Pasture, Rangeland, Forage Vegetation Index Plan of Insurance

This presentation does not replace or supersede any procedures or modify any provisions contained in the complete insurance policy.
Introduction and Program Overview

Introduction and Overview
Science Behind the Program
Program Basics
Additional Tools and Information
Detailed Example
Introduction

- Beginning with the 2007 CY
Challenges

- Crop challenges
  - Various plant species
  - Timing of plant growth
  - Crop continuously harvested via livestock
  - Lack of individual/industry data
  - Vast range of management practices across the industry
  - Publicly announced prices not available
Crop Types

- **Grazingland**
  - Established acreage of forage
  - Intended for grazing by livestock
  - Acreage must be suitable for grazing

- **Hayland**
  - Established acreage of perennial forage
  - Intended for haying
  - Acreage must be suitable for haying
Program Overview

- GRP program
  - Group plan
    - Losses cover an area
  - No individual coverage
  - Index – based on greenness
    - Not measuring actual individual production
  - No loss adjustments, records, etc.
  - Timely payments
  - Does not reward poor management practices
Program Overview

- Index background
  - Lack of actual producer/industry production data
  - No consistent and sound methodology for measuring production for the crop
  - The deviation from long-term normal NDVI is used to establish the index
  - Crop ‘greenness’ reflectivity has a high degree of correlation to forage production
Program Overview

Area of insurance = ~ 4.8 x 4.8 mile grids
Program Overview

- Index Intervals

- Multiple Intervals offered – 4

- Crop Year divided into 4, 3-month Intervals for each grid

- Ability for producers to manage appropriate timing risks
  - Correlate to individual growth patterns and production seasons

- The 3-month Intervals provide for greater reaction to forage reduction events vs. a yearly average
Program Overview

- Index Intervals

Intervals
4, 3-month

Crop Year
12 months
Begins April 1st

Note: Actual dates discussed in Program Basics
Program Overview

- **Index Intervals**
  - Producers may select more than 1 Interval
    - The purpose of the program is to insure annual forage production
    - Minimum amount if more than one Interval is selected is 10%
Program Overview

- **Index Intervals**
  - Minimizes dependency on subjective pre-determined forage growing seasons
  - Maintains consistency across the country
    - Allows for regional and local variances
    - Allows individual freedom to select appropriate Intervals
  - Index Intervals are mutually exclusive
    - One index does not effect the others
    - All rated separately
    - These Intervals act as ‘mini-insurance periods’
## Index Intervals

<table>
<thead>
<tr>
<th>INDEX INTERVALS</th>
<th>START DATE</th>
<th>END DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(231) Index Interval I</td>
<td>April 1</td>
<td>June 30</td>
</tr>
<tr>
<td>(232) Index Interval II</td>
<td>July 1</td>
<td>September 30</td>
</tr>
<tr>
<td>(233) Index Interval III</td>
<td>October 1</td>
<td>December 31</td>
</tr>
<tr>
<td>(234) Index Interval IV</td>
<td>January 1</td>
<td>March 31</td>
</tr>
</tbody>
</table>

I  II  III  IV
Program Overview

- Coverage Levels
  - Percentages available: 90, 85, 80, 75, and 70
  - Consistent with other GRP programs
  - Higher coverage levels reduce basis risk
    - Correlates closer to individual experience

- Sales Closing Date & Acreage Reporting Date
  - November 30th
Program Overview

- Rating
  - Each grid, Index Interval, and coverage level is individually rated
    - No economic advantage of insuring in one scenario vs. another
    - Encourages producers to select a scenario that best mitigates their operation/production risks
Program Overview

- Not required to insure 100% of acreage
  - Forage utilized in the annual grazing or hay cycle can be insured without insuring all acreage
  - All acres within a property may not be productive, e.g., rocky areas, submerged areas
  - Provides additional flexibility for the insured to design the coverage to their specific needs
  - Because the program is a group program and other programs are not available, there is no opportunity to ‘move’ production
Program Overview

- Program supported via internet
  - Provides the most efficient and effective way to deliver the program
  - Allows access to the mapping tools
    - Locate grazing areas and associated Grid ID numbers
  - Provides access to the historical indices
  - Allows access to all relevant data, materials, and tools associated with the program
Science and Technology
Behind the Program
Crop Biology

- The program addresses forage-based production systems on land areas producing primarily perennial vegetation.
- Comprised of diverse plant communities and mixtures:
  - Perennial and annual
  - Warm season and cool season
  - Different growth habits over extended time periods
- Because of the nature of forage-based systems the program is designed to insure the annual production.
Based on the Normalized Difference Vegetation Index (NDVI) data derived from satellites observing the changes in greenness of vegetation of the earth.

