

**Agricultural
Marketing**



**Policy
Center**

Group Risk Income Protection

James B. Johnson and John Hewlett*

**Objective Analysis
for Informed
Decision Making**

Agricultural Marketing Policy Paper No. 13

July 2006

* University of Wyoming, Extension Educator

Introduction

Group Risk Income Protection (GRIP) is a federally-subsidized risk management tool to insure against widespread loss of revenue from an insured crop in a county. Crop producers whose yields are highly correlated with county yield are most likely to use this product to insure that the combination of yield and price results in a particular level of revenue. Unlike the related Risk Management Agency-approved Group Risk Plan insurance, either a price or yield decline may result in a producer being indemnified. If total revenue (price times yield) in county is less than a producer's trigger revenue, the producer will be indemnified for revenue losses due to insurable causes. But producers need to recognize that they could incur reduced revenue from the insured acres of a crop and not be indemnified if there is not a commensurate decline in county per acre revenues for the crop.

Terms Used in GRIP

Key terms used in Group Risk Income Protection follow:

Maximum Protection per Acre: Maximum Protection per Acre is the highest amount of protection per acre specified in the actuarial documents for each insured crop, practice and type. Numerically Maximum Protection per Acre is 150 percent of the *expected county revenue*.

Protection per Acre: The producer's protection per acre is selected by choosing from 60 to 100 percent of the *maximum protection per acre* for each insured crop, practice and type. Catastrophic Risk Protection is available at 45 percent of the *maximum protection per acre*.

Expected County Yield: The yield contained in actuarial documents on which a producer's coverage of a crop is based. This yield is determined using the historical National Agricultural Statistics Service (NASS) county average yield for a crop, as adjusted and approved by the Risk Management Agency (RMA).

Expected Price: This value is defined in the Crop Provisions for each particular crop covered under GRIP. For instance, for winter wheat in southeast Wyoming, the expected county price is: "The September 1st to September 30th pre-harvest year's average daily settlement price for the harvest year's KCBOT September hard red winter wheat futures contract rounded to the nearest whole cent."

Expected County Revenue: This revenue estimate is the per acre value obtained by multiplying the *expected county yield* times the *expected price* per unit of output.

Coverage Levels: Producers must choose one coverage level for each crop and county combination. Producers must select a 70, 75, 80, 85 or 90 percent coverage level. Catastrophic Risk Protection is available at 65 percent of the *expected county revenue*.

Trigger Revenue: This is the revenue obtained by multiplying the *coverage level* selected by the producer times the *expected county revenue*. Trigger revenue enters into the calculation to determine if an indemnity is due and the amount of the indemnity.

Final County Yield: This yield is determined by RMA based on NASS yield for the insurable crop's type and practice. The final yield is determined following harvest and is made available early in the crop year following the year insured.

Harvest Price: The simple average price of the final daily closing prices for the trading month on futures contracts specified in the crop provisions for a particular crop. For instance, for winter wheat in southeast Wyoming, the harvest price is "the August 1st to August 31st harvest year's average daily settlement price for the harvest year's KCBOT hard red winter wheat contract." For wheat the harvest price cannot be less than *expected price* less \$2.00 or greater than *expected price* plus \$2.00. For corn these limits are plus or minus \$1.50.

County Revenue: This revenue is determined by multiplying the *final county yield* by the *harvest price*. County revenue enters into the calculation to determine if indemnity is due and the amount of indemnity.

Other GRIP Considerations

GRIP is only available for corn and wheat in Wyoming. Although corn is grown in many Wyoming counties (see Figures 1 and 2), GRIP actuarial tables for corn are available only in Goshen County. GRIP actuarial tables for wheat are available in Platte, Goshen and Laramie counties (Figure 4).

GRIP does not cover late planting, prevented planting or replant losses because these losses apply

to an individual farming operation and are not applicable to a group risk income situation.

Producers in counties without GRIP actuarial tables for a specific crop may apply in writing through their crop insurance agent for a written agreement. If the application for the written agreement is approved by RMA, terms of the written agreement will be specified including cropping practice, type and variety. A request for a written agreement must include a completed *Request for Actuarial Change* form.

