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USDA-NATURAL RESOURCES CONSERVATION SERVICE

Mid-South Plant News

A Jamie L. Whitten Plant Materials Center Publication

Plant Spotlight

Eastern gamagrass [*Tripsacum dactyloides* (L.) L] is a native warm season perennial bunchgrass that once covered thousands of acres across the Southeast but has been virtually eliminated due to poor grassland management. However, because of the efforts of the NRCS Plant Materials Program and the USDA-Agriculture Research Service, eastern gamagrass is steadily gaining popularity for forage and conservation use.

Eastern gamagrass has a medium to erect growth habit that spreads by short rhizomes and produces seed on stems 3 to 9 feet tall from July to September. Eastern gamagrass is native throughout the southeastern U.S., but may be found growing from Massachusetts to Michigan, Iowa and Nebraska south to Oklahoma and Texas. Eastern gamagrass flourishes in areas receiving 36 to 50 inches of rainfall. It can be found growing in swales, along stream banks, and other lowland areas that are fertile and moist.

Eastern gamagrass has the potential to produce substantial forage yields under proper fertility and harvest management. Studies conducted at the Jamie L. Whitten Plant Materials Center found that gamagrass harvested on 45 day clipping frequency produced higher season total dry matter yield than 30 day bermudagrass and 45 day switchgrass (see table below).

Influence of clipping frequency on season total dry matter yield of 3 warm season grasses, 1996-1998, Coffeeville, Mississippi.

Species	Frequency	1996	1997	1998	Mean
		----------lbs / acre ----------			
Bermudagrass	30 day	11651	10221	10542	10775
Eastern gamagrass	45 day	10361	14652	12329	12447
Switchgrass	45 day	3130	7914	12300	7781

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Special points of interest:

NRCS Practice Standard 601

Vendors guide to Conservation Plants

Eastern gamagrass beats bermudagrass

Mississippi Planting Guide

Plant Materials Publications

Acquisition of seeds and plants for conservation use is often hampered by a lack of knowledge of vendor locations and materials they supply. Local farm and ranch centers are able to supply seeds of common crop varieties as well as locally adapted grasses and legumes. Often these centers do not carry or have access to seed and planting stock of many plants that are popular for wildlife plantings, rehabilitating drastically disturbed lands, and other conservation uses. The following publications are available from the PMC to assist with locating plants for conservation use and offering guidance for planting and management of commonly used species.

Seed and Plant Vendors of Conservation Plants

This publication will serve as a reference to assist conservationists in locating vendors of plant materials used for resource conservation programs. It contains a list of seed and plant dealers by state, address, telephone, and fax number. Herbaceous and woody plants are sorted alphabetically both by common name and by scientific name. Plants species within sections are grouped by plant type. There are 94 vendors and 176 species listed.

Directory of Wetland Plant Vendors in the United States

This directory provides a national listing of vendors indexed by scientific name of wetland plant species. This is an updated version of the 1992 *Directory of Wetland Plant Vendors* published by the U.S. Army Corp of Engineers, Waterways Experiment Station. This directory provides a listing of wetland plant vendors and their contact information. Included are obligate and facultative wetland plant species for which vendor sources were found. There is 363 vendors and 1100 species listed.

Mississippi Planting Guide

This is the 3rd edition of this publication containing plant guides on various types of plant materials used or with potential for use in resource conservation programs in Mississippi. Each plant guide contains a brief plant description; conservation use; soil adaptation; zone of adaptation in MS; recommended plant varieties or sources; and cultural specifications for establishment and management. There are over 75 species listed.

You can also look forward to journal articles from Janet Grabowski and Joel Douglas in upcoming issues of *Native Plants* and *Seed Science and Technology*.

Eastern gamagrass

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Seed Quality

Planting quality seed is one of several factors necessary for establishing successful stands of eastern gamagrass. Indeterminate seed maturity (seed does not mature at one time) is a factor that indirectly affects seed quality. A typical combine-run harvest consists of complete seed units (fruitcase with filled seed), incomplete seed units (fruitcase with unfilled seed) and other non-viable inert matter. Filled seed is one that has potential to germinate given favorable environmental conditions whereas unfilled seed is immature and thus will not germinate. Inability to adequately separate filled seeds from unfilled seeds using normal cleaning techniques may lead to poor establishment. Work at the PMC has shown that cleaning seed with an air fractionating aspirator and gravity separator can greatly improve seed quality of eastern gamagrass by separating filled seed fractions from unfilled fractions.

