

# COMPARISON OF CONVENTIONAL, FOUNDATION, AND ROUNDUP READY ALFALFA VARIETIES UNDER DRYLAND CONDITIONS IN NORTHEAST MONTANA

Wendy Becker, Hayes Goosey, Felixe Becker

W. Becker, Agriculture Extension Agent-Roosevelt County, Montana, Culbertson, MT 59218 406.787.5312

H. Goosey, Forage Specialist, Montana State University, Bozeman, MT 59717 406.994.5688

F. Becker, Agriscience Technician, Culbertson FFA, Culbertson, MT 406.787.6241



## Objectives

Alfalfa is Montana's greatest economic crop at 6.8 billion dollars. Alfalfa is grown every 5 years. Technology changes drastically during that time. Not much research has been done in the last 30 years on alfalfa genetics breeding for Foundation seed at the university level, but the private industry has done research on Conventional and Roundup Ready varieties. A research trial was conducted at the Froid Research Center to compare Foundation, Convention, and Roundup Ready varieties that are available locally to producers in Northeast Montana.

Agriculture is the #1 industry in Montana

It is a \$694 million-dollar industry with 1.8 million acres, and 2.05 tons/acre

Alfalfa seed production is Montana's greatest economic valued cop at \$6.8 billion dollars.

Alfalfa was brought by missionaries to the United States in the 1600's. It was produced in Montana in 1884 and established in the Yellowstone Valley. In 2004, Roundup-Ready alfalfa came on the market but wasn't heavily used. Since little research has been done on Foundation Seed compared to Conventional and Roundup-Ready seed in the last 30 years, producers were left wondering what the status of Foundation seed was. Alfalfa is important to different segments of the industry, therefore researching how it is grown in different regions is crucial.



## Agronomics

- The life span of alfalfa is 5 years
- Cuttings can be 20-45 days if irrigated.
- Ranchers rely on alfalfa especially in winter when they need 2-4 months of feed.
- Most alfalfa (90%) grown is fed to their own herds.
- Alfalfa is higher quality in both protein and energy.

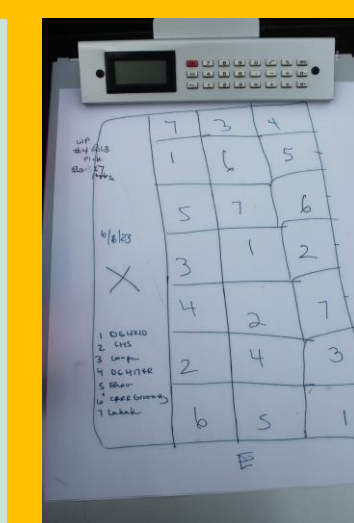
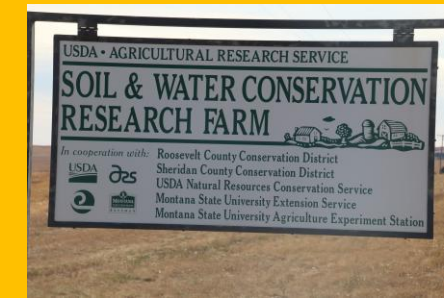
Rain fall

- 2023-15.66 in. not evenly distributed in summer
- 2024-11.37 in. mostly in June
- 2025-19.62 in. mostly July past prime growing



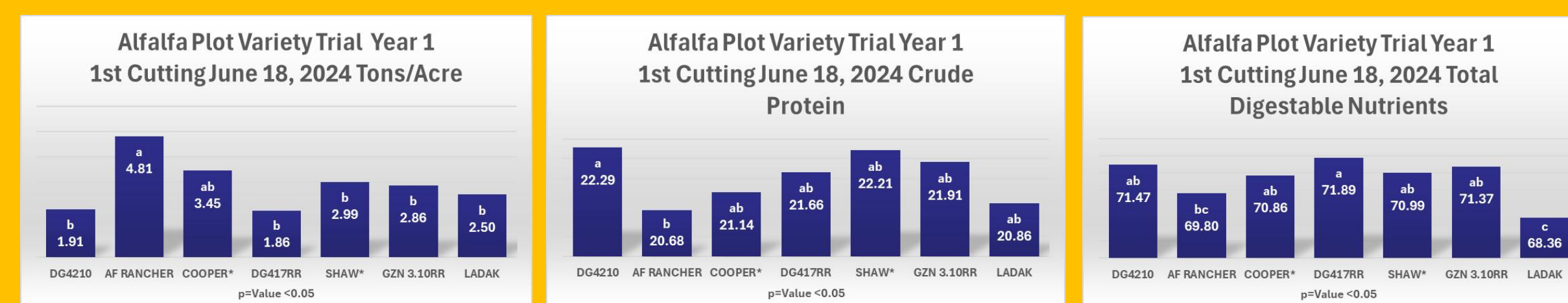
## Materials and Methods

- 7 varieties of Alfalfa seed
- Inoculant (Pre-vail)
- Scale
- Paper bags
- Scissors
- Squared ruler
- Squared ruler
- Flags
- Dehydrator
- Rake
- Cups
- Lab Testing

