



Pasture, Rangeland and Forage Rainfall Index Insurance: An Insurance Product for Illinois Livestock and Forage Producers

Brittney Goodrich

Department of Agricultural and Consumer Economics
University of Illinois

October 9, 2024

farmdoc daily (14): 184

Recommended citation format: Goodrich, B. "Pasture, Rangeland and Forage Rainfall Index Insurance: An Insurance Product for Illinois Livestock and Forage Producers," *farmdoc daily* (14): 184, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, October 9, 2024.

Permalink: <https://farmdocdaily.illinois.edu/2024/10/pasture-rangeland-and-forage-rainfall-index-insurance-an-insurance-product-for-illinois-livestock-and-forage-producers.html>

The Pasture, Rangeland and Forage Rainfall Index (PRF-RI) is a crop insurance product underutilized by Illinois livestock and forage producers. Only 6% of the eligible acres in Illinois were insured in 2024, much lower than use west of the Mississippi. Like other Federal crop insurance programs, PRF-RI is heavily subsidized. Over time, PRF-RI has returned \$1.29 in payments for each \$1.00 in producer-paid premium. Illinois and Midwest livestock and forage producers should consider using PRF-RI as a risk management tool.

PRF-RI Use in Illinois

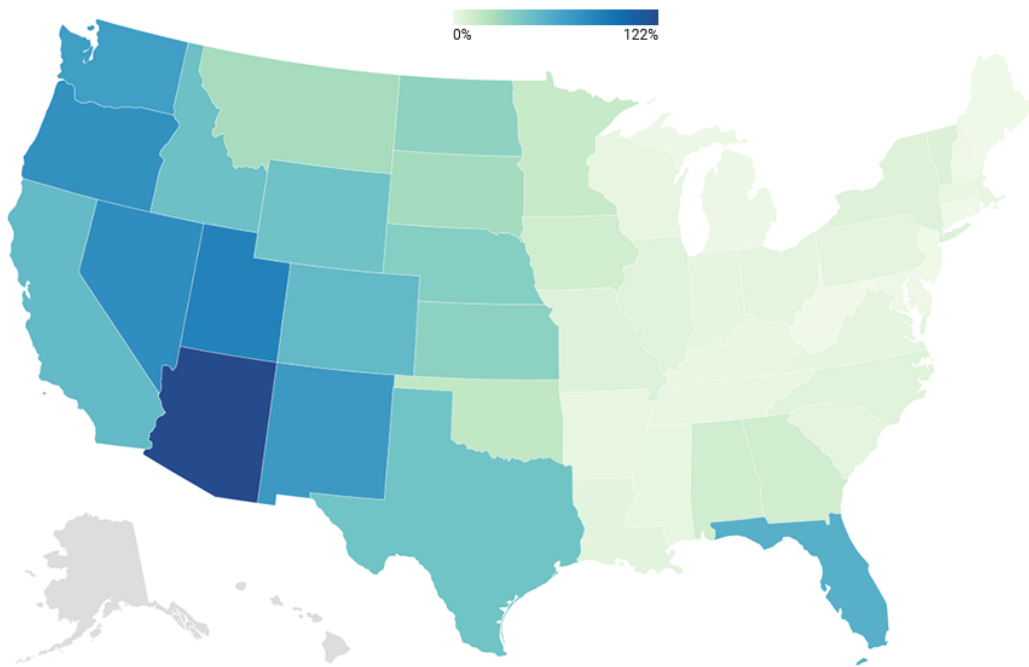
PRF-RI has been available as a risk management tool for livestock and forage producers in Illinois since 2016. According to the 2022 USDA Agricultural Census, Illinois producers operated roughly 742,000 acres of pasture and 473,000 acres were harvested for hay production. In 2024, approximately 70,000 acres were enrolled in PRF-RI, meaning less than 6% of eligible forage land in Illinois is enrolled in this subsidized insurance program. As seen in Figure 1, this participation rate is much lower than participation in states west of the Mississippi River.

Only about half of Illinois counties have any acreage enrolled in PRF-RI (Figure 2). The top five counties with the highest percentage of forage acreage enrolled in PRF-RI are Hamilton (27%) and Jefferson (24%) in southern IL, Kendall (27%) and Grundy (23%) in northeast IL, and Hancock (20%) in western IL.

Figure 3 displays the total acreage enrolled in PRF-RI in Illinois by coverage level. The highest coverage levels of 85% and 90% are most popular, and the 90% coverage level by far has had the largest growth in acreage. Of the roughly 70,000 acres of Illinois forage land enrolled in PRF-RI in 2024, 74% were enrolled at the 90% coverage level.