The plan does not explicitly predict individual forage production.

- It relates to the amount of vegetation on earth and the changes in greenness over time.
- This is correlated with forage production.
Program Technology

- Historical data since 1989

- Data updated every 14 days

- Grids are 8km
  - Data collected in 1km grids – aggregated up to 8km grids
  - ~ 4.8 x 4.8 miles in size, and used in many other national programs
Grid Example
Program Basics
Basic Definitions

- **Insurable Acreage**: Hayland and grazingland that is not planted annually
  - Overseeding into acreage of existing forage crops is acceptable
  - Annually planted crops currently not insurable
  - Insurable acres will consist of the total number of acres suitable for insurance under these crop provisions
    - Includes both insured acres and uninsured acres
Basic Definitions

- **Insured Acres**: The number of insurable acres selected to be insured by a producer
  - May choose to insure either Grazingland, Hayland, or both
  - Not required to insure 100% of the crop type(s)
    - If the insured chooses to insure the crop types under this policy they cannot insure the same crop under any other FCIC subsidized program
Basic Definitions

- **County Base Value:** Established production value of grazingland and hayland forage
  - Only one value per county for each crop type

- **Productivity Factor:** A percentage multiplier allowing the insured to individualize coverage based on their individual crop productivity
  - Insured selects between 60% and 150%
    - Only one productivity factor may be selected per county and crop type
Basic Definitions

- **Policy Protection per Unit**: Dollar amount of protection per acre, multiplied by the insured acres, multiplied by the producer’s share of the unit for each grid

**EXAMPLE:**

$ \text{Amount of Protection/ac} = $18.00, \text{Insured Acres} = 1,000, \text{Share} = 100\%, \text{50\% Interval II, 50\% Interval III}$

*For:*  
Index Interval II: $18.00 \times 500 \text{ ac} \times 100\% \text{ (share)} = $9,000  
Index Interval III: $18.00 \times 500 \text{ ac} \times 100\% \text{ (share)} = $9,000

- **Policy Protection**: The sum of the policy protection per units ($18,000)
Program Dates

- 08/31: Contract Change
- 11/30: Sales Closing / Acreage Reporting
- 04/01: Start of Crop Year
- 10/01: Premium Billing
- 03/31: End of Crop Year
Index Definitions

- **Expected Grid Index:** Based on the historical mean accumulated NDVI values by Index Interval, expressed as a percentage; EGI = 100

- **Final Grid Index:** Based on the current NDVI values for each Index Interval
  - If current data represents a 40% reduction, then FGI = 60

- **Trigger Grid Index:** The selected coverage level multiplied by the Expected Grid Index
  - *i.e.* - Coverage Level = 85; then Trigger Grid Index = 85
  - If the final grid index falls below the trigger grid index, the insured may be due an indemnity
Rates and Premiums

- **Premium Rate**
  - Applied to cover risk
    - Based on the level of risk with each scenario
    - Each scenario independently rated
  - Not an application fee (ie., NAP)

- **Subsidy**
  - Premium is subsidized by USDA

<table>
<thead>
<tr>
<th>Coverage Level</th>
<th>Subsidy</th>
</tr>
</thead>
<tbody>
<tr>
<td>70%</td>
<td>64%</td>
</tr>
<tr>
<td>75%</td>
<td>64%</td>
</tr>
<tr>
<td>80%</td>
<td>59%</td>
</tr>
<tr>
<td>85%</td>
<td>59%</td>
</tr>
<tr>
<td>90%</td>
<td>55%</td>
</tr>
</tbody>
</table>
Trigger and Indemnity Example

