

Annual Forage Insurance Update and Examples

Jennifer Ifft (jiff@ksu.edu) – K-State Department of Agricultural Economics
John Holman – K-State Department of Agronomy, Western Kansas
Sylvanus Gaku – K-State Department of Agricultural Economics

June 2022

What is Annual Forage Insurance?

Annual Forage (AF) insurance is a rainfall index product similar to Pasture, Rangeland, and Forage Insurance (PRF). Alfalfa and perennial range can be insured under PRF. If you grow annual crops for forage¹, AF can be used to help insure against reduced forage yield due to less precipitation than normal during the producer-selected growing season. When rainfall falls below a set amount, a payout is provided. These payouts, called indemnities, could be used to cover losses from decreased forage production, including purchasing supplemental feed sources during a drought or future restocking. Precipitation is measured locally, in an approximately 14x16 mile area called a “grid”. A producer selects the months, weight (importance) of months, and % precipitation they want to insure for.

Where is Annual Forage Insurance used in Kansas?

In 2021, almost 162,000 acres were covered by AF, up from about 94,000 acres in 2020. Similarly, the total value of production insured (insurance liabilities or guarantee) increased from \$16 million in 2020 to \$26 million in 2021. In Figure 1, we can see that AF was used in many western and south-central Kansas counties in 2021, but not in the eastern third of the state. Annual forage insurance has only been used in Kansas since 2014.

Does it pay?

Annual Forage insurance pays out indemnities when the level of rainfall relative to the historic average within the producer’s grid is lower than the (producer-selected) coverage level. For example, if rainfall is 80% of the historic level and the producer selects an 85% coverage level, there would be indemnity. However, a 75% coverage level would not receive an indemnity. Coverage levels can range from 70 to 90%; the higher the coverage level, the higher the premium and the higher the likelihood and size of a payout. The Federal government provides a premium subsidy or shares in the cost of AF premium.

From 2014-present, KS producers have paid nearly \$11 million in AF premiums and received over \$22 million in indemnities. The highest level of indemnities (relative to premium) was paid in 2018 and the lowest in 2019. In Figure 2, we report the aggregate *producer* loss ratio from 2014-2021 across Kansas counties. Most counties experienced a *producer* loss ratio greater than one or received more in indemnities than was paid in premiums. However, the

¹ This includes annual crops used for grazing, haying, grazing/haying, grain/grazing, green chop, grazing/green chop, or silage.



experience varies across counties, with north-west counties having higher producer loss ratios. These patterns suggest that south central Kansas may have been relatively wet from 2014-21, while northwestern Kansas was relatively dry. The coverage period, or growing season, as discussed in the next section, may also influence payouts.

What are the key producer decisions?

The producer must select a coverage level of 70-90% and productivity factor of 60-150%, which influences the level of local rainfall necessary to trigger a payout and the value of payouts, respectively. Similar to PRF, producers must also select what months to use AF. However, these months, or intervals, are somewhat less flexible than PRF. The producer must first select one or more of 4 'growing seasons':

- (1) September to March,
- (2) December to June,
- (3) March to September or
- (4) June to November.

The forage crop must be planted between early and final planting dates, similar to other crop insurance policies. The early and final planting dates are unique to each growing season, with the early planting typically 1.5 months before the beginning month of the growing season and late planting 1.5 months after the beginning month of the growing seasons. For example, earliest planting date for growing season 1 is July 16 and the final planting date is Oct. 15.

Next, 3 2-month intervals within the 7 month 'growing season' must be selected and assigned weights (for example, 30%, 30%, and 40%). No single month can be insured twice (overlap) within 1 of the 4 'growing seasons'. No period can have a weight higher than 40%, so 3 2-month periods must be selected within a 'growing season'. Other key decisions, including grid selection, can be discussed with an insurance agent or by visiting the AF decision support tool at <http://af.agforceusa.com/ri>.

Examples of AF Growing Seasons Insured:

1. A producer planted winter wheat for dual-purpose use (graze plus grain) in September 2020 in Clark County (grid 20521) and used AF in Growing Season 1: September (2020)-March (2021). Wheat grown for dual-purpose is insurable, but at a 60% lower county base value (see more details below). They selected a coverage level of **80%** and a productivity factor of **100%**. Since fall growth is most important for dual-purpose, they selected the Oct-Nov interval at the highest rate possible at **40%** weight, the Dec-Jan interval at a **40%** weight, and the Feb-Mar interval at **20%** weight. The producer would have paid a premium of **\$7** per acre and received **no** indemnities. The premium is relatively lower than the examples below because the base value, or the value of the insured forage crop, is 60% lower under the dual purpose option.
2. A producer in Morton County (grid 20813) planted winter triticale in late October 2020 and used AF in Growing Season 2: December (2020)-June (2021). They selected a coverage level of **90%** and a productivity factor of **100%**. They insured all periods equally: Dec-Jan interval at a **33%** weight, Feb-Mar interval at a **33%** weight,



and Apr-May interval at a **34%** weight. The producer would have paid a premium of **\$25** per acre and received an indemnity of **\$63** per acre for lower-than-normal rainfall in the Feb-March and Apr-May intervals. Rainfall was much lower-than-average in the late winter and early spring, so indemnities were relatively high.

