Cornhusker Economics   Agricultural Economics Department

2013

Pasture, Rangeland and Forage Insurance for Nebraskans': An Insurance Pilot Program to Protect Livestock and Hay Producers

Monte Vandeveer
University of Nebraska-Lincoln, mvandeveer2@unl.edu

Aaron Berger
University of Nebraska-Lincoln, aberger2@unl.edu

Matthew Stockton
University of Nebraska-Lincoln, mstockton2@unl.edu

Follow this and additional works at: http://digitalcommons.unl.edu/agecon_cornhusker

CORNHUSKER ECONOMICS

University of Nebraska–Lincoln Extension

Pasture, Rangeland and Forage Insurance for Nebraskans': An Insurance Pilot Program to Protect Livestock and Hay Producers

Market Report	Yr Ago	4 Wks Ago	8/23/13
Livestock and Products, Weekly Average			
Nebraska Slaughter Steers, 35-65% Choice, Live Weight.	$120.78	$121.28	$124.95
Nebraska Feeder Steers, Med. & Large Frame, 550-600 lb..	163.93	174.03	186.31
Nebraska Feeder Steers, Med. & Large Frame 750-800 lb.	146.62	152.56	158.53
Choice Boxed Beef, 600-750 lb. Carcass.	193.47	187.40	195.66
Western Corn Belt Base Hog Price Carcass, Negotiated.	79.84	98.63	89.49
Pork Carcass Cutout, 185 lb. Carcass, 51-52% Lean..	86.85	98.66	99.99
Slaughter Lambs, Ch. & Pr., Heavy, Wooled, South Dakota, Direct.	101.50	118.38	119.13
National Carcass Lamb Cutout, FOB.	321.01	282.92	279.77
Crops, Daily Spot Prices			
Wheat, No. 1, H.W. Imperial, bu..	7.98	6.72	6.71
Corn, No. 2, Yellow Nebraska City, bu..	8.04	5.62	6.21
Soybeans, No. 1, Yellow Nebraska City, bu..	17.39	12.94	14.18
Grain Sorghum, No. 2, Yellow Dorchester, cwt..	13.21	9.50	9.39
Oats, No. 2, Heavy Minneapolis, MN , bu.	3.97	3.64	3.63
Feed			
Alfalfa, Large Square Bales, Good to Premium, RFV 160-185 Northeast Nebraska, ton.	242.50	250.00	245.00
Alfalfa, Large Rounds, Good Platte Valley, ton..	220.00	180.00	162.50
Grass Hay, Large Rounds, Good Nebraska, ton.	155.00	155.00	160.00
Dried Distillers Grains, 10% Moisture, Nebraska Average.	312.50	225.00	225.00
Wet Distillers Grains, 65-70% Moisture, Nebraska Average.	118.00	80.50	72.50
*No Market			

Insurance for Grazing and Hay Lands

Nebraska farmers and ranchers who depend on grazing and hay production have a relatively new insurance product that may help provide some risk protection when drought conditions affect their forage production. This insurance product is called Pasture, Rangeland and Forage, or PRF coverage.

Like the more familiar multiple peril crop insurance policies used by most Nebraska crop producers, PRF coverage is backed by the Risk Management Agency (RMA), United States Department of Agriculture (USDA), while sales and claims are handled through local insurance agents. PRF was introduced a few years ago to provide some form of coverage for the hundreds of millions of acres of pasture land and perennial hay land throughout the United States which had no insurance coverage, or limited or uneven protection from other government programs.

PRF was introduced in Nebraska in 2009, and until 2012 used a coverage mechanism called a vegetative index. The vegetative index uses satellite imagery to measure the "greenness" of pasture and hay lands, and indemnity payments were made if conditions were sufficiently below some historic threshold. Out of about 25 million acres of grazing and hay lands in Nebraska, about 750,000 acres were covered under PRF in 2009. Participation had dropped to about 250,000 acres by 2012.

For the 2013 crop year, PRF coverage was switched to a rainfall index, which works by paying an indemnity if the rainfall index for the insured's area falls below some guaranteed level, specified as a percent of average rainfall. The rainfall index form of PRF has been used in other states, and may provide a better indicator of forage production where many weather reporting stations are sited relatively close to a producer's location.

Coverage Based on Rainfall Index

PRF coverage is different from traditional crop insurance in one very important aspect: its coverage is based on a rainfall index for a local area, rather than an individual operator's production. Rainfall is used as an indicator of forage production, since it is expected to vary closely with rainfall.

PRF in this sense is different from traditional crop insurance, in that PRF is single-peril coverage. That is, indemnities are paid only when rainfall is low. Other causes of loss, such as fire, heat, hail, frost or freeze, as well as insect or disease damage are not covered.

The rainfall index value calculated for an area reflects that period's observed precipitation in relation to a historical average. The index is calculated by expressing the current year's precipitation as a percentage of normal precipitation. For example, if this year's rainfall total for a particular time period was 88 percent of the historic average, the rainfall index would have a value of 88.

Rainfall Index Measured Over a Designated Grid Area

The rainfall index is based on the rainfall experience over an entire grid area, rather than the rainfall on an individual farm or ranch or at a specific weather station. In Nebraska, these grids measure range about 13 miles from east to west, and about 17 miles from north to south of the insured area. Rainfall index values are calculated by the federal government's National Oceanic and Atmospheric Administration (NOAA). NOAA utilizes daily rainfall measurements from the four closest reporting weather stations to a particular grid area to determine a composite rainfall value for that grid.

At sign-up, an insured plot of land is matched to a particular grid on the maps found on RMA's website. If a producer insures a contiguous plot of land which straddles a grid line, the land may be insured as one unit in either one of the grids, or it may be insured as separate units divided appropriately among the multiple grids in question.

