



Pasture, Rangeland, and Forage Pilot Insurance Program in South Dakota

Martin Beutler, ranch economist
Stacy Hadrick, Meade County Extension educator

South Dakota has been selected to participate in one of two government subsidized pasture, rangeland, and forage risk management pilot insurance programs.

These programs were developed by USDA Risk Management Agency (RMA) to provide livestock producers the ability to purchase insurance protection for losses of forage produced for grazing or harvested for hay. One pilot program is based on a rainfall index and is being piloted in a limited number of counties in states other than South Dakota.

The second pilot insurance program is based on a vegetation index. This program is being piloted in six states, including South Dakota.

Vegetation index program

The vegetation index pilot program uses the Normalized Difference Vegetation Index (NDVI) data from the U.S. Geological Survey Earth Resources Observation and Science data center (EROS) located in eastern South Dakota.

The NDVI is a measure of vegetation greenness and correlates to forage condition and productive capacity in approximately 4.8 x 4.8 mile grids. In general, the healthier the plants are in a given grid the higher the NDVI value. Losses are calculated based on the deviation

from normal within the grid and interval(s) selected.

Producers may choose one or more 3-month time intervals that fit their forage species production. The first interval begins April 1, the second July 1, and so on. Insurance coverage must be purchased by November 30th for the next year's growing season beginning April 1, 2007.

The program's goal is to provide a safety net for producers who face drought conditions.

The vegetation index program is currently available in the following counties in South Dakota: Bennett, Butte, Corson, Dewey, Haakon, Harding, Jackson, Jones, Lyman, Meade, Mellette, Perkins, Shannon, Stanley, Todd, and Ziebach.

This pilot insurance program will run for 3 years after which a determination will be made concerning its continuance and expansion to other states and other counties in South Dakota.

Insurance for this program is a group plan provided by private insurance companies, with the federal government subsidizing over half the cost of the premiums. Premiums will be the same at all participating crop insurance providers.

Insurance payments are determined through the use of satellite technology that assesses the losses in forage production across diverse range and pasture environments. The program does not measure individual production on a given pasture.

Data from satellite images are used to determine the “greenness” of a given “index grid” of land. From a comparison of the current “greenness” level to those determined historically, an index is developed that reflects current production levels. If the index falls below a level set by the program and producers at signup, then payments are made to producers for the forage loss.

The determination of the vegetation index centers on the "greenness" of the plants (i.e., moisture within the leaves, temperature, chlorophyll content, etc.) within the index grid and not the level of use of the plants. Having some severely utilized forages within a grid index has little effect on the index valuation and provides no real advantage in determining if a loss has occurred. Thus there is no reward for poor management of the rangeland resource.

Definitions

Insurable Acreage: Hayland and grazing land that is not planted annually. However, overseeding into existing forage crops is acceptable. Annually planted crops currently are not insurable.

Insured Acres: The number of insurable acres selected to be insured by a producer. You can choose to insure either grazing land, hayland, or both. You are not required to insure 100% of the crop type(s). If you choose to insure the crop types under this policy you cannot insure the same crop under any other FCIC subsidized program.

Producer decisions

Each producer will be asked to make several choices when insuring grazing land or hayland production including: coverage level, index intervals, productivity factor, and number of acres.

The first step is to determine which index grid or grids are representative of the forage grown by the producer.

This can easily be accomplished by visiting the RMA website. The internet reference is:
<http://www.rma.usda.gov/policies/pasturerangeforage/>
Under the Vegetation Index heading, choose the “Grid ID

Locator: Interactive Map.” On the interactive map page, enter a city name close to your operation. This will bring up a grid map which you may move around to zoom in, out, move map up, down, etc. until your grazing or haying land is represented by one or more grids. Keep track of the grid number(s). You will need them when purchasing coverage under the program.

You do not have to purchase coverage on 100% of your acreage. You can also use more than one grid index. You can separate your hay ground from your range and pasture acreage. You cannot, however, elect to insure your acreage more than once in the plan year.

It might be convenient to view the map and index grids with your crop insurance agent for assistance in assigning acreage to one or more grids based on the location and use of the insured acreage.

The next step is to determine at what coverage level you want to purchase insurance. Forage produced in a “normal” year in the grid(s) selected will be represented by 100%. The program allows producers to insure up to 90% of that production.

Think of this in terms of car insurance where normal forage production represents the value of the car and 90% represents the level of coverage purchased. The difference can be thought of as the “deductible” you are willing to cover yourself if you have a claim. Producers can choose 70, 75, 80, 85, or 90% coverage levels.

You also need to select a productivity factor. Productivity factor is a percentage multiplier allowing you to individualize coverage based on your own individual crop productivity. You can select between 60% and 150% of the grid average.

If your average forage production is 20% higher than the grid average, your productivity factor would be 120%. However, if you choose this higher value it will involve a higher premium. The higher the productivity factor, the higher the policy premium.

After deciding how many acres to insure and in which grid, the next step is to decide the plan interval.

The year is divided into four 3-month intervals beginning April 1st. Each insured acre can only be insured in one interval during the plan year. Producers cannot place less than 10% of the insured acres in any one chosen interval.

