Utilizing the Dual Use Insurance Option for Stocker Cattle

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Abstract

The Rainfall Index Annual Forage (RIAF) program, established in May 2013, was designed to provide risk coverage for annual forage producers (Biermacher, Brorson, & Maples, 2016). Originally, this program did not allow producers the ability to dually insure a crop that might be used for both grazing and grain production. However, provisions in the 2018 Farm Bill allow annual forage producers the ability to insure grazing through the RIAF program, as well as traditional crop insurance such as a multiple peril crop insurance (MPCI).

As this Dual Use option is new to the Federal Crop Insurance Program, it is unknown how well these policies work in conjunction with one another or if a producer would be better off to continue using just one of the insurance programs. Using partial budgeting techniques, this study examined the three insurance options, RIAF, MPCI, and Dual Use, and determined which provides the greatest net benefit.

The first scenario evaluates the RIAF policy, the second scenario evaluates the MPCI policy, and the third scenario evaluates the new Dual Use policy. In each scenario, we assume the insurance policy covers a 100-acre winter wheat crop in Kingfisher County Oklahoma (grid 19029) that is used for both grazing and grain production.

All coverage levels and productivity factor combinations were analyzed, however, a coverage level of 75% and a productivity factor of 100% were selected as they represent the median options between both the RIAF and MPCI options. Across the five years, the RIAF option generated the greatest return followed by the Dual Use option and then MPCI. In 2014, the Dual Use option generated the greatest net benefit while in years 2015-2018 RIAF generated the greatest return. The MPCI scenario only generated a positive net benefit in 2014. As expected, the Dual Use option represented a blend between the two single options. The RIAF program is more specific to an individual producer compared

to the MPCI which focuses on how a producer compares to other producers in the county. This difference could explain why our results have higher net benefits for RIAF in years 2015-2018, compared to the Dual Use and MPCI options.

Key Words: Multi-peril crop insurance (MPCI), Rainfall index annual forage (RIAF) insurance, Dual use insurance, partial budget

Introduction

Risk abounds in production agriculture. Producers face risk not only from weather, pests, and crop variability, but also from market factors such as price and trade. These inherent sources of risk drive the need for effective crop insurance options. Livestock and forage producers have always relied on adequate rainfall to produce quality pastures. Now, though, insurance options have been added to the Federal Crop Insurance Program to give these producers risk management options. The Rainfall Index Annual Forage (RIAF) program, established in May 2013, was designed to provide risk coverage for annual forage producers (Biermacher, Brorson, & Maples, 2016). Originally, this program did not allow producers the ability to dually insure a crop that might be used for both grazing and grain production. However, with the 2018 Farm Bill, annual forage producers are now able to insure grazing through the RIAF program, as well as traditional crop insurance such as a multiple peril crop insurance (MPCI). This program utilizes the rainfall index and is administered by the United States Department of Agriculture (USDA) Risk Management Agency (RMA). Although USDA RMA developed and supports crop insurance, a producer must purchase policies through a private insurance agent.

How the Program Works

In Oklahoma, and the Southern Great Plains, stocker cattle grazing on winter wheat is a common practice, with millions of acres being grazed each year. With the new dual use option, producers are now able to utilize both RIAF and MPCI and can receive an indemnity from each. As this is new to the Federal Crop Insurance Program, it is unknown how well these policies work in conjunction with one another or if a producer would be better off to continue using just one of the insurance programs. This dual use option could significantly benefit a producer's risk management strategy, with knowledge of the effectiveness of this program compared to existing

options. The objective of this study is to examine the three insurance options, RIAF, MPCI, and Dual Use, and determine which provides the greatest net benefit.

Materials and Methods

The Dual Use option works as a combination of the RIAF and MPCI programs. To reap the potential risk management benefit of the Dual Use option, a producer should enroll in both the RIAF and MPCI policies described below. However, when the dual use policy is elected, the county base value is modified to equal 40% of the full year RIAF county base value.

