

## FORAGE RESEARCH UPDATES

### **SOUTH DAKOTA**

#### **BIOMASS FROM FORAGES: “BALES OF OPPORTUNITY”**

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Biomass from forage could empower producers to harvest “bales of opportunity” on marginal lands. The United States Department of Energy (USDOE) has identified northeastern South Dakota as an area of excellent potential for profitable production of biomass/biofuel crops. Researchers at South Dakota State University have been working with switchgrass as a model species for biomass/biofuel crop. Several switchgrass cultivars have been developed for biomass and evaluated with support from USDOE Bioenergy Feedstocks Development Program.

Sunburst, released several years ago, has been by far the highest biomass producing cultivar in the Dakotas (North and South) over the past 5 years. Cultivars of more southern origin, such as Cave-In-Rock and Trailblazer, generally outperformed Sunburst for the first 2 years in single biomass harvest after freeze up in early October. However, after 4 years, the southern cultivars with high yield potential showed substantial decline due to poor winter-hardiness. In some cases, nearly 100% stand losses occurred. In contrast, Sunburst has maintained nearly 100% stand and averaged 10,000 lb DM/acre over 5 production years in the Dakotas. If the biomass feed stock industry demands thousands of acres of switchgrass, Sunburst will be the recommended cultivar in the Dakotas.

Soon, biomass research will be expanded to include big bluestem and intermediate wheatgrass managed either for forage or biomass across several topographies. The advancement in current knowledge derived from the biomass research should be directly applicable to the rapid development of profitable lignocellulosic biomass and bio-oil production systems for marginal lands in our region.