

Pasture, Rangeland, Forage (PRF) Rainfall Index Insurance in Missouri



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Background on Missouri

- * Missouri is a significant forage-production state
- * 6.9 million acres in permanent pasture (USDA Census of Agriculture, 2007)
- * 3.7 million acres of hay harvested annually (USDA, 2012)

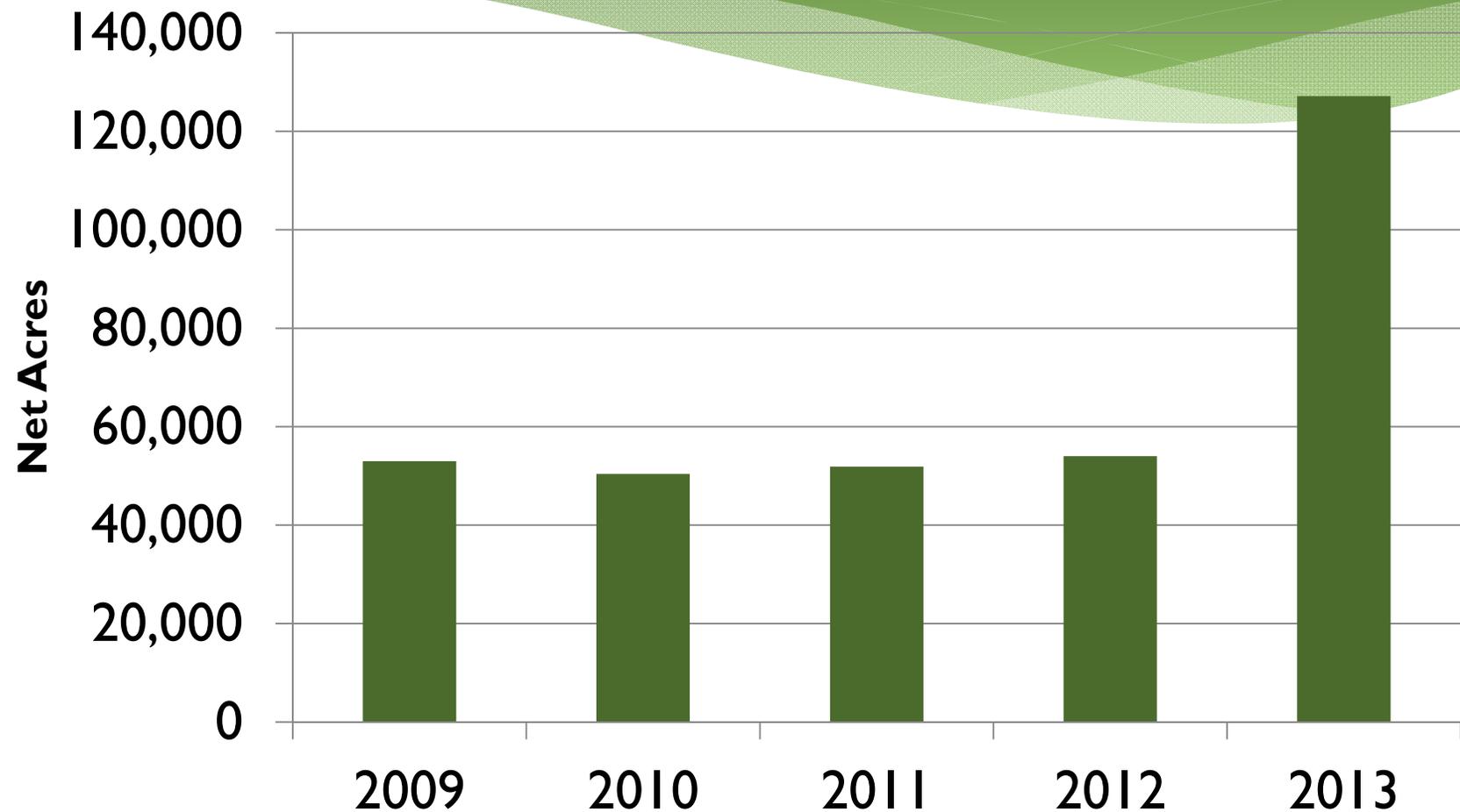