RIAF

The RIAF program is designed to protect producers against a lack of precipitation. Similar to all other crop insurance processes, producers have a series of decisions to make as they insure their land under RIAF, such as the acres to insure, the coverage level, productivity factor, and the desirable index intervals (Figure 1). For RIAF, producer premiums are due July 15th, which is the sales closing date, and the acreage reporting date is October 15th. There is a premium subsidy range of 51-59%, dependent on the coverage level selected. In RIAF, the first step is to determine which growing season their crop falls into. Our example below considers winter wheat producers. They fall into the growing season 1, crops planted September 15 through December 15.

A producer must select coverage levels which range from 70% to 90% of historic rainfall, based on the previously discussed Rainfall index. They may also choose Catastrophic (CAT) level coverage. Payments are granted when a loss is triggered or when actual rainfall in their specific grid is less than the chosen coverage level.

A productivity factor must also be selected, between 60% and 150%, allowing an increase or decrease in the policy's base value. This base value is established by the RMA on a county by county basis. This factor is designed to match the land productivity while also giving a

producer the flexibility to meet their specific budget needs. For instance, if a producer's land compares similarly to the county, a productivity factor of 100% should be selected. However, if the land is less productive comparatively, a productivity factor below 100% should be selected. If the land is more productive, a productivity factor above 100% should be selected.

Next, the producer must choose the index intervals and the policy value associated with each two-month interval. In growing season 1, producers have the option to select from six different intervals: September-October, October-November, November-December, December-January, January-February, and February-March. Three index intervals must be selected, with no sequential intervals (i.e. November- December and December-January). The minimum insurance percent of value is 20% and the maximum is 40% for a single interval (Jones & Myers, 2016).

MPCI

Multiple peril crop insurance protects against adverse weather conditions, fire, insects, plant disease, wildfire, and other threats. Multiple Peril Crop Insurance (MPCI) polices utilize the Actual Production History (APH) Yield, which determines the production guarantee, based on up to ten previous years of actual assigned yields. The two most common types of MPCI are Yield Protection Plans and Revenue Protection Plans. Yield Protection Plans only provide protection against a production loss, whereas Revenue Protection Plans provide protection against loss of revenue due to production loss, price declines, or a combination of both. Again, producers must select a coverage level between 50% and 85%. Producer premiums for wheat under MPCI are due September 30.

Dual Use – Combining the Two

As the Dual Use option is a combination of the two previous mentioned policies, producers will be able to receive an indemnity from both RIAF and multiple peril small grains

policies. However, the county base value (CBV) under the RIAF will be adjusted when used in conjunction with a small grains policy. The Dual Use CBV is equal to 40% of the full year RIAF CBV. This dual use option can be used in conjunction with a multiple peril crop insurance (MPCI) option of the producer's choice (Risk Management Agency, 2019).

Oklahoma Stocker Cattle and Winter Wheat Producer Impact Example

Stocker cattle operations are a common pursuit among Oklahoma producers. To examine how this dual use option could impact a producer, dual use RIAF and yield protection wheat insurance policies are demonstrated below with an example from a grid located in Kingfisher County (grid 19029). This grid was selected using the RMA interactive support tool, which can be used to examine the grids your acreage falls in. Ideally, this study would have included 10 years of data, however due to the availability of annual forage data and historic wheat yields, only the five years between 2014 and 2018 were available. The data for both the yield protection and RIAF policies were generated from the RMA Cost Estimator tool (USDA Risk Management Agency , n.d.) and the RMA interactive support tool (Ag Force, n.d.).

Consider a producer in this area who desires a risk management option to protect 100 acres of winter wheat crop, with the purpose of both grazing and grain production. In this case, a producer could implement the Dual Use RIAF option with a yield protection wheat insurance policy, giving them the potential to collect indemnities on both policies. All coverage levels and productivity factors were analyzed, however, a coverage level of 75% and a productivity factor of 100% were selected as they represent the median options between both the RIAF and yield insurance options. It is important for a producer to consider that the ultimate goal of crop insurance is not to simply strike an indemnity yearly, as that means there were not ideal conditions for plant growth, but to act as a risk management tool to protect the producer if conditions cause poor production.