Dollar Coverage Levels

PRF coverage works using a dollar value of coverage per acre. Each grid area has a base dollar value of production set by RMA for grazing or haying, and the producer then selects a productivity factor which adjusts this value up or down, from 60 to 150 percent of the base value.

Producers also select the guarantee level, which is the percentage of average rainfall at which insurance payments are triggered. Producers may select coverage levels ranging from 70 to 90 percent, in five percent increments. The 90 percent coverage level, for example, triggers indemnity payments whenever rainfall is below 90 percent of average.

The policy's liability is the maximum dollar coverage of the policy, the amount that would be paid in the event of a complete loss. On a per-acre basis, liability is calculated as the value of production times the guarantee level. For example, grazing land with a base dollar value of $20 per acre and a productivity factor of 150 percent would have a dollar value of production of $30 per acre (= $20 x 150%). If 90 percent coverage is selected, then the total liability or policy protection is $27 (= $30 x 90%) per acre.

Coverage Periods and Allocating Protection

Producers not only select the coverage rate, but also select time periods of coverage. These periods are called index intervals. Index intervals are two months long, and producers must insure each parcel of land for at least two intervals during the calendar year. Rainfall measurements over these two-month intervals are used to calculate the rainfall index values.

After selecting which index intervals to insure, producers must then allocate the total dollar value of protection across these intervals. Suppose our producer with $27 coverage per acre allocates 40 percent to the May-June interval, and 60 percent to the July-August interval. The liability per acre for the May-June period is thus $10.80 (= $27 x .4), and the liability for the July-August period is $16.20 (= $27 x .6). Some restrictions apply to these allocation percentages. If an index interval is selected, at least ten percent of the dollar value of coverage must be assigned to that time period. The maximum allocation for any index interval is 60 percent of the total dollar coverage.

Premiums and Subsidies

Producer premiums are calculated as the premium rate times the dollar coverage of the policy, times the producer's share of the premium. Premiums are calculated separately for each index interval, since each interval has its own dollar value of coverage and a separate rate reflecting the variability of rainfall in that time period.

Premiums are subsidized at a significant level. The federal government pays 51 percent of the premium for 90 percent coverage; 55 percent of the premium for 85 and 80 percent coverage; and 59 percent of the premium for 75 and 70 percent coverage.

Losses and Indemnities

An indemnity is paid only when the rainfall index for the entire grid area falls below the guaranteed level during an insured index interval. The size of the indemnity reflects the difference between the actual rainfall index over the period and the guaranteed level selected. A percentage loss value, called the Payment Calculation Factor, is calculated

as the difference between the guaranteed or trigger index level and the actual index level. This difference is then expressed as a percentage of the trigger index value. This payment calculation factor is then multiplied by the liability amount to determine the indemnity payment.

Effectiveness of PRF Coverage

Producers should consider several issues to determine whether PRF coverage is a useful risk management for their operation. The effectiveness of PRF coverage will depend on factors such as how closely the rainfall index value reflects one's own forage production, how premium costs compare to expected payouts and how well PRF coverage compensates when a loss occurs.

One challenge associated with PRF coverage has already been mentioned, namely that the insurance is based on the rainfall experience over the entire grid area. This may not exactly reflect the individual producer's experience. The location of the relevant weather stations relative to one's own land may also be an issue. This is more important in areas where official reporting stations may be somewhat sparse and distant from one's operation.

Timing of rain events is also an issue. Each index interval lasts two months, and one large rainfall occurring near the end of the interval may push the index value above the trigger level, even though forage production may have suffered up to that point. Similarly, large precipitation events with significant runoff could also create a gap between the rainfall index value and the actual forage production realized.

Selecting Index Intervals

Another issue is selecting the appropriate time periods to insure, and to allocate one's total dollar coverage across these intervals to minimize risk. As mentioned earlier, at least two index intervals must be selected. Which intervals are best?

From a risk management perspective, the producer should consider selecting those time periods in which precipitation has the greatest impact on forage production. For cool season forage production, precipitation during the months of March through June is critical. For warm season forage production, precipitation from April through July is key.

Those months which are critical for forage production in Nebraska also tend to be some of the least expensive to insure. Historically, these months tend to be the wettest months of the calendar year, as well as the times that rainfall is least variable (in relative terms).

Online Decision Aids

RMA has a number of web pages which provide details on the coverage outlined above. The basic information and a wide variety of links are available from the following site:

http://www.rma.usda.gov/policies/pasturerangeforage/

In addition to the policy information on the RMA website, more decision tools are available on a website operated by a private company which cooperates with RMA on PRF coverage. The first of these pages helps users to match their land's location to a particular grid value on a map. The URL for this site is:

http://agforceusa.com/rma/ri/prf/maps

From this page, a user can access links to related decision tools which calculate total dollar coverage and premiums for all coverage levels. Rainfall index values by index interval for each year going back to 1948, and the frequency which PRF insurance paid an indemnity are accessible at this site. Other decision tools are available at:

http://agforceusa.com/rma/ri/prf/dst

Sales Closing Date in the Fall

The deadline in Nebraska to purchase PRF coverage is in the fall preceding the year of coverage. For PRF coverage, this deadline has fallen around November 15th. Contact your local crop insurance agent for more information on this year's deadline.

Monte Vandeveer, (402) 269-2301
Otoe County Extension Educator
University of Nebraska-Lincoln
mvandeveer2@unl.edu

Aaron Berger, (308) 235-3122
Banner County Extension Educator
Panhandle Research & Extension Center
University of Nebraska-Lincoln
aberger2@unl.edu

Matthew Stockton, (308) 696-6713
Agricultural Economist, Assistant Professor
West Central Research & Extension Center
University of Nebraska-Lincoln
mstockton2@unl.edu