PRF Insurance Basics

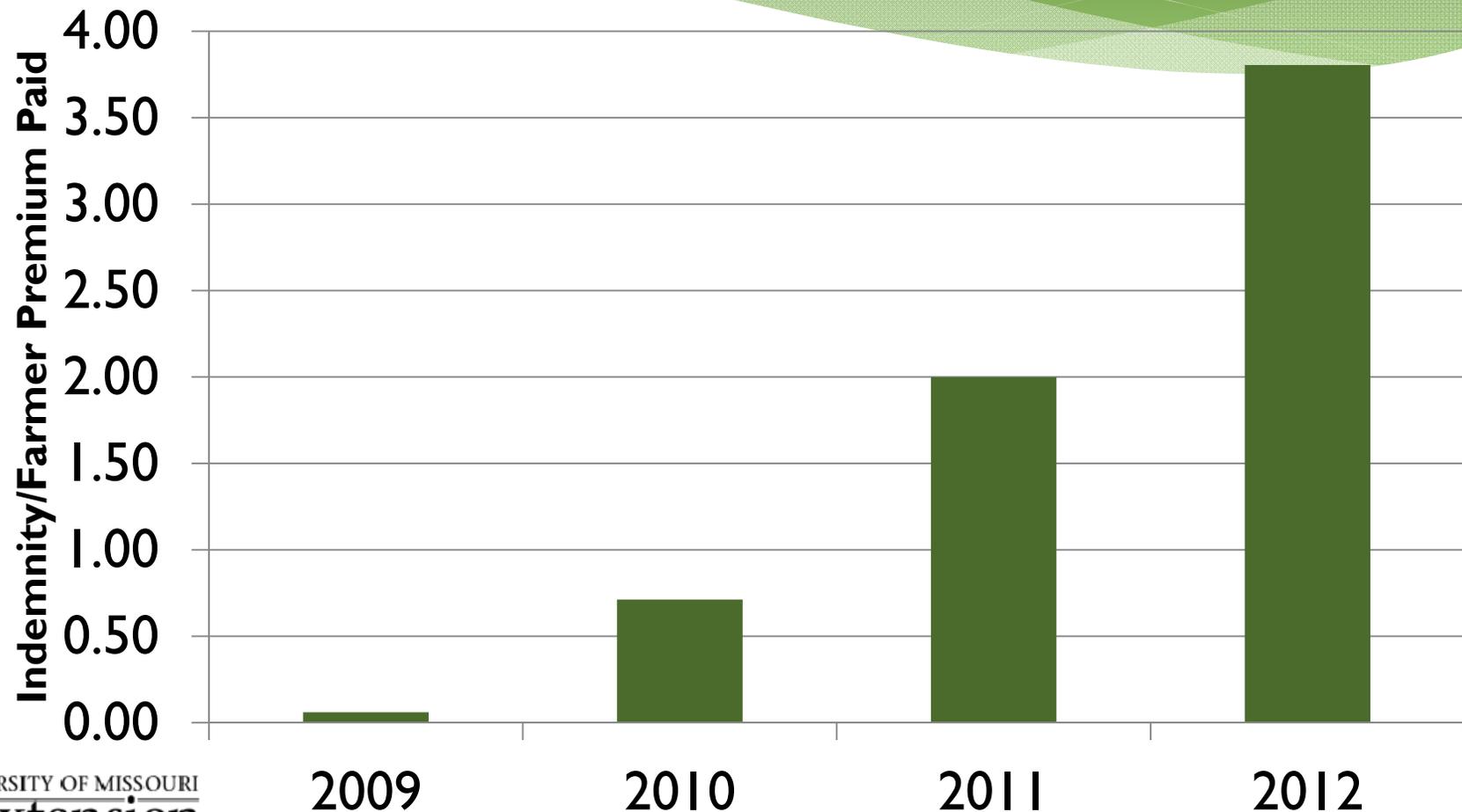
- * Developed by USDA RMA, available in Missouri since 2009
- * Mitigates forage production risk for forage and livestock producers
- * For Missouri, it is based on a rainfall index, which provides coverage when precipitation falls below an area's long-term, historical norm
- * Deadline for purchase: **November 15, 2013**