Three scenarios will be analyzed and compared utilizing partial budgeting techniques. The first scenario consists of only utilizing a RIAF policy while the second scenario consists of only utilizing a MPCI policy. The third scenario utilizes the new Dual Use policy. Data required by RMA include the county average annual winter wheat yield and actual index value of rainfall in the designated grid to determine respective indemnity payment amounts. The data for scenarios one and two was generated from the RMA Cost Estimator tool (USDA Risk Management Agency, 2019) and the RMA interactive support tool (Ag Force, 2019). Data for the third scenario was created using data from scenario one, with the modified RIAF county base value, and scenario two. This data was then used to calculate the indemnity payment and premium for each scenario.

In each scenario, the net benefit was calculated by taking the respective indemnity payment minus the premium for the policy. All coverage levels and productivity factor combinations were analyzed, however, a coverage level of 75% and a productivity factor of 100% were selected as they represent the median options between both the RIAF and MPCI options.

Results and Discussion

In 2014, the Dual Use option generated the greatest net benefit while in years 2015-2018 RIAF generated the greatest return. The MPCI scenario only generated a positive net benefit in 2014. As expected, the dual option represented a blend between the two single options. The historical rainfall index is used to determine when rainfall is above or below the average in a grid, when rainfall is below the average an indemnity may be struck under RIAF. In MPCI, county average annual yields are used to determine when a producer falls below the county average. As adequate rainfall is necessary to maintain grazable wheat and produce quality yields,

it is hypothesized low rainfall amounts during important stages of the wheat's growing season could have caused our results to show higher net benefits in RIAF for years 2015-2018, compared to the Dual Use option.

Figure 2 represents the net indemnity, calculated by taking the indemnity payment minus the producer premium, for the three insurance options compared. In 2014, the only year a wheat indemnity was struck, the Dual Use Option produced the highest net indemnity. As such, the Dual Use Option is effective and ideal for years when poor wheat yields and low rainfall occur. MPCI premiums are more expensive than the RIAF premium, therefore MPCI has a greater influence on the Dual Use outcomes. Figures 3 and 4 have been included to depict the impact rainfall has on production of wheat, for both grain and graze. As adequate rainfall is critical for both forage and grain production throughout the growing season, periods of low moisture can impact the quality of forage and grain yields at harvest. In Figure 3, the rainfall index shows the amount of rainfall an area of land, within its respective grid, received compared to the historic average. Subsequently, the impact of poor rainfall is reflected in Figure 4 through reduced wheat yields. Figure 3 shows an above average amount of rainfall in 2016 for the Nov-Dec interval which is likely correlated with the high yield for 2016 in Figure 4. However, in years 2014 and 2017 there is an above average amount of rainfall in the Jan-Feb interval but is not correlated with high yields for these crop years.

As this analysis is limited to the county of Kingfisher, Oklahoma, it should be recognized that results will be highly dependent on the specific grid an area of land falls into because of the differences in moisture in the particular area. Further, the results could vary widely across the states and within each state where this insurance combination is allowed and should be analyzed. In addition, a deeper analysis comparing various MPCI policies in combination with rainfall

insurance would be of value to determine which combination would be most beneficial as a risk management tool.

Conclusion

The Dual Use option under the Rainfall Index Annual Forage Program was implemented with the 2018 Farm Bill to serve as a risk management tool for producers who desire to insure their small grains crop with both an Annual Forage Policy for grazing and a Multiple Peril Small Grains Policy for grain. This Dual Use option is available for select counties where RMA considers "grain/graze" a good farming practice, in Colorado, Kansas, Nebraska, New Mexico, Oklahoma, and Texas. Stocker cattle producers who graze winter wheat now have a modified insurance option, allowing them to purchase polices and collect indemnities on both their annual forage and small grains insurance. Producers who choose to implement this risk management tool should consider the benefits this option could have on their operation, in addition to the effects different policy combination could have on their indemnity payments.

Comparing the differences among the payments from a RIAF policy, a small grains policy, and the dual use combination illustrates how the dual use option can effectively combine these policies, while reaping the specific benefits of the separate insurance options. In years when no yield policy indemnity was granted, the RIAF alone producers a higher net indemnity. However, in years such as 2014, when poor wheat yields occur, the dual use option effectively combines the two options.