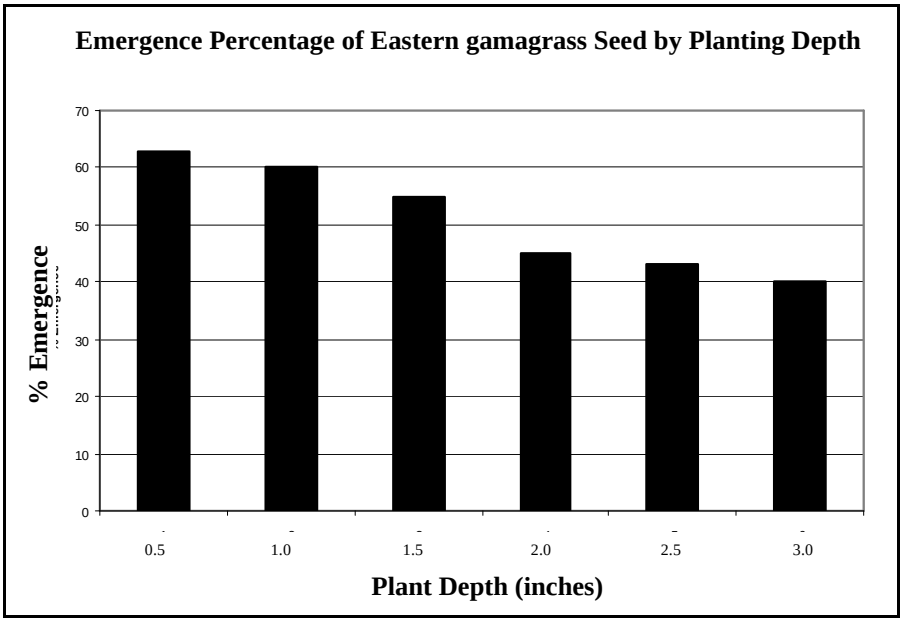
Percent seed fill by lot and fraction for two cleaning techniques.

	AFA[1/]			GS[2/]
	Gamagrass Seed Lot			
Fraction	**A**	**B**	**C**	**C**
	----------%----------			
1	93	90	87	90
2	90	90	80	30
3	57	73	43	--
4	10	20	20	--
ASC*	47	23	23	23
LSD (0.05)	22	12	25	30

* Air Screen Cleaner
1/ - Air Fractionating Aspirator
2/ - Gravity Separator

Planting Depth

Planting quality seed eastern gamagrass at the proper depth is essential for seedling growth and development. This is especially true for gamagrass seed that has been stratified (seed that has been exposed to cool, moist conditions). Planting stratified seed too shallowly increases the potential of the seed to dry out before germinating, and can result in secondary dormancy. In other words, seed germination may be delayed until next year. Planting seed too deeply may also prevent seedling emergence. The graph below illustrates how seeding depth can affect seedling emergence.



The information outlined in this article offers a brief glimpse of the enormous amount of information that must be gathered before a PMC can release a new and improved plant.

A farmer or rancher does not have the time or money to test each new plant they use. The PMC will continue to take these "extra steps" developing plant cultivars so that the end user will have peace of mind when they make a decision.

Such testing allows us to provide conservationists with a good product that can be recommended with confidence.

Jamie L. Whitten PMC

COFFEEVILLE, MISSISSIPPI

PMC Highlights

USDA-NATURAL RESOURCES CONSERVATION SERVICE

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August 9

Joel, Janet and Scott presented poster presentations at the Soil and Water Conservation Society Annual Conference in Biloxi, MS.

November 17

Joel, Janet and Scott presented oral presentations at the Native Grass Symposium in Baltimore, Maryland. Papers will be published in conference proceedings.

February 8-11

The PMC recently held a Plant Materials Advisory Committee meeting. Those in attendance were Rick White, National Program Leader, Washington, DC; John Scheetz, National PM Info. Coordinator; Larry Holzworth, PMS, Bozeman, MT; Dan Ogle, PMS, Boise, ID; John Dickerson, PMS, Syracuse, NY; Mike Materne, PMS, Baton Rouge, LA; and Jimmy Henry, PMC Manager, Elsberry, MO.

Ask the Expert

Q. What is a vegetative barrier?

Vegetative barriers, identified as NRCS Conservation Practice Standard 601, are 3-5 ft wide strips of stiff, erect vegetation planted on the contour or across the slope of a cropland field on a spacing similar to parallel terraces. They function to slow water runoff, trap sediment, reduce sheet, rill, and ephemeral gully erosion.

The Jamie L. Whitten PMC cooperating with the ARS Sedimentation Laboratory in Oxford, MS played a key role in the development and testing of this practice. Currently, 'Alamo' switchgrass (*Panicum virgatum* L.), a native warm season perennial grass, is recommended for VB plantings. Alamo has many desirable attributes for a vegetative barrier specie including large stem size and high density, manageability for narrow strips, and ease of establishment. Because Alamo may grow to heights of 8 to 10 ft., clipping is necessary to prevent crop yield loss in adjacent rows. The PMC is addressing this problem by evaluating two lower growing accessions 9062821 (Kemper Co., MS) and 9062839 (Chickasaw Co., MS). This practice is a valuable tool that a conservationist can use to assist farmers with soil erosion problems.