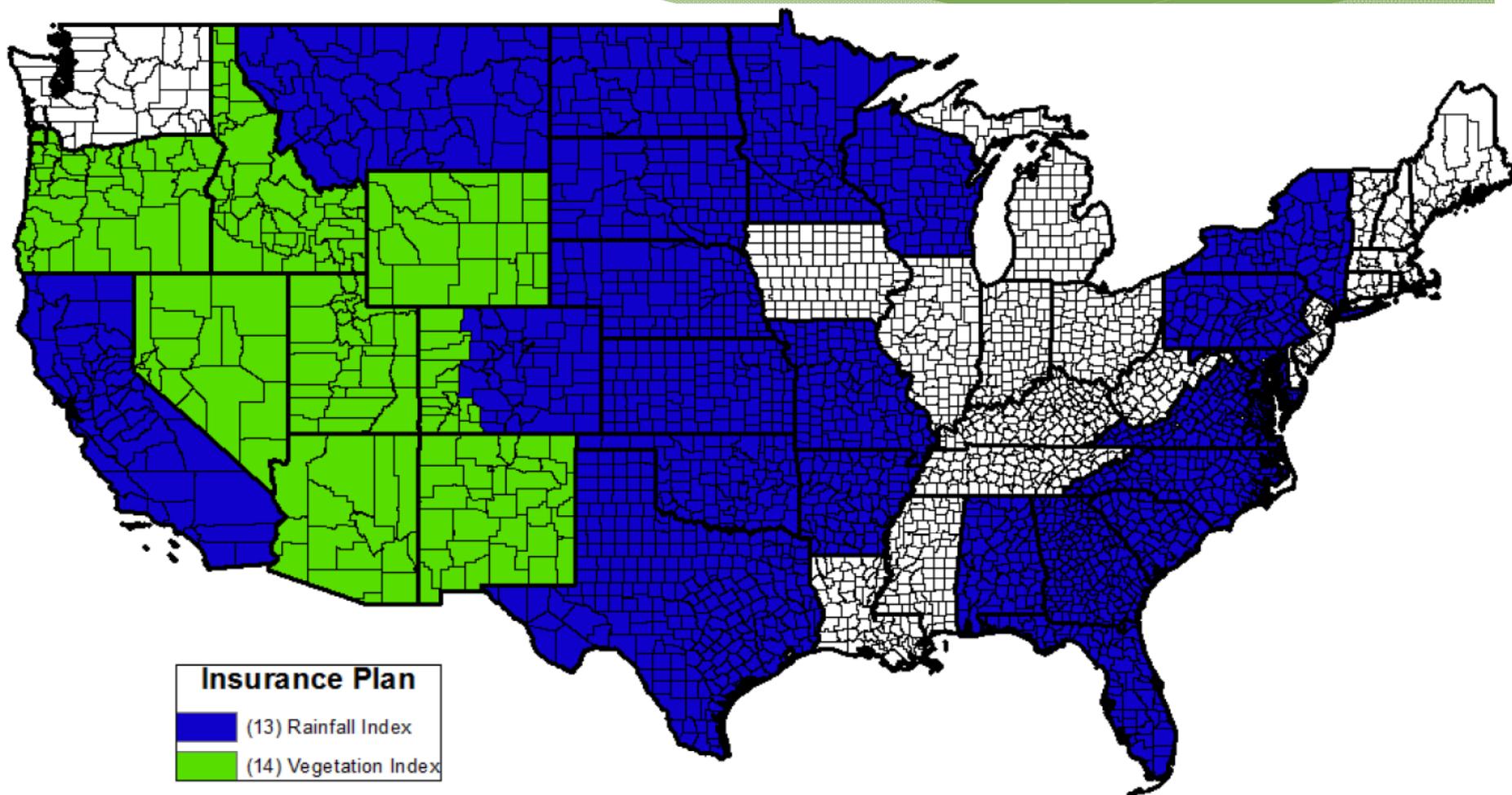
PRF Insurance – Missouri Acreage



PRF Insurance – Missouri Indemnity/Farmer Premium Paid



PRF Insurance Availability



How PRF Insurance Works

- * Rainfall index based on data from the NOAA Climate Prediction Center
- * Data is specific to grid locations (0.25 degrees in latitude by 0.25 degrees in longitude)
- * Rainfall index based on multiple weather stations' precipitation data (NOT INDIVIDUAL FARM DATA)
- * An indemnity is paid when precipitation falls below a chosen coverage level



Producer Choices

- * Different options include:
 - * Intended use
 - * Coverage level
 - * Productivity factor
 - * Index intervals
 - * Grid location



Intended Use

- * Producers select coverage for either grazing or haying purposes
- * Only one purpose may be chosen per policy, but producers can have multiple policies on the same farm
 - * Example: 50 acres in one field for grazing and another field of 50 acres for haying
- * RMA assigns a base county value for grid areas and each purpose
 - * Missouri in 2013: Grazing ranged from \$39.21 to \$43.17 per acre, haying at \$142.15 per acre



Coverage Level

- * Ranges from 70 to 90 percent
- * Establishes the rainfall deviation from the index when insurance pays an indemnity
