

Grazinglands Research Laboratory



Lab Director – Dr. Jean Steiner

Great Plains Agroclimate and
Natural Resources Research Unit

Dr. Jean Steiner - RL (6 SY)

Forage and Livestock Production
Research Unit (9 SY)

Dr. Brad Venuto - RL

USDA-ARS Grazinglands Research Lab – El Reno, OK



Laboratory Resources

- 6700 acre research facility
 - tall grass prairie, grazed winter wheat, warm and cool season perennials, legume forages, wildlife, riparian and some woodland areas.
- Laboratory
 - facilities for forage quality and nutrient analysis, bomb calorimeter, etc
- Greenhouse
- Research herds and handling facilities
 - 250 cows, 1000+ stocker cattle, 300 sheep

Multi-disciplinary team

- 50 Employees (15 SY)
 - Agronomy and Ecology
 - Plant Physiology and Plant Breeding
 - Animal Nutrition and Breeding
 - Hydrology and Meteorology
 - Engineering
 - Soil Science and Geology
 - GIS, modeling, remote sensing expertise
 - Administrative and operations support

Summary of accomplishments

- Grass fed beef
- G by E for cattle grazing systems
- Grazing management
- Remote sensing
- Biofuel feedstock production
- Watershed data management
- Evaluation of utility of weather forecasting
- Models to project increases in erosion due to climate change
- Analysis of watershed sedimentation rates relative to climate variation
- Assessment of conservation efforts - CEAP

Agroforestry?

- Eastern redcedar (*Juniperus virginiana*)
 - Invasive in western Oklahoma's native prairie
 - NRCS #1 priority for Oklahoma
 - Degrades prairie and water use concerns
 - Rate of increase exceeds control measures
 - Economic uses are limited but being explored
 - Bioenergy, gasification, may be the best use

Redcedar for biofuel



Harvested and weighed 900+ trees at 3 locations

Dry biomass ranged from 6 to 19 t/acre

Wide interest – multiple partners

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