We request all readers, electronic media and others follow our citation guidelines when re-posting articles from farmdoc daily. Guidelines are available [here](#). The farmdoc daily website falls under University of Illinois copyright and intellectual property rights. For a detailed statement, please see the University of Illinois Copyright Information and Policies [here](#).

Figure 1. 2024 PRF-RI Enrollment Rate by State

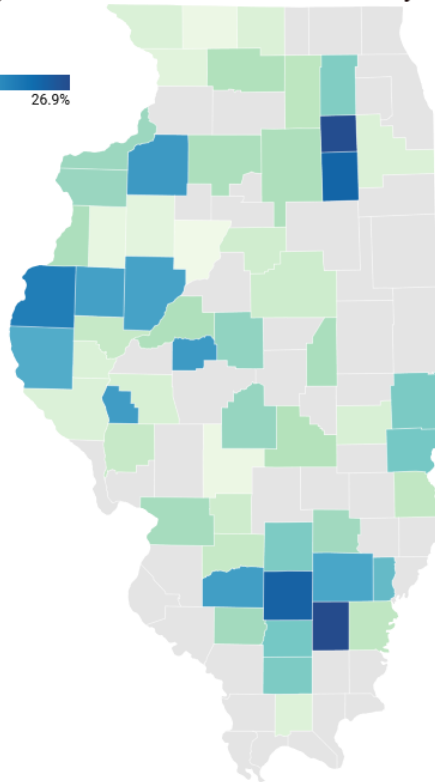


Note: Total forage acreage is the sum of harvested hay acreage, pastureland (excluding cropland and woodland), and BLM rangeland. Percentages can be over 100% due to multiple producers having insurable interest on the same land.

Map: Brittney Goodrich Source: USDA Summary of Business, 2022 USDA Census of Agriculture, and Bureau of Land Management (BLM) 2023 Public Land Statistics Created with Datawrapper **farmdocDAILY**