- * Government subsidizes the program depending on the coverage level selected:
 - * Pays 51 percent of the premium at the 90 percent coverage level
 - * 55 percent for 80 and 85 coverage levels
 - * 59 percent for 70 and 75 coverage levels



Productivity Factor

- * Producers choose a productivity factor between 60 and 150 percent to further customize the policy
- * Adjusts the base county value (for haying or grazing) based on the productivity of the land
- * Example:
 - * Original county base value = \$142 per acre
 - * Producer selects a 150 percent productivity factor
 - * New protection level = \$213 per acre ($\$142 \times 150\%$)

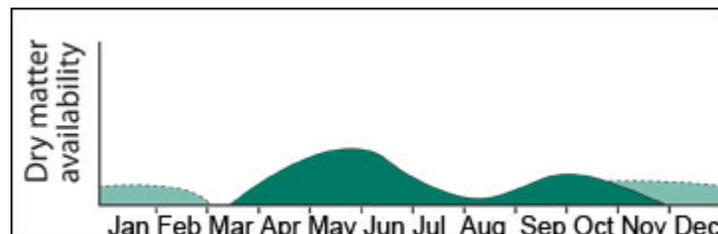


Index Intervals

- * Coverage is based on two month intervals
- * Consider type of forage, when precipitation is needed and intended use
- * Percent of value must be allocated across intervals to equal 100 percent.
 - * Minimum of 10 percent per interval
 - * Maximum of 60 percent per interval

PRF Index Intervals

- January and February
- February and March
- March and April
- April and May
- May and June
- June and July
- July and August
- August and September
- September and October
- October and November
- November and December

