New Switchgrass Germplasm Collected in Florida

November 26 2009, By Alfredo Flores

Forty-six new populations of switchgrass from many different environments in Florida such as from swampy areas, oak forests, pine scrubs, weedy areas along roadsides, and back dune areas along the coast have been added to the ARS germplasm collection. Photo courtesy of NRCS.

(PhysOrg.com) -- Agricultural Research Service (ARS) scientists and cooperators have collected 46 new populations of switchgrass in Florida, adding valuable new accessions to the germplasm collection of this potential bioenergy crop.

Switchgrass, a perennial warm season grass used for forage and soil conservation, is now being studied as a biomass crop for ethanol. These new additions to the switchgrass perennial grass collection could provide new genetic resources for biofuel feedstocks.

The research supports the U.S. Department of Agriculture (USDA) priority of developing new sources of bioenergy. ARS is USDA's principal intramural scientific research agency.

The native switchgrass collection trips were conducted in Florida in 2008 and 2009 by ARS agronomist Melanie Harrison-Dunn and research leader Gary Pederson at the ARS Plant Genetic Resources Conservation Unit in Griffin, Ga. They worked in cooperation with plant material specialist Mary J. Williams with USDA's Natural Resources Conservation Service (NRCS) Florida State Office in Gainesville, Fla., and senior biological technician Mary Anne Gonter with the NRCS Brooksville Plant Materials Center in Brooksville, Fla.

During the collection trips, the researchers discovered new switchgrass populations in many different environments—including swampy areas, oak forests, pine scrubs, weedy areas along roadsides, and dune areas along the coast. The scientific team braved alligators, spiders and other dangers while collecting switchgrass, often in areas endangered by habitat destruction.

There was significant genetic variation in the switchgrass populations found, including differences in seed maturity, foliage abundance, plant height, and panicle (fruit attached to branch) size. GPS coordinates for each location were recorded, as well as elevation, plant description, site description, abundance and distribution of plants in the area, and other vegetation found at the site.

The materials will be deposited in the ARS National Plant Germplasm System (NPGS), where it will be preserved and maintained for future research by plant breeders and others interested in improving this valuable grass.

Provided by USDA Agricultural Research Service