3. A producer plants corn silage in April 2020 in Harper County (grid 20227) for Growing Season 3. They insure using the following weights: Mar-Apr at **40%**, May-Jun at **40%**, Jul-Aug at **20%**. They select a coverage level of **90%** and a productivity factor of **125%**. The producer would pay a premium of **\$27** per acre and receive an indemnity of **\$50** per acre, due to a rainfall index of 48.6 during the May-June interval. In other words, rainfall during May-June interval was 48.6% of the historic average.
4. A producer plants forage sorghum in June 2020 in Hodgeman County (grid 22021) during Growing Season 4. The producer wants to ensure good growth early in the growing season and will harvest in October, so insures Jun-July at **40%**, Aug-Sep at **40%**, and Oct-Nov at **20%**. They select a coverage level of **75%** and a productivity factor of **80%**. The producer would pay a premium of **\$6** per acre and receive an indemnity of **\$4** per acre, for lower-than-average rainfall during the Oct-Nov interval.

These examples were estimated using the AF Decision Support Tool at <http://af.agforceusa.com/ri> and are for demonstration purposes only. Some insurance agents have their own decision support software; only an insurance agent can provide official premium estimates.

What are some advantages and disadvantages of using Annual Forage insurance?

The primary disadvantage of AF is that it doesn't cover low moisture on your farm or fields, it covers low moisture in your area or grid. Before using AF, a producer needs to understand this risk: they might receive a payment when they have sufficient moisture or not get a payment when they experience low rainfall. Also it could be extremely dry for a two-month insurance period (interval), resulting in low forage yield, yet a large rainfall event on the last day of the period could make the period ineligible for a payment.

An advantage of AF is that payments are calculated automatically based on actual precipitation and made relatively quickly. Unlike grain crops that typically have scale tickets, forage may be harvested and used by the grower themselves without good yield documentation or the forage might be grazed. Thus this program makes reporting much simpler. Further, a producer gets to select what months they want coverage in and how much coverage they want. While some learning is required with any insurance product and AF requires an initial time investment, it is a relatively simple insurance product. This is especially likely after the first year or two of participation; a good relationship with your insurance agent can also make a big difference here.

What else should be considered?

- The sign-up deadline is **July 15**, with premium billing a year later, around August. Annual forage can be purchased from a local crop or livestock insurance agent: <https://www.rma.usda.gov/informationtools/agentlocator>



- Premiums vary based on location, growing season, coverage leverage, and productivity factor; a producer could pay from \$3-50 per acre. Higher premiums reflect a higher likelihood and value of a payout.
- Acreage reporting dates are on the “final planting date” for each growing season, which is approximately 3 months after the earliest planting date for each growing season. Acreage reporting is an important deadline— if the acreage isn’t used for annual forage or if other conditions are not met, then the policy may not “attach”: no payouts are made, and the producer doesn’t pay a premium. A producer using AF should discuss and stay in touch with their insurance agent about acreage reporting deadlines.
- There is a “dual use option” for small grains used for *both* grazing and grain production, see the [RMA](#) or [Texas A&M](#) fact sheets for more information. This option is available for growing season 1 only and the county base value is decreased to 40% of the full county base value. This lowers the insurance guarantee, or both the premium and potential payouts. The dual option would be used when the crop is grazed out the winter and harvested in the summer; the producer would also purchase a separate multi-peril crop insurance policy (i.e. a revenue protection (RP) policy for wheat).
- Indemnities are based on changes from normal or average precipitation. If certain months are typically dry, they would have to be *even drier* for an indemnity to be triggered.
- A producer may want to look at historic grid precipitation indices and compare them to their individual precipitation and forage yield and quality experience. Annual Forage uses the same grids as PRF; historical grid indices are available at <https://prodwebnlb.rma.usda.gov/apps/prf#> on the ‘Historical Indices’ tab.
- The productivity factor can be used to adjust the county base value, or a county-level estimate of the average local value of annual forage production, upwards or downwards. Producers who have higher value crops or want more protection can select a higher productivity factor and vice versa for a lower productivity factor. The value of indemnities is based on the county base value and productivity factor, in addition to the level of actual rainfall relative to the coverage level.

Funding for this work was provided by the North Central Extension Risk Management Education Center, the USDA National Institute of Food and Agriculture Award Number 2018-70024-28586.



NORTH CENTRAL
EXTENSION
RISK
MANAGEMENT
EDUCATION



National Institute of Food and Agriculture

U.S. DEPARTMENT OF AGRICULTURE

For more information about this publication and others, visit AgManager.info.