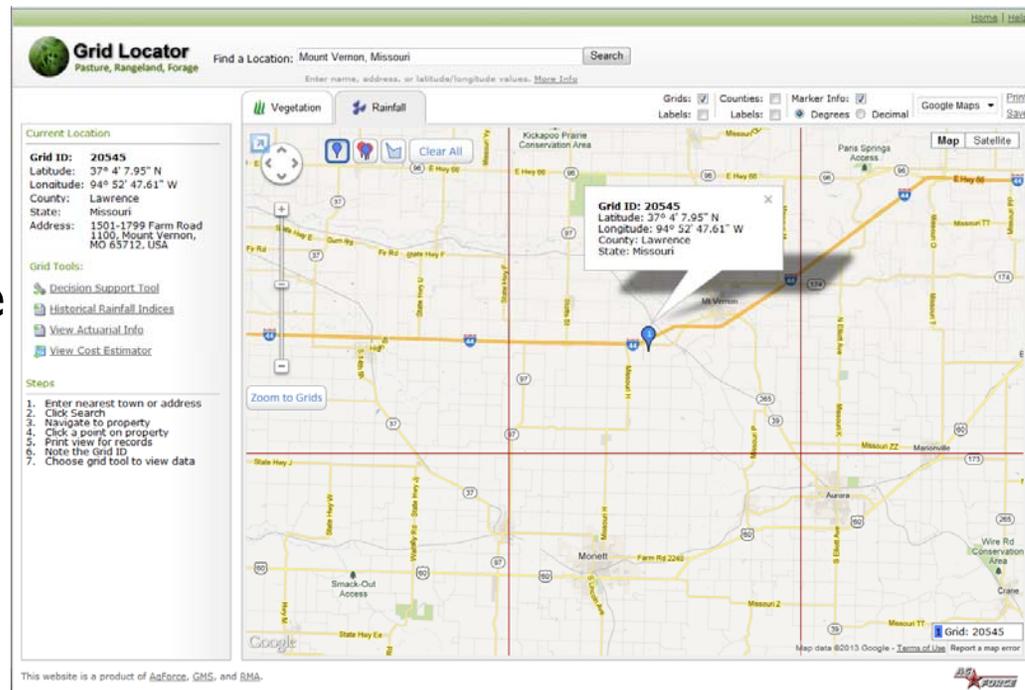


Yield distribution of tall fescue in Missouri
Source: MU Extension
Guide M181



Grid Location

- * Grid identification is based on a point of reference selected by the producer
- * Must be within the boundaries of the acreage to be insured
- * Non-contiguous land areas and different intended uses may require the use of multiple points



Indemnity Payments

- * Indemnities are paid when the interpolated precipitation is less than the trigger grid index
- * Trigger grid index is determined by coverage level selected (70 to 90 percent)
- * Indemnity payment calculation:
 - * $((\text{trigger index} - \text{rainfall index}) / \text{trigger index}) \times \text{policy protection} = \text{indemnity payment}$



PRF Insurance Indemnity Payment Example

- * Assumptions:
 - * \$5,000 policy protection for May-June interval
 - * 90 percent level of coverage (90 trigger grid index)
 - * Actual rainfall index value of 50 occurs
- * Calculation:
 - * $((\text{trigger index} - \text{rainfall index}) / \text{trigger index}) \times \text{policy protection} = \text{indemnity payment}$
- * Math:
 - * $((90 - 50) / 90) \times \$5000 = \$2,222$



PRF Insurance - Haying Example

- A producer in Lawrence County, MO, insures a high-quality alfalfa crop in 2012
- Grid location number of 20545 and intended use of land: haying
- Selected a 90 percent coverage level and 150 percent productivity factor
- Used May-June, July-Aug. and Sept.-Oct. index intervals at 40 percent, 40 percent, and 20 percent respectively

Index Interval	Percent of value	Producer premium per acre	Actual index value	Indemnity per acre
May-June	40	\$5.34	65.5	\$20.90
July-Aug.	40	\$5.15	62.2	\$23.71
Sept.-Oct.	20	\$3.47	127.6	\$0.00
Total	100	\$13.96	N/A	\$44.61



PRF Insurance - Grazing Example

- Same producer as before in Lawrence County, MO, insured in 2011
- Grid location number 20545 and intended use of land: grazing
- Selected an 90 percent coverage level and 150 percent productivity factor
- Used May-June, July-Aug. and Sept.-Oct. index intervals at 40 percent, 40 percent, and 20 percent respectively

Index interval	Percent of value	Producer premium per acre	Actual index value	Indemnity per acre
May-June	40	\$1.54	81.0	\$2.22
July-Aug.	40	\$1.48	69.4	\$5.07
Sept.-Oct.	20	\$1.00	78.2	\$1.45
Total	100	\$4.02	N/A	\$8.74



Decision Support Tool

- * Tool developed by RMA to look at historical PRF policy information
- * Allows users to select grid location and enter coverage options to view:
 - * Protection level
 - * Premiums
 - * Subsidies
 - * Index value
 - * Indemnities



Decision Support Tool

Pasture, Rangeland, Forage

This tool is for illustration purposes only. Your actual information may differ. For additional information, please [click here](#).