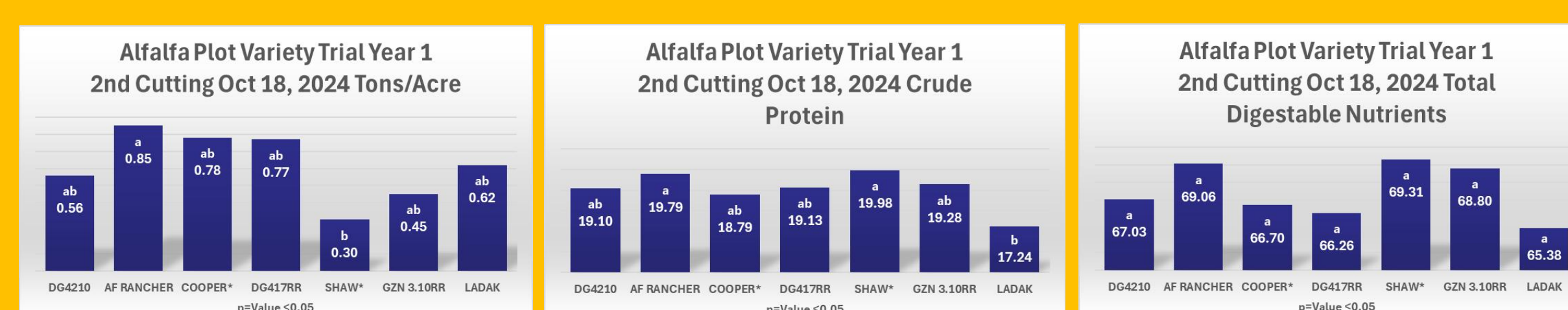


## Results: Year 1

1<sup>st</sup> cutting



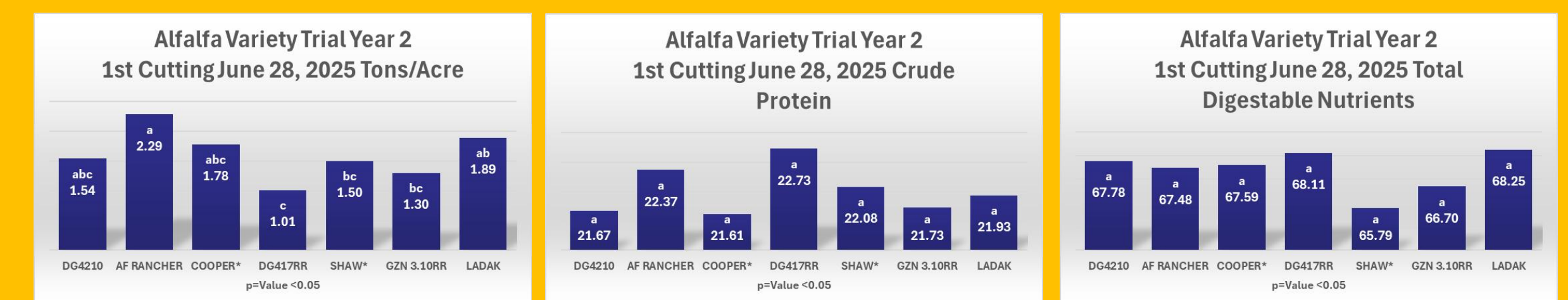
2<sup>nd</sup> cutting



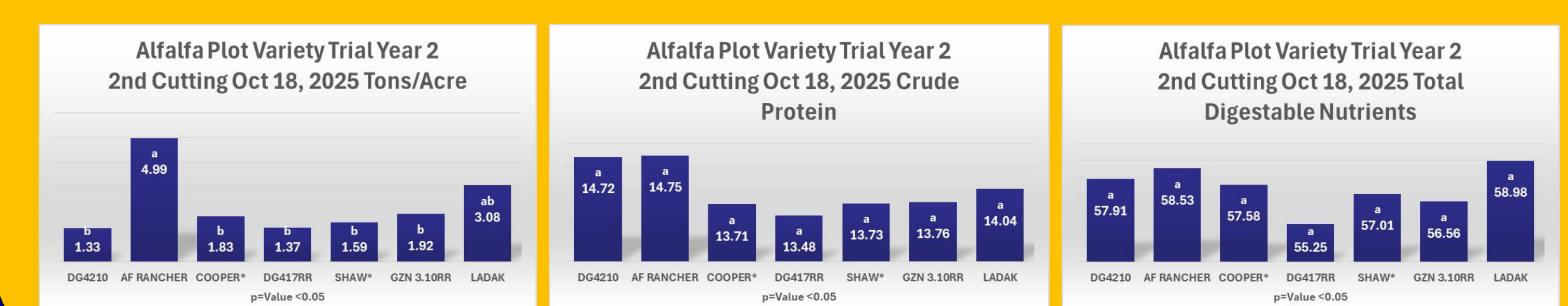
\*Shaw and Cooper = Foundation Seed

## Results: Year 2

1<sup>st</sup> cutting



2<sup>nd</sup> cutting



RR = Roundup Ready Standard = Ladak

## Conclusions

Depending on the end goal of a new or renovated alfalfa seeding, it has been determined there are available choices in our area. For forage buyers and sellers searching for quality varieties, there were mainly differences in yield, CP, and TDN, but not minerals. The Foundation seeds and conventional seeds still produce well. There wasn't one variety that stood in all factors, so producers should choose the category with the greatest economic impact for them. Since there hasn't been an alfalfa research trial for northeast Montana in 30 years, this trial serves as a lead.



## Impacts

- USDA Froid Field Days
- Swank Farm Tour
- Eastern Ag Research Report
- FFA Agriscience and 4-H Communications
- Increase in Pollinators
- Regional Magazine Modern Agriculture

## Acknowledgments

- CHS/Ag Partners Brockton - AF Rancher
- Nutrien Ag Froid – DG 4210 and DG417RR
- Clay Petersen - Ladak
- MSU Foundation Seed - Shaw and Cooper
- Winfield Solutions-Curt Droogsma – GZN3.10RR
- Roosevelt County Weed Department
- Roosevelt County Soil Conservation District
- USDA NIFA