EXAMPLE:
Trigger Grid Index (Coverage Level) = 85

Final Grid Index: Interval II = 90, Interval III = 60
Payment Calculation Factor =
Index Interval II:  \((85 - 90)/85 = 0\) No indemnity due (90 > TGI)
Index Interval III:  \((85 - 60)/85 = 0.294\)

Total Indemnity = $2,646
Index Interval II = $0
Index Interval III = \((9,000 \times 0.294) = $2,646\)
\[ \{(18.00 \times 500 \text{ (acres in III)} \times 1.0 \text{ (share)}) \times 0.294 = \$2,646 \]
Grid ID Selection

- **Grid ID**: A specific code associated with each grid

- **Point of Reference**: A designated point, identifiable by longitude and latitude
  - Selected by the insured
  - Point that best represents the insured acreage
  - This determines the Grid ID for insurance
Grid ID Selection

- Certify the points of reference are representative of the acreage assigned to each Grid ID and the amount of acreage in each Grid ID(s)
  - Example: if the contiguous acreage is located in four grids the acreage can be separated into two, three, or four grids – or left all in one grid
  - The same acres cannot be insured in more than one Grid ID or county

- Determine the point of reference and corresponding Grid ID by Sales Closing Date
Examples of Determining Grid ID(s)

- Contiguous Acreage – One Grid
- The insured picks one point of reference on the property
Examples of Determining Grid ID(s)

- Contiguous Acreage – Multiple Grids, Counties, and/or States (Combined)
- The insured picks one point of reference in the contiguous acreage (could pick Grid 1 or Grid 2)
Examples of Determining Grid ID(s)

- Contiguous Acreage – Multiple Grids, Counties, and/or States (Separated)
- The insured selects one point of reference in each Grid and assigns the number of acres

![Diagram showing grid ID example with 35 acres and 15 acres]
Examples of Determining Grid ID(s)

- Determining the Grid ID(s) for Non-Contiguous Acreage (multiple properties)
  - A point of reference must be selected for each separate, non-contiguous acreage
  - The steps in determining the point of reference are similar to the steps outlined for contiguous acreage, simply repeated for each non-contiguous acreage to be insured
Examples of Determining Grid ID(s)

- The insured has two separate acreage locations in two grids
- The insured picks a point of reference in Grid 1 and a point of reference in Grid 4 and insures the two properties under two separate Grid ID’s

Grid 1

+ 50 Acres

Grid 2

Grid 3

Grid 4

+ 50 Acres
Examples of Determining Grid ID(s)

- The insured has two separate acreage locations in three grids
- First, the insured would pick a point of reference in Grid 4
- The insured then has the option of combining his acreage in Grid 1 and Grid 2, or insuring them separately by grid
Examples of Determining Grid ID(s)

- If the non-contiguous acreage is located in the same grid
- The non-contiguous acreage will be combined and given a single Grid ID

<table>
<thead>
<tr>
<th>Grid 1</th>
<th>Grid 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Grid 3</td>
<td>Grid 4</td>
</tr>
</tbody>
</table>
Grid ID Selection Test

Grid 1
- County A
  - A
    - 110 Acres

Grid 2
- Total Ac: 150
  - B
    - 100 Acres
  - 50 Acres

Grid 3
- County B
  - C
    - 100 Acres

Grid 4
- D
  - 120 Acres
- E
  - 125 Acres

All fields = grazinglands
Grid ID Selection Test

**Grid 1**
- County A
  - A: 110 Acres

**Grid 2**
- County B
  - B: 100 Acres
  - Total Ac: 150
  - 50 Acres

**Grid 3**
- County A
  - C: 100 Acres
  - Total Ac: 140
  - 40 Acres Hayland

**Grid 4**
- County B
  - D: 120 Acres
  - E: 125 Acres
Use of the Website and Information Needed
Topographical Map

Map Driven Weather Grid ID Locator for Pasture, Rangeland, Forage Vegetation Index Insurance Program

12 mi N of Woodward, Harper County, Oklahoma, United States
Latitude=36.6066, Longitude=-99.3195, NDVI 8km Grid ID = 121378.