 Rainfall

 Vegetation

Please Select a Location:

State:

County:

Grid:



Protection Information

Intended Use:

Coverage Level (%):

Productivity Factor (%):

Insurable Interest (%):

Insured Acres:

Sample Year:

Graph

Type:
 Index Values Estimated Indemnities

Range:
 Start End

Intervals:
 Jan-Feb Feb-Mar Mar-Apr
 Apr-May May-Jun Jun-Jul
 Jul-Aug Aug-Sep Sep-Oct
 Oct-Nov Nov-Dec

Table Graph

Index Interval	Percent of Value (%)	Policy Protection per Unit	Premium Rate per \$100	Total Premium	Premium Subsidy	Producer Premium	Actual Index Value	Indemnity
Jan-Feb		\$0	17.38	\$0	\$0	\$0	81.8	\$0
Feb-Mar		\$0	16.09	\$0	\$0	\$0	140.3	\$0
Mar-Apr		\$0	13.51	\$0	\$0	\$0	145.6	\$0
Apr-May	N/A	\$0	11.08	\$0	\$0	\$0	110.6	\$0
May-Jun	40	\$7,676	14.19	\$1,089	\$555	\$534	65.5	\$2,090
Jun-Jul	N/A	\$0	15.33	\$0	\$0	\$0	31.9	\$0
Jul-Aug	40	\$7,676	13.67	\$1,049	\$534	\$515	62.2	\$2,371
Aug-Sep	N/A	\$0	15.23	\$0	\$0	\$0	121.9	\$0
Sep-Oct	20	\$3,838	18.46	\$708	\$361	\$347	127.6	\$0
Oct-Nov	N/A	\$0	18.85	\$0	\$0	\$0	78.0	\$0
Nov-Dec		\$0	19.42	\$0	\$0	\$0	47.4	\$0
Per Acre	N/A	N/A	N/A	\$28.46	\$14.50	\$13.96	N/A	\$44.61
Policy Total	100	\$19,190	N/A	\$2,846	\$1,450	\$1,396	N/A	\$4,461

County Base Value \$142.15
 Dollar Amount of Protection \$191.90
 Total Insured Acres 100
 Total Policy Protection \$19,190
 Subsidy Level 51%
 Maximum Percent of Value per Index Interval 60.0%

Calculate

 University of Missouri Extension

Horizon Point

Weather-based management tools for today's farmers



- * An educational program designed to make precise weather information available to Missouri farmers in a way that assists them in managing their business
- * Site-specific weather reports and advisories are sent to participating farmers via quickly downloaded emails



PRF Tool – Horizon Point

- * The University of Missouri Commercial Agriculture Program received a grant from the USDA Risk Management Agency to add a PRF Module to Horizon Point.
- * In February 2014 we will launch the PRF module
 - * Farmers can subscribe and have 9 months to examine how the NOAA precipitation estimates used in PRF insurance compare to their actual precipitation measurements.
 - * Farmers can observe daily what NOAA is reporting as precipitation on specific grids – provide transparency in the insurance product.



Additional Information

- * For more information on PRF insurance, contact a crop insurance agent.
 - * They are the best source to help you understand and customize a plan for your farm.
- * USDA RMA Agent Directory:
<http://www3.rma.usda.gov/apps/agents>
- * USDA RMA PRF Policy and Insurance Standards Handbook:
<http://www.rma.usda.gov/policies/pasturerangeforage>



Additional Information

- * Premium Rates, County Base Values, Subsidy Factors, Practices and Options can all be researched by county and grid location for PRF – Rainfall Index
 - * <http://webapp.rma.usda.gov/apps/actuarialinformationbrowser/>
- * PRF Insurance in Missouri Guide Sheet
 - * <http://extension.missouri.edu/p/G457>