Figure 2. Illinois PRF-RI Enrollment Rate by County

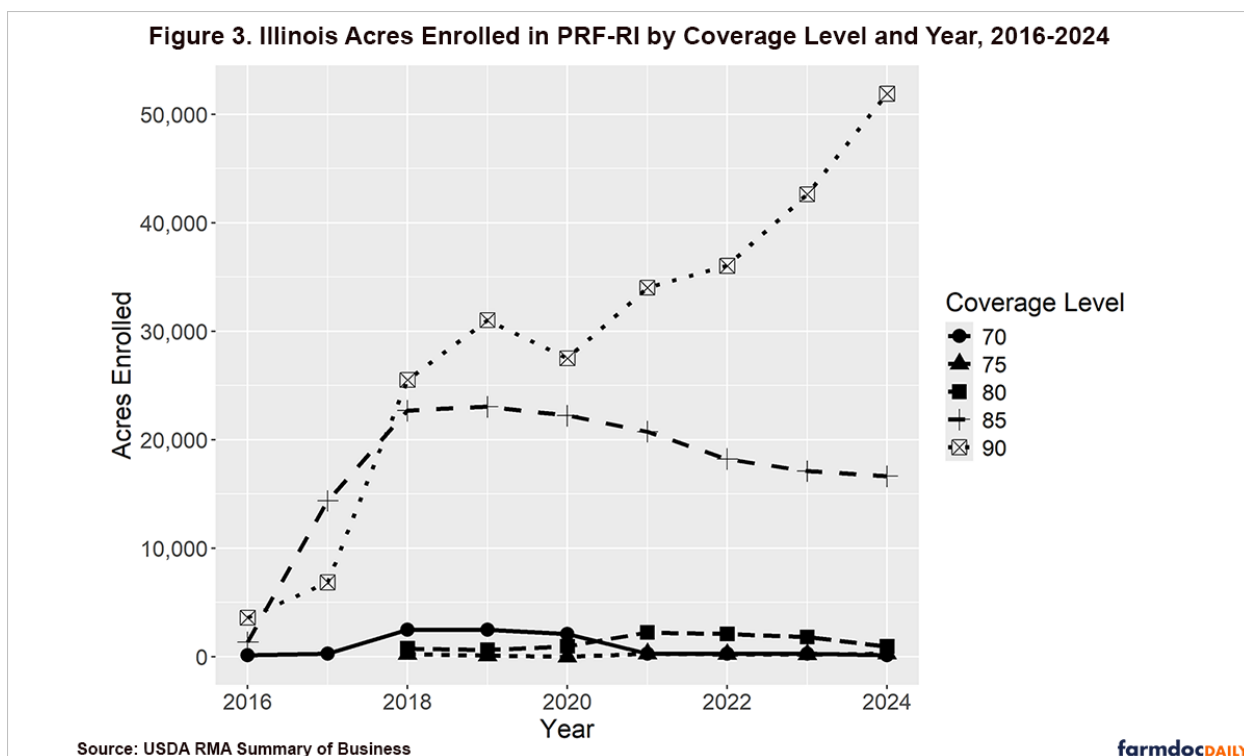
1.0% 26.9%



Note: Total forage acreage is the sum of harvested hay acreage and pastureland (excluding cropland and woodland).

Map: Brittney Goodrich Source: USDA Summary of Business and 2022 USDA Census of Agriculture Created with Datawrapper

farmdocDAILY



How PRF-RI Works

PRF-RI is meant to insure livestock and forage producers against lower than average rainfall which could decrease forage production. This program covers perennial pasture, rangeland or forage so annual forage is not covered by this insurance product.

PRF-RI is index insurance, meaning policies are not based on actual forage yields. Payments and coverage are based on a grid system, where grids cover an area of 0.25 degrees latitude by 0.25 degrees longitude (roughly 17 miles x 13 miles in Illinois). A policy is based on the specific grid in which the hay or pasture is located. Rainfall index values are calculated by a weighted average of nearby National Oceanic and Atmospheric Administration (NOAA) weather stations and are reported in relation to historical average rainfall in that grid.

To participate in PRF-RI, producers make multiple decisions:

Insured Acres: Producers must choose the number of acres to insure. Producers do not have to insure all of their forage acreage.

Intended Use (Hay or Graze): Producers must choose between haying or grazing as the intended use for the acreage. Grazing acres have a lower premium cost but also lower potential indemnity payments than hay acres. If producers indicate hay production as their intended use, they must also choose whether the acreage is irrigated or not and whether the acreage is Certified or Transitional Organic.

Coverage Level: The coverage level is the rainfall index level at which an indemnity payment is triggered. Possible coverage levels are 70, 75, 80, 85, or 90 percent. Higher coverage levels have higher premium costs. There are different premium subsidy levels (the portion of the premium that the Federal Crop Insurance Corporation will pay). Subsidy levels range from 51 to 59 percent, with the lowest coverage level (70 percent) receiving the highest subsidy level (59 percent).

Productivity Factor: Producers can adjust the covered value of their forage by adjusting the productivity factor to be between 60 to 150 percent. A base value of production is provided by the RMA for each county that differs by intended use (hay acreage typically has higher county base values). The productivity factor adjusts the coverage level relative to that base value to best represent a producer's coverage preference. Together, the decisions on coverage level and productivity factor determine the