Map Size: Small Medium Large Extra Large

This website is a product of RMA, GME, and CRBIT. Powered by TerraServer. Image courtesy of the U.S. Geological Survey.
Determining Grid ID(s) – Basic Steps

- Type in the city and/or county name where the property is located
- Select the city or county from the possible matches, a topo map for the area will be displayed
- Narrow the search by selecting an area near the actual location of the insured’s property
- Once the applicant has located the general area, it is recommended they continue to refine the search by switching to the photo maps
- Using the topo map, photo map, or combination of both, choose an appropriate resolution for proper identification of the property boundaries and corresponding Grid ID(s)
Determining Grid ID(s) – Additional Steps

- The insured then selects **one** point of reference on the property by moving the cross marker (‘+’) to that location
  - Grid ID is listed at the top of the screen (and on the map itself)

- A Print Icon is in the lower right hand corner of the screen
  - This printed map can be used as a record to verify the Grid ID
  - Once printed, the property boundary can also be outlined and initialed by the insured for verification purposes

- The insured must certify the point of reference
Information Agents Need to Collect

- Insurable Acres per County
- Share
- Producer Selections (for each County/State combination):
  - Crop Type
  - Grid IDs
  - Coverage Level
  - Productivity Factor
  - Index Intervals
  - Insured Acres
  - Amount of Insurance per Index Interval
# Worksheet Information - Completed

**Pasture, Rangeland, Forage Vegetation Index Worksheet**

1. Insured’s Name: ____________________________  
2. Date: ___/___/____  
3. State: ______ (___)  
4. County: ____________________________ (___)  
5. Crop Type: ____________________________  
6. Coverage Level/Trigger Index: ___________  
7. Productivity Factor: ___________ %  
8. $ Amt. of Prot/Ac: ____________________________  

<table>
<thead>
<tr>
<th>Grid ID</th>
<th>Insurable Acreage</th>
<th>Insured Acreage</th>
<th>Share</th>
<th>Index Interval</th>
<th>Unit Number</th>
<th>% Insured acreage/Unit</th>
<th>% Insured acreage/Unit</th>
<th>Policy Protection/Unit</th>
<th>Premium Rate/$100</th>
<th>Premium/Unit</th>
<th>Premium Subsidy Amt</th>
<th>Premium Due From Grower</th>
</tr>
</thead>
<tbody>
<tr>
<td>378811</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>1</td>
<td>000100</td>
<td>100</td>
<td>100</td>
<td>1,800</td>
<td>12.00</td>
<td>216</td>
<td>127</td>
<td>89</td>
</tr>
<tr>
<td>378812</td>
<td>50</td>
<td>50</td>
<td>100</td>
<td>1</td>
<td>000100</td>
<td>10</td>
<td>5</td>
<td>90</td>
<td>13.50</td>
<td>12</td>
<td>7</td>
<td>5</td>
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<tr>
<td>378813</td>
<td>100</td>
<td>100</td>
<td>50</td>
<td>1</td>
<td>000100</td>
<td>50</td>
<td>50</td>
<td>450</td>
<td>13.00</td>
<td>59</td>
<td>35</td>
<td>24</td>
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<tr>
<td>378814</td>
<td>245</td>
<td>245</td>
<td>100</td>
<td>1</td>
<td>000100</td>
<td>50</td>
<td>50</td>
<td>450</td>
<td>12.00</td>
<td>54</td>
<td>32</td>
<td>22</td>
</tr>
</tbody>
</table>

**County Totals**

- 10a. 495
- 11a. 495
- 16a. 495
- 17a. $8,010
- 19a. $1,047
- 20a. $5,177
- 21a. $430

Prepared by: ____________________________  
(Agent’s Signature)  
Insured’s Initials: ____________________________
Additional Program Tools and Information
The calculator is not part of the program
- Not required to buy insurance
- Provides estimates
- Values are based on current information to derive historical estimates of indemnity, premium, and subsidy numbers
- May not match the official figures released by FCIC in past years
- Contact a qualified insurance agent for actual premium quotes
Decision Tool: Example