Figure 1: Major Corn (for grain) Producing Counties in Wyoming

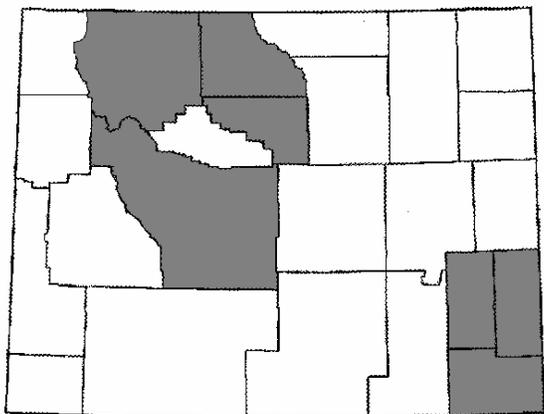


Figure 2: Major Wheat Producing Counties in Wyoming

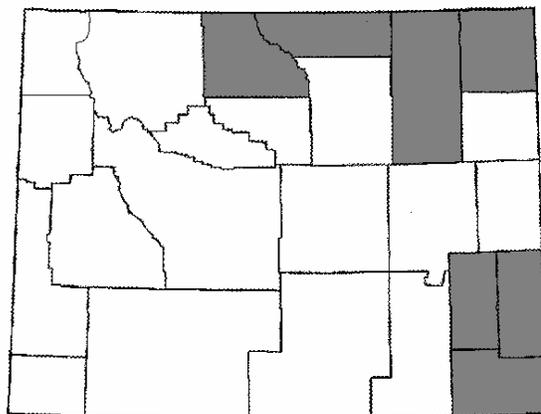


Figure 3: GRIP Coverage for Corn (for grain) in Wyoming

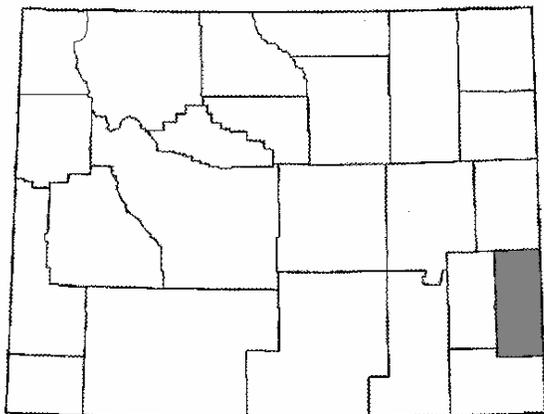


Figure 4: GRIP Coverage for Wheat in Wyoming

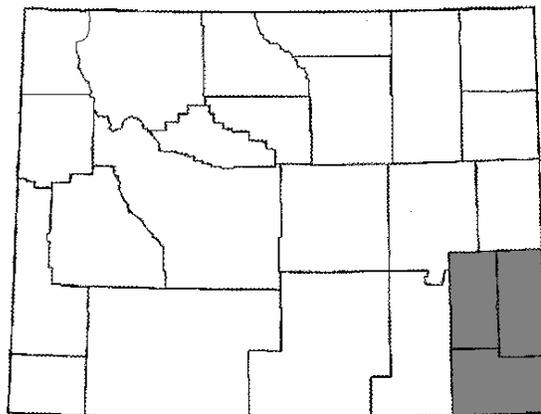


Table 1: Example of GRIP Insurance Coverage of Winter Wheat, Goshen County

CONTRACT DATA	VALUE	CALCULATION
Maximum Protection per Acre	\$130	RMA specifies in actuarial documents and its premium calculator
Protection per Acre	\$130	Producer chooses 100 % x \$130
Expected County Yield	24 bushels/acre	RMA
Expected County Price	\$3.60/bushel	RMA
Expected County Revenue	\$86.40/acre	24 bushels/acre x \$3.60/bushel
Coverage Level	90 %	Producer selects 90 percent
Trigger Revenue	\$77.76/acre	\$96.40 x 90 %

Example of GRIP for Wheat Coverage

Consider the following information for a farm manager in Goshen County who wants to insure winter wheat with GRIP (Table 1). Values in the example are based on winter wheat for the coming crop year. So, prior to the September 30th sales closing date for winter wheat crop insurance, the producer would know the *maximum protection per acre*, the *expected county yield*, the *expected price*, and the *expected county revenue*.

The producer makes decisions regarding the *coverage level* and the *trigger yield*.