Premiums and subsidies

Premiums are determined by the choices made by the producer at the time of signup and are evaluated individually for each index grid. Subsidy rates are based on the level of coverage selected: 70 and 75% coverages are subsidized 64%; 80 and 85% coverages are subsidized by 59%; and 90% coverage by 55% of the cost of the premium. There is no application fee as there is with the Noninsured Crop Disaster Assistance Program (NAP).

Payments occur if the vegetation index falls below the normal vegetation index at the selected coverage level and productivity factor. Payments are made once the vegetation index value and a resulting loss has been determined at the end of each time interval.

Website helps

The RMA website explains the program in detail and has an interactive worksheet (decision tool) producers can use to evaluate various rates, productivity factors, and performance in previous years from 1989 to 2005. The decision tool gives producers an idea of the level of indemnity and returns from their insurance investments for their specific index grids (location in South Dakota). An example of this decision tool is given in Table 1. The Decision Tool and other information can be found at:
<http://www.rma.usda.gov/policies/pasturerangeforage/>

Where to purchase coverage

This insurance program is a group insurance plan available through private crop insurance providers. For a list of participating providers in your area, contact your local Farm Service Agency (FSA) office or the USDA RMA office in Billings, Mont (406-657-6447).

Example

A hypothetical producer has 10,000 acres of grazing land in Perkins County. His land is located in index grid # 47303 southwest of Lemmon, S.D. He found the index

grid number by looking on the RMA website and selecting the Grid ID Locator: Interactive Map option under the Vegetation Index heading. The year being evaluated in this example is 1991.

This producer has elected to insure up to 90% of normal vegetation at a 100% productivity factor. He has also elected to split his insurable acres into the first two Index Intervals with 5,000 acres in each. In other words, he is insuring 5,000 acres against forage loss between April 1 and June 30 and another 5,000 acres between July 1 and September 30.

The program determined that the value of the protection per acre for this index grid in 1991 would have been \$7.92 per acre. The total value of protection provided by the policy would have been \$79,200. The premium charged is \$0.87 per acre with \$0.81 per acre in Interval I and \$0.93 per acre in Interval II. The total premium charge for this policy is \$8,708. However, the Federal Government under USDA subsidized 55% of the premium. The cost to the producer would have been \$4,789 for \$79,200 worth of coverage.

The historic index shows that in 1991, the actual index value for Interval I was 90.9 which would have been above the coverage selected in the policy. Hence, there would have been no indemnity payment to the producer for Interval I in 1991. However, in Interval II, the actual index value fell to 55.2, which resulted in an indemnity payment of \$3.06 per acre or a total payment to the producer of \$15,312.

This example can be evaluated for each year from 1989 to 2005. In many of those years the producer would have paid the premiums and received no payment since forage production would have been at least 90% of "normal." In other years when significant drought occurred, the producer would have received a payment.

Your participating crop insurance agent can help you evaluate your forage insurance decisions under this pilot program.

Pasture, Rangeland, Forage Vegetation Index Decision Tool

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

Please complete the following information (Yellow areas):

State	South Dakota
County	Perkins
Grid ID	47303
Insured Crop Type	Grazingland
Coverage Level (%)	90
Productivity Factor (%)	100
Share (%)	100
Insurable Acres	10000
Sample Year	1991

County Base Value per Acre	\$8.80
Dollar Amount of Protection per Acre	\$7.92
Total Insured Acres	10,000
Total Policy Protection	\$79,200
Subsidy Level	55%

Index Interval*	Insured Acres per Index Interval	Policy Protection per Unit	Premium Rate per \$100	Total Premium (\$/ac)	Premium Subsidy (\$/ac)	Producer Premium (\$/ac)	Actual Index Value	Indemnity (\$/ac)
I	5000	\$39,600	10.21	\$0.81	\$0.44	\$0.36	90.9	\$0.00
II	5000	\$39,600	11.78	\$0.93	\$0.51	\$0.42	55.2	\$3.06
III	0	\$0	15.28	\$0.00	\$0.00	\$0.00	79.0	\$0.00
IV	0	\$0	17.65	\$0.00	\$0.00	\$0.00	111.8	\$0.00
Per Acre	N/A	N/A	N/A	\$0.87	\$0.48	\$0.39	N/A	\$1.53
Policy Total	10,000	\$79,200	N/A	\$8,708	\$4,789	\$3,919	N/A	\$15,312

*Intervals: I-Apr-Jun, II-Jul-Sep, III-Oct-Dec, IV-Jan-Mar

This website is a product of RMA , GMS , AgForce , and CNRIT .

Submit Query

South Dakota State University, South Dakota counties, and U.S. Department of Agriculture cooperating. South Dakota State University is an Affirmative Action/Equal Opportunity Employer and offers all benefits, services, education, and employment opportunities without regard for race, color, creed, religion, national origin, ancestry, citizenship, age, gender, sexual orientation, disability, or Vietnam Era veteran status.
ExEx5059, 2006. Access at <http://agbiopubs.sdstate.edu/articles/ExEx5059.pdf>. Or go to <http://sdces.sdstate.edu/drought>