**Pasture, Rangeland, Forage Vegetation Index Decision Tool**

Please complete the following information (Yellow areas):

- **State**: Colorado
- **County**: Archuleta
- **Grid ID**: 113252
- **Insured Crop Type**: Grazingland
- **Coverage Level (%)**: 85
- **Productivity Factor (%)**: 120
- **Share (%):** 100
- **Insurable Acres**: 245
- **Sample Year**: 1995

This tool provides estimates for indemnity, premium, and subsidy values for the Pasture, Rangeland, Forage Vegetation Index Pilot Program. These values are based on current information to derive historical estimates of indemnity, premium, and subsidy numbers and may not match the official figures released by FPDIC in past years. Contact a qualified insurance agent for actual premium quotes.

<table>
<thead>
<tr>
<th>Index Interval</th>
<th>Insured Acres per Index Interval</th>
<th>Policy Protection per Unit</th>
<th>Premium Rate per $100</th>
<th>Total Premium ($/ac)</th>
<th>Premium Subsidy ($/ac)</th>
<th>Producer Premium ($/ac)</th>
<th>Actual Index Value</th>
<th>Indemnity ($/ac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>122.5</td>
<td>$1,455</td>
<td>6.92</td>
<td>$0.82</td>
<td>$0.49</td>
<td>$0.34</td>
<td>43.8</td>
<td>$5.76</td>
</tr>
<tr>
<td>II</td>
<td>73.5</td>
<td>$873</td>
<td>6.76</td>
<td>$0.60</td>
<td>$0.47</td>
<td>$0.33</td>
<td>107.1</td>
<td>$0.00</td>
</tr>
</tbody>
</table>

**County Base Value per Acre**: $11.85
**Dollar Amount of Protection per Acre**: $11.88
**Total Insured Acres**: 245
**Total Policy Protection**: $2,911
**Subsidy Level**: 59%

Input information in all the yellow fields

Base information provided
Decision Tool: Example

Insert the number of acres for each Index Interval (minimum percentages specified in the Special Provisions)

Results

Once information is entered, click Submit Query

(if any information is changed must resubmit query)
Additional Information

- **Historical Data**
  - Look up values since 1989

- **Lookup Grid ID using Longitude/Latitude**
  - Must be submitted in the correct data format

- **RMA premium calculator**
Summary

- A new program for a commodity with little or no history of crop insurance
- GRP based program
- Losses determined by index (not individual production)
- Terminology differences
- Producer is allowed or required to make choices
- Can tailor the program to producer needs
Joe Rancher Contacts His Agent

A step-by-step example
Determining Grid ID’s

Joe Rancher has 645 acres of insurable grazingland and hayland in two counties. His insurable acreage is contained in five non-contiguous properties: A, B, C, D, and E.

Note: Actual Grid IDs will have 6 digits.
Decision

- Joe Rancher decides to insure the four properties (535 insurable acres) located in County B and leave property A uninsured in County A.

- Had he chosen to insure Property A in County A, he would have had to insure that acreage separately because Property A is non-contiguous from his other properties and located in a different county.
Decision

- Property B – Contiguous acreage located in more than one grid
  - Decides to separate the property into two Grid IDs, with 100 insured acreage in Grid 1 and 50 insured acreage in Grid 2. He picks a reference point in each grid.
Property C – Contiguous acreage spread into more than one county, which contains two crop types (both grazingland and hayland with 50% share)

- Decides to pick a point of reference in County B and use that point of reference to represent all the contiguous insurable grazingland acreage (100 acres) in both County A and County B (decides not to insure haylands)
Decision

- Property D and E – Non-Contiguous acreage located in a single grid (both grazingland with 100% share)
  - Joe Rancher combines Properties D and E and insures all 245 acres under Grid ID 4
Joe Rancher selects for grazingland:
Coverage Level = 85%
Productivity Factor = 120%
County Base Value = $17.65

Dollar Amount of Production per Acre
\[= 17.65 \times 0.85 \times 1.20\]
\[= 18.00 \text{ per Acre}\]
He can designate specific percentage of the insured acreage to more than one of the Index Intervals for each Grid ID.