GRIP Premium Calculations

GRIP premium calculations are based on the *protection per acre*, a value determined by multiplying the *maximum protection per acre* times the selected *coverage level*.

The *gross premium* is the *protection per acre* times the premium rate. Premiums can be determined through producer interactions with crop insurance agents and/or using the premium calculator available on the RMA website.

The GRIP insurance premium is subsidized by the federal government. The premium subsidy rate is determined by the *coverage level* selected by the producer.

The value of the premium subsidy is the *gross premium* times the premium subsidy rate. The *producer premium* is the *gross premium* less value of the premium subsidy.

Premium subsidy rates for GRIP insurance coverage are the same as those for GRP insurance products and different from those insurance products based on individual farm yields for a crop. Subsidy rates decline, as a percentage of the gross premium, as the *coverage levels* increase (Table 2).

Table 2: GRIP Insurance Subsidy Rates by Coverage Level

COVERAGE LEVEL (%)	GRIP PREMIUM SUBSIDY RATE
70	0.64
75	0.64
80	0.59
85	0.59
90	0.55

A \$30 administrative fee is assessed for each crop a producer insures by GRIP insurance coverage above the CAT level. There is a \$100 fee for Catastrophic Risk Protect (CAT) coverage but no premiums are assessed.

Continuing with the Goshen County example, the producer would arrive at the applicable per acre premium as follows, (Table 3):

Table 3: Example Premium Calculation for GRIP, Winter Wheat in Goshen County

CONTRACT DATA	VALUE	CALCULATION
Policy Protection per Insured Acre	\$130	Protection per Acre x 1 acre
Gross Premium	\$7.80/acre	\$130 x 6 % assumed premium rate
Premium subsidy	\$4.29/acre	\$7.80 x 0.55, for 90 % coverage level
Producer premium	\$3.51/acre	\$7.80 - \$4.29

Indemnity Calculation Procedures

A GRIP indemnity occurs when the *actual county revenue* is less than the producer’s *trigger revenue*. To calculate an indemnity, a *payment calculation factor* is determined.

The *Payment Calculation Factor* is determined as

$$\text{Payment Calculation Factor} = \frac{[\text{trigger revenue} - \text{county revenue}]}{\text{trigger revenue}}$$

The total indemnity is as follows:

$$\text{Total Indemnity} = [\text{payment calculation factor} \times \text{protection per acre}] \times \text{acres}$$

For wheat and corn producers in southeast Wyoming indemnities will usually be paid in mid to late spring in the year following harvest.

Continuing the Goshen County example, assume that the final county yield was only 16 bushels per acre. The *harvest price* equaled the *expected price*. The indemnity calculations are presented in (Table 4).

The Harvest Revenue Option Endorsement

The GRIP harvest revenue option endorsement is a supplement to the basic GRIP insurance offering

and is available at an additional premium cost. The harvest revenue endorsement allows for producers to be indemnified at a higher level if the *harvest price* exceeds the *expected price*.

The GRIP harvest revenue calculation is the following:

$$\text{Trigger revenue} = \text{Expected county yield} \times \text{coverage level} \times [\text{greater of the expected price or harvest price}]$$

If the *county revenue* falls below the *trigger yield*, the producer is indemnified. In a situation where the *harvest price* exceeds the *expected price* the insured producer’s *trigger revenue* would be larger and increase the likelihood of being indemnified.

Summary

Producers who are most likely to use GRIP are those who have crop yields most highly correlated with county yields. In Wyoming, currently GRIP is available for corn for grain on Goshen County and for wheat in the three southeastern counties.

Table 4: Example Indemnity Calculations for Winter Wheat, Goshen County

CONTRACT DATA	VALUE	CALCULATION
Final Yield	16 bushels/acre	RMA (based on NASS data)
Harvest Price	\$3.60/bushel	RMA
County Revenue	\$57.60/acre	16 bushels/acre x \$3.60/bushel
Payment Calculation Factor	0.259	(\$77.76/acre - \$57.60/acre)/\$77.76/acre
Protection per Acre	\$130	\$130/acre x 1 acre
Indemnity per Acre	\$33.67	\$130/acre x 0.259

Copyright 2006:

The programs of the MSU Extension Service are available to all people regardless of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Dr. Douglas Steele, Vice Provost and Director, Extension Service, Montana State University, Bozeman, MT 59717.