

Forage and Range Research Laboratory Research Directions

The FRRL and its Customer-based Focus Group identified the Following Agricultural Problem Areas that Provide Opportunities for FFRL Research

- I. Current plant materials are unable to meet the needs of changing climates and growing environments.
- II. Invasive plants, wildfires, and disturbances contribute to desertification and loss of rangeland function.
- III. Current forage production systems do not meet maximum productivity potentials for rangeland and pasture growing environments.

Based on these Problem Areas the FRRL and the Focus Group Identified the Following High Priority Research Areas

Rangeland Ecology, Restoration and Plant Materials Development

- 1) Develop improved plant materials and management systems to mitigate rangelands degraded by invasive plants and wildfires.
- 2) Develop revegetation strategies to increase biodiversity and stability of rangelands.
- 3) Develop plant materials for revegetation of arid, saline, and mine lands as affected by chronic land disturbance and climate change.
- 4) Develop novel North American legumes for rangeland revegetation.
- 5) Elucidate gene discovery and genetic mechanisms of adaptive plant traits for improved plant establishment.

Sustainable Livestock Production and Forage Improvement

- 1) Development of spring and fall forage species to extend the livestock grazing season.
- 2) Identify and evaluate grass/legume mixtures to improve the sustainability of livestock production.
- 3) Develop improved plant materials to increase grazing land productivity under reduced inputs.
- 4) Develop novel forage legumes for grazing lands.
- 5) Elucidate gene discovery and genetic mechanisms of plant traits for improved forage quality and livestock production.

Reduced-input Turfgrass Improvement

- 1) Develop plant materials for improved drought, heat, and salinity tolerance.
- 2) Maintain high turf quality under decreased irrigation and fertilizer requirements.