He finds that if he chooses an Interval he must place at least 10% of his insured acreage to that Interval for that Grid ID.

Note: Interval selections do not have to be contiguous.
Policy Protection per Unit (09 Units)

<table>
<thead>
<tr>
<th>Grid ID</th>
<th>Index Interval</th>
<th>Unit Number</th>
<th>Policy Protection/Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid 1</td>
<td>I ($18.00 X 100ac X 1.0)</td>
<td>00100</td>
<td>$1,800</td>
</tr>
<tr>
<td>Insured acreage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100% share</td>
<td>II</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>III</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grid 2</td>
<td>I ($18.00 X 5ac X 1.0)</td>
<td>00100</td>
<td>$90</td>
</tr>
<tr>
<td>Insured acreage</td>
<td>II ($18.00 X 25ac X 1.0)</td>
<td>00200</td>
<td>$450</td>
</tr>
<tr>
<td>50% share</td>
<td>III</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IV ($18.00 X 20ac X 1.0)</td>
<td>00300</td>
<td>$360</td>
</tr>
<tr>
<td>Grid 3</td>
<td>I ($18.00 X 50ac X 0.50)</td>
<td>00100</td>
<td>$450</td>
</tr>
<tr>
<td>Insured acreage</td>
<td>II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100% share</td>
<td>III</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IV ($18.00 X 50ac X 0.50)</td>
<td>00200</td>
<td>$450</td>
</tr>
<tr>
<td>Grid 4</td>
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<td>Insured acreage</td>
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<td>100% share</td>
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<td>$882</td>
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<tr>
<td></td>
<td>IV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy Protection</td>
<td></td>
<td></td>
<td>$8,010</td>
</tr>
</tbody>
</table>
Premium

- Joe Rancher and his agent look up the applicable premium rate using the premium rate tables

- Premium/unit (Index Interval) =
  \[ \$ \text{ amount of protection/acre} \times \text{number of insured acres/unit} \times \text{premium rate} \times \text{adjustment factor of 0.01} \times \text{share} \]
## Summary of Premium

<table>
<thead>
<tr>
<th>Grid ID</th>
<th>Insured Acreage &amp; Share</th>
<th>Index Interval</th>
<th>Unit Number</th>
<th>Policy Protection/unit</th>
<th>Premium Rate/$100</th>
<th>Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid 1</td>
<td>100ac 100% share</td>
<td>I</td>
<td>00100</td>
<td>($18.00 \times 100 \text{ ac} \times 1.0 \text{ share}) = $1,800</td>
<td>$12.00</td>
<td>$216</td>
</tr>
<tr>
<td></td>
<td></td>
<td>II</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>III</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>IV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
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<tr>
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<td>($18.00 \times 5 \text{ ac} \times 1.0 \text{ share}) = $90.00</td>
<td>$13.50</td>
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<td></td>
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<td>($18.00 \times 25 \text{ ac} \times 1.0 \text{ share}) = $450.00</td>
<td>$13.00</td>
<td>$59</td>
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<td>IV</td>
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<td>100ac 50% share</td>
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<td>($18.00 \times 50 \text{ ac} \times 0.50 \text{ share}) = $450.00</td>
<td>$13.00</td>
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<td>IV</td>
<td>00200</td>
<td>($18.00 \times 50 \text{ ac} \times 0.50 \text{ share}) = $450.00</td>
<td>$12.00</td>
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<td><strong>$1,800.00</strong></td>
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<td>($18.00 \times 245 \text{ ac} \times 1.0 \text{ share}) = $2,205.00</td>
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<td>($18.00 \times 73.5 \text{ ac} \times 1.0 \text{ share}) = $1,323.00</td>
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<td>($18.00 \times 49 \text{ ac} \times 1.0 \text{ share}) = $882.00</td>
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Premium Subsidy Amount

- Joe Rancher and his agent refer to the GRP subsidy tables
  - For the coverage level of 85%, the applicable subsidy percentage is 59%