K-State Agricultural Economics | 342 Waters Hall, Manhattan, KS 66506-4011 | 785.532.1504

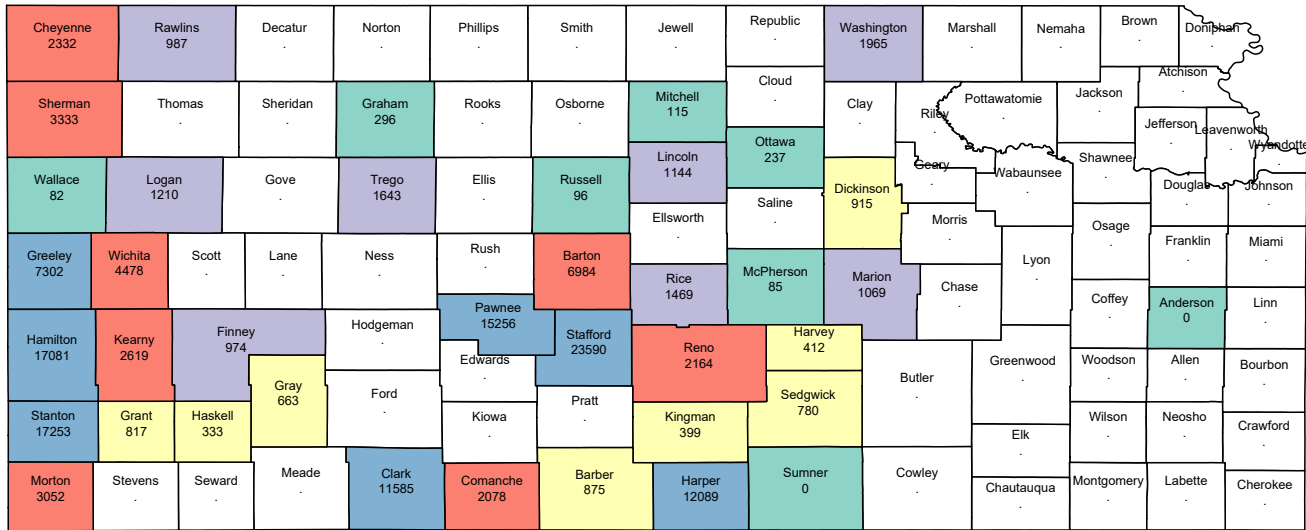
www.ageconomics.k-state.edu

Copyright 2022: AgManager.info and K-State Department of Agricultural Economics



K-State Department Of Agricultural Economics

Figure 1: Total acres insured under Annual Forage in 2021



Source: USDA Risk Management Agency data

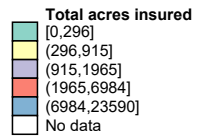
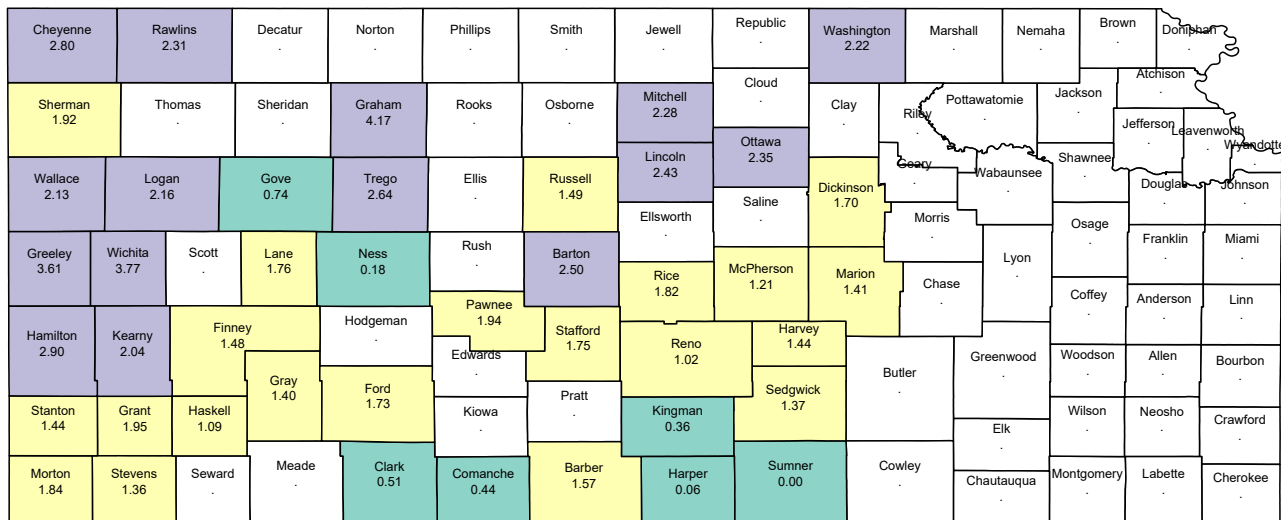


Figure 2: Annual Forage producer loss ratio: 2014-2021



Note: Data is from the USDA Risk Management Agency.
 The loss ratio is calculated as (total indemnities from 2014-2021) / (total producer premiums (total premium minus subsidy) from 2014-21).
 A loss ratio higher than one indicates that producers received more in indemnities from 2014-2021 than they paid in premiums.
 Some counties did not have participation in Annual Forage every year but are still included in the calculation with data from the years with participation.

