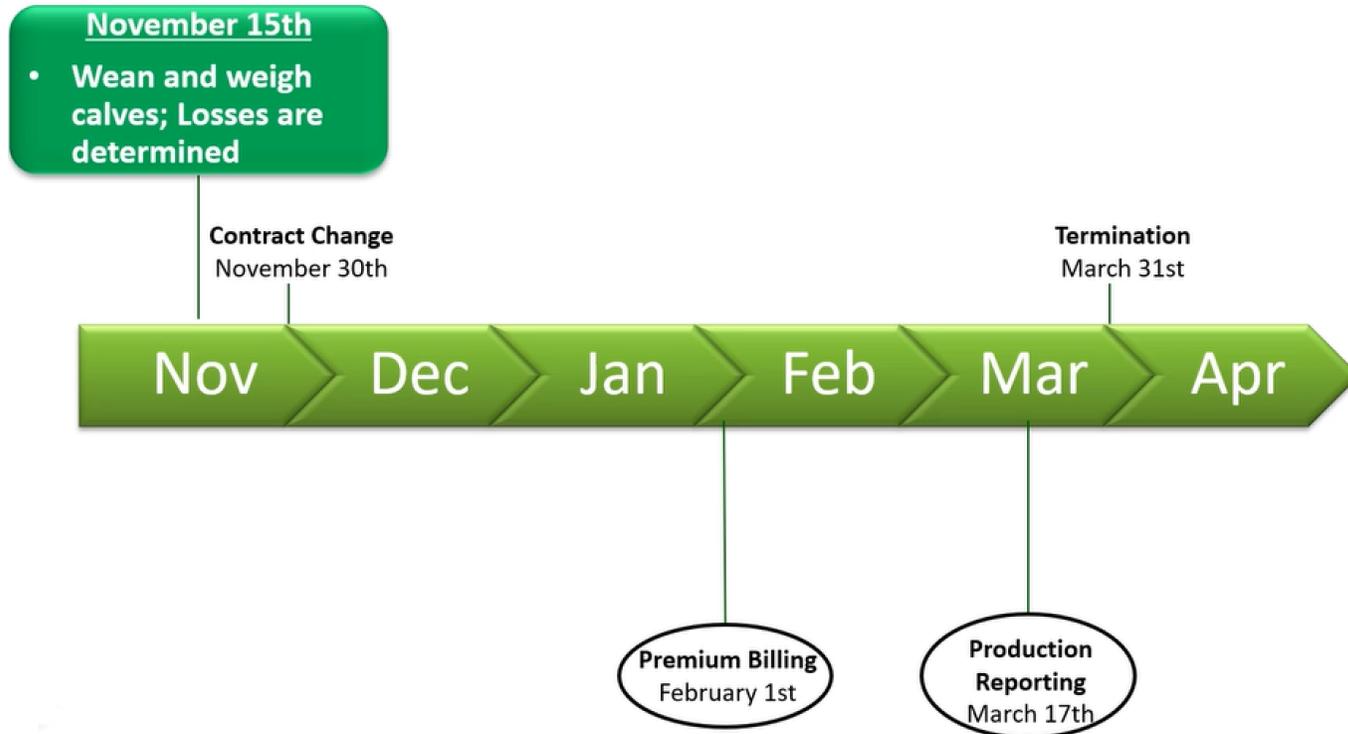
Calving Period Timeline



Post Calving Timeline



Post Weaning Reporting



Payout

Guarantee

$$\text{calves reported} \times \frac{\text{approved yield}}{(\text{historical average weaning weight per calf})} \times \begin{matrix} \text{greater of} \\ \text{projected price}^\dagger \\ \text{or harvest price} \end{matrix} \times \text{coverage level}$$

Value of Production to Count

$$\text{calves weaned} \times \text{actual average weaning weight per calf} \times \text{harvest price}$$

Indemnity

†The projected price is always used for premium calculation.

$$\text{Guarantee} - \text{Value of Production to Count} = \text{Indemnity}$$

Scenario Set-up

Assume:

Weaning weight is 600 lbs.

100 calves

100% ownership share

Producer elects:

75% coverage level

100% price election

Insurance coverage would be:

450 lbs. of production guarantee (e.g. 600 x 75%)

Formulated Producer Projected Price @ 600 lbs. is \$1.64/lb.

Total liability is \$73,800 (100 x 450 x 1.64)

Type	Contract Month	Projected Price Discovery Period		Harvest Price Discovery Period	
		Beginning Date	Ending Date	Beginning Date	Ending Date
Spring	November	December 15	January 15	October 1	October 31

Yield Protection Coverage

These decisions result in a 0.05 (i.e. 5%) premium rate

Total premium is \$3,690 ($73,800 \times 0.05$)

Adverse conditions occur:

- Drought led to reduced weaning weight

Actual weaning weight was 362 lbs.

Formulated Producer Harvest Price @600 lbs. is \$1.55

Prices per lb. are adjusted to reflect actual weaning weight of 362 to \$1.83/lb.

Total Value at Weaning is \$66,246 ($100 \times 362 \times \1.83)

Loss is \$7,554 ($(73,800 - 66,246) \times 100$ share)

Total payment is \$4,064 ($7,754 - 3,690$)

Revenue Protection Coverage

These decisions result in a 0.11 (i.e. 11%) premium rate

Formulated Harvest Price @600 lbs. is \$1.55/lb.

Total premium is \$8,118 ($73,800 \times 0.11$)

Actual Adjusted Harvest Price at 362 lbs. is \$1.76/lb.

Adverse conditions occur:

- Drought led to reduced weaning weight
- Two calf deaths

Total Value at Weaning is \$62,438 ($98 \times 362 \times \1.76)

Actual weaning weight was 362 lbs.

Loss is \$11,362 ($((73,800 - 62,438) \times 100 \text{ share})$)

***Use the greater of the Projected Price or Harvest Price to calculate the liability**

Total payment is \$3,244 ($11,362 - 8,118$)

Revenue Protection Coverage with Harvest Price Exclusion

These decisions result in a 0.08 (i.e. 8%) premium rate

Total premium is \$5,904 ($73,800 \times 0.08$)

Adverse conditions occur:

- Drought led to reduced weaning weight
- Two calf deaths

Actual weaning weight was 362 lbs.

Actual Adjusted Harvest Price at 362 lbs. is \$1.99/lb.

Total Value at Weaning is \$70,597 ($98 \times 362 \times \1.99)

Loss is \$3,203 ($(73,800 - 70,597) \times 100$ share)

Total payment is -\$2,701 ($3,203 - 5,904$)

COMMENTS, QUESTIONS, AND SUGGESTIONS

Contact Information

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402-472-2164

Foundation Account

<https://nufoundation.org/fund/01150800/>

(i.e. “Livestock Marketing & Risk Management”)



Department of Agricultural Economics

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