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Appendix

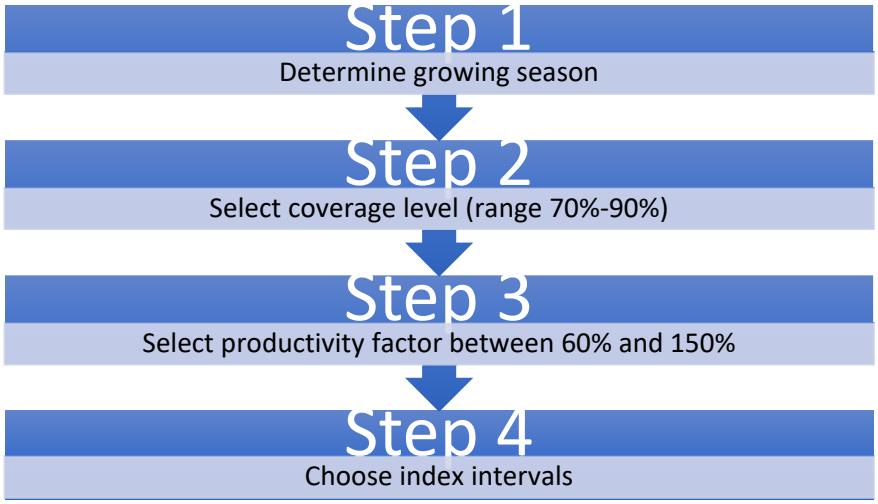

Figure 1: Steps Associated with RIAF Policy Decisions

Note: Figure 1 breaks down the steps associated with RIAF decisions. Producer premiums are due July 15. Payments are granted when a loss is triggered or when actual rainfall in their specific grid is less than the chosen coverage level.

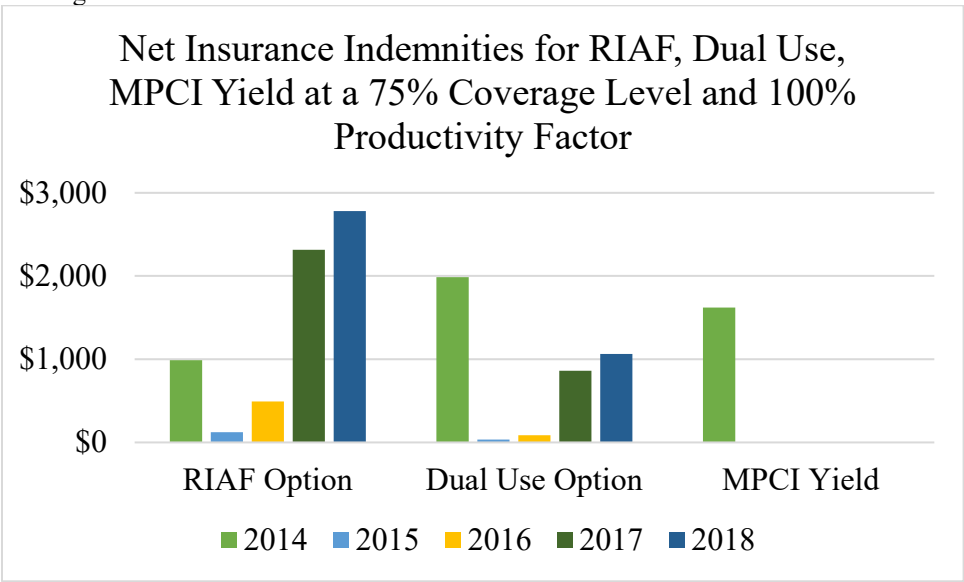

Figure 2: Net Insurance Indemnities for RIAF, Dual Use, MPCI Yield at a 75% Coverage Level and 100% Productivity Factor

Note: Net insurance indemnities were calculated by subtracting the producer premium from the indemnity payments for each policy type. Any combination of coverage levels and productivity factors can be used for the RIAF and MPCI Yield Protection insurance. This figure represents an example of median coverage levels and productivity factors in each program, for 100 acres of winter wheat in Kingfisher County, Oklahoma. A comparison representing high and low coverage level and productivity factor options was conducted and showed similar trends as the figure shown above.