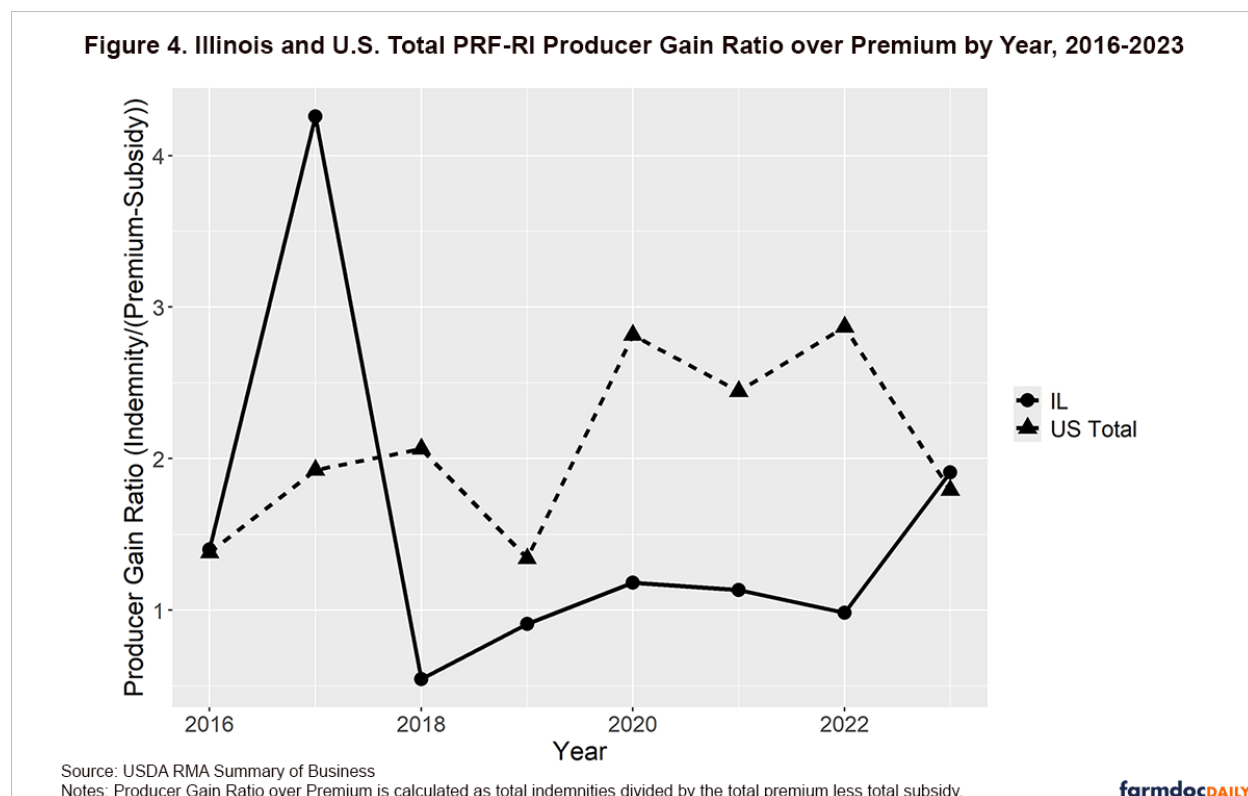
dollar amount of protection. For example, if the county base value is \$100 per acre, a coverage level of 90 percent and productivity factor of 125 percent would result in a dollar protection amount of \$112.50 per acre.

Two-month Index Interval and Percentages of Value: The crux of the PRF-RI insurance lies in the choices of coverage level and two-month intervals. Producers must choose two-month intervals in which they want to insure against low rainfall. Two-month intervals run from January/February to November/December, and a participant cannot choose overlapping intervals, i.e., March/April and April/May.

The participant must place a percentage of value into each chosen interval, and the percentage of value across all intervals must sum to 100. To minimize risk, the percentage of value should reflect the ranking of which month intervals matter most for forage production. For example, if a participant chooses 90 percent coverage and March/ April and May/June intervals, an indemnity is paid if the rainfall index in either March/April or May/June falls below 90 percent of its historical average.

PRF-RI Performance

Figure 4 shows the producer gain ratio over premium for PRF-RI from 2016 to 2023 for Illinois and the total U.S. The producer gain ratio over premium is defined as the total indemnities divided by the total producer-paid premium (total premium less total subsidy paid by the government). A producer gain ratio of one would mean that on average producers received the same amount in indemnities as they paid out in premiums. On average Illinois producers received more in indemnities than they paid out in premiums: for every \$1 spent on PRF-RI premiums, Illinois producers received \$1.29 in indemnities. This was lower than the overall U.S. total, in which producers received \$2.18 in indemnities for every \$1 paid in premiums. The producer gain ratio of course varies from year to year as seen in Figure 4. While Illinois producers on average received less per dollar spent on PRF-RI than the U.S. as a whole, it is worth noting in fewer than half of the years, Illinois producers paid more in premiums than they received in indemnities (gain ratio less than one).



Summary and Further Information

PRF-RI insurance is a subsidized insurance product that has potential advantages for livestock and forage producers in Illinois. It offers a chosen level of protection against the loss of precipitation. Because the premiums are subsidized, the producer cost of this insurance coverage is reduced.

PRF-RI is not a sufficient risk management strategy on its own. It should be utilized along with other risk management practices, such as forage diversification, improved soil fertility, and grazing management.

PRF-RI insurance can be purchased through any [authorized crop insurance agent](#). The enrollment deadline for each year is December 1 of the prior year. The premium payment deadline is September 1 of the following year, so premiums do not need to be paid up front.

The [USDA Risk Management Agency](#) provides more information as well as [an interactive decision tool](#) that can be used to search for grids, explore policy options and costs, and plot out historical rainfall indices and policy outcomes.

References

USDA RMA. Agent Locator. <https://public-rma.fpac.usda.gov/apps/AgentLocator/#/!/#%2F>

USDA RMA. Pasture, Rangeland Forage Support Tool. <https://public-rma.fpac.usda.gov/apps/PRF>

USDA RMA. Rainfall Index. <https://www.rma.usda.gov/policy-procedure/general-policies/rainfall-index>