

Bermudagrass (*Cynodon dactylon*) Grassland Project Plan Update

Submitted by Ray Cragar

In the February 2005 News and Views, Ray Cragar, Grassland Specialist, described a Bermudagrass (*Cynodon dactylon*) Grassland Project Plan. He provides a status report of the project.

In May and June of 2005, plots of seven different varieties or experimental accessions of bermudagrass were sown and sprigged. Soils, elevation, average rainfall, and temperature are substantially different at the sites in north central and eastern West Virginia: (Taylor, Mineral, and Jefferson Counties). The project purpose is to determine what trial varieties are winter-hardy and capable of providing forage during the hot, dry summer period. During this time, cool-season species tend to lose quality and quantity because the growth rate slows.

In late summer of 2005 and in late spring of 2006

- Each site was evaluated for
 - percent composition of each variety compared to weedy competition in each plot
 - vigor
 - height
- Soil temperatures were monitored
- Prescribed site preparation was attempted
- Plantings were installed

The seven varieties/accessions and source of origin are:

Varieties/ Accessions	Type	Origin
'Quickstand'	sprigs	Alderson, WV Plant Materials Center
'Riata'	seed	Johnston Seed Company, Enid, OK
JE-III	seed	Johnston Seed Company, Enid, OK
'Wrangler'	seed	Johnston Seed Company, Enid, OK

KF-777	seed	K-F Seeds, Brawley, CA
'KF-194'	seed	K-F Seeds, Brawley, CA
KF-000	seed	K-F Seeds, Brawley, CA

The goal is to determine over-wintering ability, stand longevity, forage quality, and production potential. Following is the current performance status of each variety or accessions from each site.

Taylor County, MLRA 126 and 127: small trees and shrubs mechanically removed from steep, southerly exposure planting site in late April, 2005; raked, disked, and packed prior to sprigging on May 19 and seeding on June 6. The six seeded varieties germinated fairly uniformly and became established, to varying degrees, going into the winter. Following are the results of a late spring, 2006 evaluation:

- The 'Quickstand' suffered from severe weedy competition and low sprig survival rate and resulted in discovery of less than 1% plot composition, poor vigor, and little indication of spreading.
- Of the six seeded varieties/accessions, KF-777 and 'Riata' showed the best plot composition at 20% and 10% respectively. However, 'Wrangler,' with only about a 5% stand, is the most vigorous and aggressive.

Mineral County, MLRA 127 and 147: bottomland site, renovated pasture, excellent site-preparation and installation conditions. 'Quickstand' sprigs installed on May 18, 2005; remaining six broadcast-seeded on June 1.

- The 'Quickstand' plot suffered from severe horse nettle and tall crabgrass infestation, and poor sprig establishment performance. However, the June, 2006 evaluation showed it to be 10 – 15% composition of the plot, exhibiting impressive vigor, and indicating a tendency to spread.
- The six seeded varieties/accessions all seem to have survived the winter in good shape and have begun growing/spreading. The JE-III and the 'Wrangler' are the top two performers to date, both with roughly 95% plot composition, excellent vigor, and 6" and 9-1/2" top-growth height respectively.

Photo June 6, 2006

**Varieties/
Accessions**

Origin



'Quickstand'

Alderson, WV Plant Materials Center



JE-III

Johnston Seed Company, Enid, OK



'Wrangler'

Johnston Seed Company, Enid, OK



KF-000

K-F Seeds, Brawley, CA

Jefferson County, MLRA 147: This site was extremely dry when establishment was attempted; therefore, little bermudagrass seed germinated and the sprigs seem not to have survived. Mechanical site preparation was accomplished just prior to installation of plots, with no herbicide application for control of competition. Crabgrass came on strong and overwhelmed the site. Towards the end of the growing season virtually no bermudagrass was

to be found in the plots; therefore, the decision was made to re-attempt establishment during the spring of 2006. Due to logistical problems, seed was not procured so now we are looking at spring of 2007, utilizing no-till technology with extensive site preparation/weed control this fall prior to installation.

Again, the major interest in this project is to determine if bermudagrass is winter-hardy this far north, persistent, and able to fill a niche as a warm-season perennial grass species for summer grazing. The indications are promising at this time, at least on some soils and sites in Appalachia that have had prescribed site preparation and management. The 2005–2006 winter was fairly mild so the plants have not been severely tested. The plots will be monitored, management will be adjusted according to conditions, and additional data must be collected before any conclusions about the usefulness of bermudagrass in this region of the United States can be reached.