United States Department of Agriculture

A Conservation Plant Released by the Natural Resources Conservation Service
Booneville Plant Materials Center, Booneville, Arkansas

'Bumpers' Eastern Gamagrass

Tripsacum dactyloides (L.) L.

'Bumpers' eastern gamagrass was released in 2005 by the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Booneville Plant Materials Center (PMC), Booneville, AR.

Description

'Bumpers' eastern gamagrass is a native, warm season, perennial grass that forms large clumps, with thick, knotty rhizomes. Mature foliage height is approximately 5 feet tall. Foliage is bluish-green in color; blades are jagged on the margins and range from less than ½ to slightly over ¾ inch in width. Flowers are produced from June to August. Flower stalks are approximately 8 feet tall and may lodge slightly when seeds mature. Spikes are 8 to 10 inches long with separate male flowers held above the female flowers. Seed grain or caryopsis is contained in a tough fruitcase. Bumpers averages approximately 3500 seed units (grain with fruitcase) per pound. Since Bumpers is a tetraploid, seeds are produced apomictically (asexual) and are genetically identical to the mother plant.

'Bumpers' eastern gamagras, USDA-NRCS Booneville, Arkansas Plant Materials Center.

Source

The original seed source for 'Bumpers' was collected in Yell County, AR in 1989. 'Bumpers' was initially evaluated at the USDA-NRCS Booneville PMC from 1994 through 1998 as accession 9058495. Initially, 9058495 was one of 252 accessions collected from native stands in eastern Oklahoma, southern Missouri, and western Arkansas. From these initial evaluations, 'Bumpers' was determined to have superior vigor, growth form, and disease resistance.

Conservation Uses

'Bumpers' is recommended for forage production. It is best used as a hay crop; however, it can be grazed if given appropriate management (i.e. rotational grazing) to prevent damage to the plant stand. It also has potential as a perennial silage crop, a source of biomass for bioenergy production, and as a possible nutrient sink for water quality improvement. It can be also used for conservation cover and as a conservation buffer.

Area of Adaptation

'Bumpers' is well adapted for use in the eastern portions of USDA Plant Hardiness Zones 6b to 8a, using Instate 35 as its western limit (98th meridian). It grows best on well-drained, fertile soils; however, it may tolerate heavier more poorly-drained soils.

Establishment and Management for Conservation Plantings

Seed dormancy, caused by the hardened fruit covering, adversely affects seed establishment. To help overcome this dormancy, seeds should be given a 6 to 10-week cold, moist treatment (stratification) before planting. Plantings of stratified seed should be done in spring, April 1 to May 15, at a rate of 20 lbs. pure live seed (PLS)/acre. For seed mixes, adjust the rate according to the desired percentage of 'Bumpers' in the mix. Seed should be planted approximately 1 to 1.5 inches deep in medium textured soil or a little deeper in light textured soil. A clean, firm, and weed free seedbed, with adequate soil moisture, is essential to achieve a good stand. 'Bumper's can be seeded with conventional or native grass drill. A less preferred method of planting is broadcasting seeding on a prepared seedbed. If seed are broadcast planted, cultipacking or a light drag is needed to cover seed and to ensure good seed-to-soil contact. Hydroseeding may be used for areas not accessible by conventional planting equipment.

Fertilization is not recommended for the initial year of planting unless the soil test indicates a severe deficiency in soil nutrients. Avoid applying nitrogen fertilizer until the grass is fully established. Applying nitrogen fertilizer in the establishment year will only promote weeds, which will likely slow establishment of the grass. Apply nitogen fertilizer at 120-150 lb/acre in split applications of 30 to 50 lb/acre beginning at spring green-up and after each harvest (roughly six-week intervals). Allow 6 weeks regrowth prior to first killing frost. Other fertility requirements should be based on soil test results. The optimum soil pH range is 6.0 to 6.5.


Seed from 'Bumper' eastern gamagrass, USDA-NRCS Booneville, Arkansas Plant Materials Center.

Grazing should be deferred from new plantings for at least one year. Do not graze or cut below 8 inches and allow ample recovery time between cutting or grazing events. The best quality hay is cut in the boot stage. Periodic prescribed fire will help maintain stand health and stimulate production. Contact your local NRCS office for assistance with developing a prescribe grazing plan or burn plan. Mowing and pre-emergent herbicides may be used to control weed competition after establishment where applicable. For herbicide recommendations, contact your local extension office.

Ecological Considerations

No severe insect or disease problems have been observed on 'Bumpers'. However, in hot climates with high moisture and high soil pH, eastern gamagrass have been known to be susceptible to fungal pathogens, for example Take-all (*Gaeumannomyces graminis*) and rust (*Puccinia tripsaci*). Also, insects such as stalk borer (*Diatraea crambidoides*) and maize billbug (*Sphenophorus maidis*) have been identified as pest in eastern gamagrass. Good management practices to reduce thatch, such as control burning, can minimize pest problems.

Seed and Plant Production

Seed production fields can be established from seed or transplanted plugs. Seed is harvested by direct combining. Seed is air dried to reduce moisture content to prevent molding in storage and improve partial cleaning with an air-screen cleaner. Seed quality can be further increased by removing unfilled seed by air fractionating aspirator or gravity separator. Seed should be stored at 50°F with a relative humidity of 50% to maintain long-term viability.

Availability

For conservation use: Breeder seed is available to growers for seed increase. Seed of 'Bumpers' eastern gamagrass is maintained by USDA NRCS Booneville Plant Materials Center.

Citation

Release Brochure for 'Bumpers' Eastern Gamagrass **[***Tripsacum dactyloides* (L) L.] USDA-Natural Resources Conservation Service, Booneville Plant Materials Center, Booneville, AR. Published March 2020

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