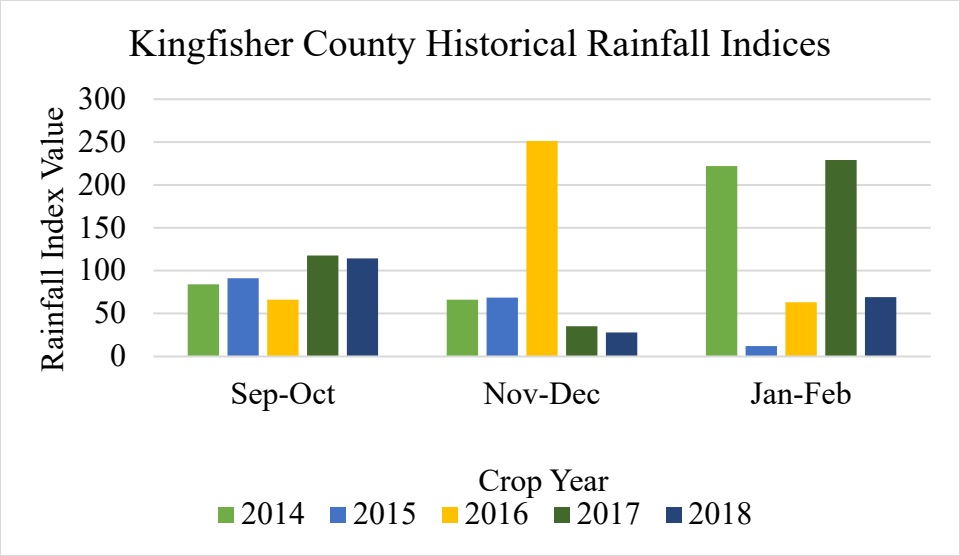

Figure 3: Kingfisher County Historical Rainfall Indices

Note: The actual index values are normalized such that the average, or Expected Grid Index, is equal to 100. Hence, an index value of 100 represents average, below 100 represents below average, and above 100 represents above average. Rainfall amounts during different periods of the growing season impact the quality and quantity of forage and grain.

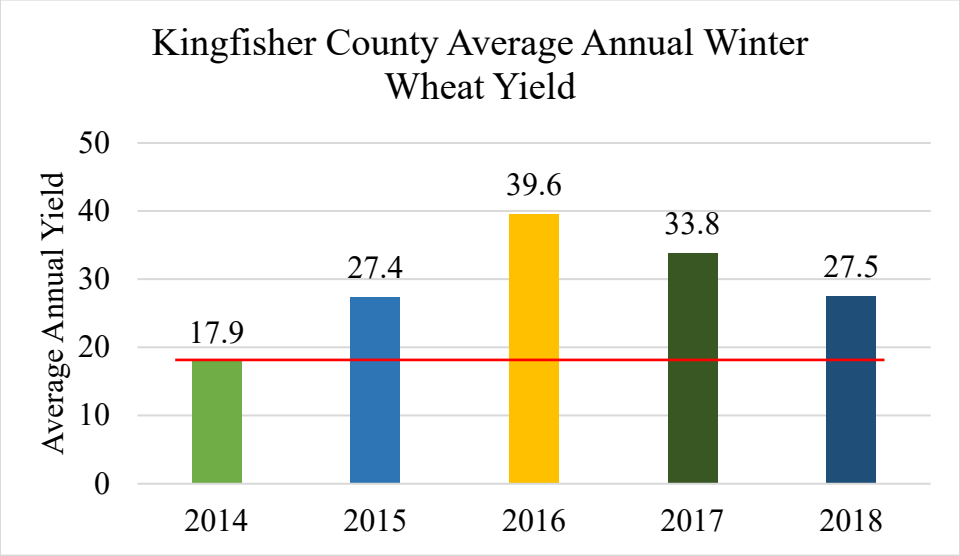

Figure 4: Kingfisher County Average Annual Winter Wheat Yield

Note: When using a yield protection insurance, the indemnity is struck when there is a loss in production compared to the Actual Production History (APH) of a piece of land that is dependent on the 10 years of previous actual production. As the yield from 2014 was less than the APH (as denoted by the red line), an indemnity payment was struck.