

Western Region Farm Bureau Field Tour  
USDA Forage and Range Research Laboratory

July 28, 2015

Evans Farm, Millville UT

The Western Region Farm Bureau Vice Presidents and administrators meet in Logan between August 26-29, 2015 for their annual meeting. As a part of that meeting the members were involved with a learning experience that was provided as part of a field tour of Forage and Range Research Laboratory (FRRL) experiments at USU Evans Farm in Millville Utah on August 28. FRRL scientists Blair Waldron (use of forage kochia to improve rangeland profitability as fall and winter forage), Joe Robins (high sugar orchardgrass to improve profitability of irrigated pastures) , Shaun Bushman (the development of drought tolerance turf grass for low-input applications), Mike Peel (the development of unique legume germplasm for irrigated and non-irrigated pastures), and Kevin Jensen (the importance of plant materials selection to improve fall and winter grazing to reduce feeding costs) gave presentations on recent advances in plant materials develop for pasture, range, and turf.



Dr. Blair Waldron explains the use of Forage Kochia on non-irrigated pastures and rangelands, where it can increase profitability by providing fall and winter forage alternative to producers.



Dr. Joe Robins provides information on the potential utility of some high sugar orchardgrass experimental lines for irrigated pastures to improve profitability.



Dr. Mike Peel discusses the values and shortcomings of legumes for irrigated pasture applications in the semi-arid western U.S.

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**Stop 1**

Blair Waldron

Strategic use of improved forages can maximize farm profitability

*Rangeland*

**Problem:** High cost of feeding livestock during the winter.

**Problem-solving approach:** Development of forages (e.g., forage kochia) that can extend the grazing into late fall/early winter.

**Projected impact:** Release of Snowstorm forage kochia that possesses higher stature and greater carrying capacity when compared to Immigrant forage kochia.

*Pasture*

**Problem:** High cost of N fertilizer and need for increased environmental stewardship on grazinglands.

**Problem-solving approach:** Evaluating the herbage yield and nutritional quality (energy) and animal performance of grass-legume pastures. Determining the genetics of grass-legume compatibility.

**Projected impact:** Reduce the need for commercial N fertilizer by identifying most efficient grass-legume mixtures and developing varieties specifically for grass-legume mixtures.

**Stop 2**

Shaun Bushman

Reduction of water use to decrease inputs in turfgrass

*Turfgrass*

**Problem:** Water use of turfgrass is excessive, and there is a need for functional turf that uses less water.

**Problem-solving approach:** We are examining the mechanisms whereby turf remains green and functional under drought and salt stress, and are improving the tolerance of major turfgrass species. Additionally, we are taking very drought tolerant range grass species and improving their turf quality.

**Projected Impact:** 30% less irrigation to maintain green and functional lawns; outreach on the suitability of each species and variety of turfgrass; broader use of low input turf in golf-course roughs, roadsides, cabins, and areas with low traffic.

**Stop 3**

Joseph Robins

*Pasture*

Development of stress tolerant nutritious pasture grasses

**Problem:** Pasture species adapted specifically to the western U.S. are unavailable. There is a need to develop high performing pasture species that require lower irrigation and persist harsh winter and summer conditions.

**Problem-solving approach:** We select improved pasture grasses under limited irrigation (75 % evapotranspiration replacement). We also select for improved winter hardiness, increased sugar

content, and later maturity. In conjunction with the selection, we use genetic approaches to identify genes controlling key traits, such as maturity and freezing tolerance.

**Projected impact:** Development of improved pasture grasses that require 25 % less irrigation water and contain higher sugars, corresponding to increased animal performance, decreased animal waste, and increased drought and winter tolerance. These grasses will be specifically adapted to irrigated production of the western U.S.

#### **Stop 4**

Kevin Jensen

*Range/Pasture*

#### Developing Plant Materials and Management Practices for fall/winter forage

**Problem:** High cost of producing mechanically harvested forage for fall/winter feed

**Problem-solving approach:** Evaluation of currently developed plant materials and development of management practices to provide fall/winter forage on a cow-calf operation.

**Projected impact:** In a collaborative study located at the Sieben Land and Livestock ranch, Cascade, MT, 1009 mother cows were grazed for two days on a 33-acre study February of 2015. Based on the animals eating 30 lbs of forage a day, 30,270 lbs of forage were grazed each day for a total of 60,540 lbs (~ 30 tons) ... the rancher estimated that this save him nearly \$1800 over the two days. When compared to their native winter range they average with the same number of cows one or fewer days on 80 acres.

#### **Stop 5**

Mike Peel

#### Development of forage legumes to improve pasture and rangeland profitability

*Pasture and Range*

**Problem:** Forage legumes can increase the productivity of pastures and rangelands. However, they are often difficult to establish due to hard seed coats (e.g., cicer milkvetch).

**Problem-solving approach:** Poor germination and stand establishment has impeded the commercialization of the nutritious forage, cicer milkvetch. We have identified variation for seed coat hardness in several populations of cicer milkvetch that will lead to the release of a cultivar with improved germination and stand establishment.

**Projected impact:** This will improve planting success of this species to improve profitability and health of pastures and rangelands.