- Premium Subsidy/Unit =
  - Premium/unit \times \text{subsidy percentage}
  - Example: $216 \times 0.59 = $127
Premium Due from Producer

- The Premium due from Producer is the result of the Premium/unit minus the Subsidy/unit

- Premium per unit – Premium subsidy per unit
  Example: $216 - $127 = $89

- They sum the Subsidy and Producer Premiums to determine the Totals
## Summary of Premium, Subsidy, and Producer Premium

<table>
<thead>
<tr>
<th>Grid ID</th>
<th>Index Interval</th>
<th>Unit Number</th>
<th>Premiums</th>
<th>Premium Subsidy</th>
<th>Producer Premium</th>
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<tr>
<td><strong>Totals</strong></td>
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<td><strong>$617</strong></td>
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# Worksheet with All Information

## Pasture, Rangeland, Forage Vegetation Index Worksheet

1. Insured’s Name: Joe B. Rancher  
2. Date: 10/15/2006  
3. State: CO (08)  
4. County: Archuleta (007)  
5. Crop Type: Grazingland  
6. Coverage Level/Trigger Index: 85  
7. Productivity Factor: 120%  
8. $ Amt. of Prot/Ac: 18.00  

<table>
<thead>
<tr>
<th>Grid ID</th>
<th>Insurable Acreage</th>
<th>Insured Acreage</th>
<th>Share</th>
<th>Index Interval</th>
<th>Unit Number</th>
<th>% Insured acreage/Unit</th>
<th>% Insured acreage/Unit</th>
<th>Policy Protection/Unit</th>
<th>Premium Rate/$100</th>
<th>Premium/Unit</th>
<th>Premium Subsidy Amt</th>
<th>Premium Due From Grower</th>
</tr>
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<tbody>
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</tbody>
</table>

Prepared by: Big Ben Agent (Agent’s Signature)  
Insured’s Initials: J.B.R.
Final Grid Index and Indemnities
Final and Trigger Grid Indexes

Trigger grid index is 85 for all grids and Index Intervals.

<table>
<thead>
<tr>
<th>Grid ID</th>
<th>Index Interval</th>
<th>Unit Number</th>
<th>Final Grid Index</th>
<th>Above or Below Trigger</th>
</tr>
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<td>120</td>
<td>Above</td>
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<tr>
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<td>II</td>
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<tr>
<td>Grid 2</td>
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</tr>
<tr>
<td></td>
<td>II</td>
<td>00200</td>
<td>90</td>
<td>Above</td>
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<tr>
<td></td>
<td>III</td>
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</tr>
<tr>
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<td>IV</td>
<td>00300</td>
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</tr>
<tr>
<td>Grid 3</td>
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<td>110</td>
<td>Above</td>
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<td>II</td>
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<td>IV</td>
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<td>Grid 4</td>
<td>I</td>
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<td>120</td>
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<td>II</td>
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<td>IV</td>
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</tbody>
</table>
Calculating Indemnities

- **Payment calculation factor** =
  \[
  \frac{\text{trigger grid index} - \text{final grid index}}{\text{trigger grid index}}
  \]

- **Indemnity payment** =
  \[
  \text{payment calculation factor} \times \text{Policy protection per unit}
  \]
Example Calculations

- **Grid 4 – 245 Acres**
- **Index Interval I**: The final grid index of 120 is above the trigger grid index of 85. No indemnity is due.

- **Index Interval II**: The final grid index of 70 is below the trigger grid index of 85.
  
  Payment calculation factor = \( \frac{85 - 70}{85} \)
  
  = .176

  Indemnity payment = \( .176 \times 1,323.00 \)
  
  = $233

- **Index Interval III**: The final grid index of 60 is below the trigger grid index of 85.

  Payment calculation factor = \( \frac{85 - 60}{85} \)
  
  = .294

  Indemnity payment = \( .294 \times 882.00 \)
  
  = $259
Summary of Yearly Policy in Example

- Joe Rancher insured 495 acres of grazingland in four separate Grid ID’s

- Joe Rancher paid $430 in premium for $8,010 in protection

- A total indemnity of $687 will be due to Joe Rancher, for this County, for this crop year
Questions