UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
BIG FLATS, NEW YORK

AND

CORNELL UNIVERSITY COLLEGE OF AGRICULTURE AND LIFE SCIENCES
ITHACA, NEW YORK

AND

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
WASHINGTON, D.C.

RELEASE NOTICE OF 'MEADOWCREST' EASTERN GAMAGRASS

U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), New York State College of Agriculture and Life Sciences, Cornell University, and the U.S. Department of Agriculture, Agricultural Research Service (ARS) announce the naming and release of 'Meadowcrest' eastern gamagrass [Tripsacum dactyloides (L.) L.]. 'Meadowcrest' eastern gamagrass has been assigned the Plant Introduction number 591483, it had previously been assigned NRCS accession number 9051764.

'Meadowcrest' is a combination of five accessions collected vegetatively in 1983. It was collected in Prince Georges Co., Maryland, near the town of Beltsville, Latitude 39 deg 1' 32.735" N, Longitude 76 deg 49' 29.315" W. Elevations of the sites were between 30 and 45 meters in plant hardiness zone 7b. The soils in the collection areas were Keyport fine sandy loam and Sunnyside loam.

'Meadowcrest' is a tetraploid ($2n = 4x = 72$) which reproduces through apomixes. It has a monoecious seed head with an inflorescence which is consistent with the species and similar to 'Pete'. The plant has wider leaf blades then 'Pete', and flowers 10 – 14 days later. The leaves are light green, especially when not fertilized with nitrogen. In 2005 the average seed weight per 100 seeds including hard seed coat was 107 milligrams compared to 84 milligrams for 'Pete'. 'Meadowcrest' is observed to have greater response to nitrogen fertilizer than 'Pete', exhibiting a darkening of the leaves and increase in biomass production. 'Meadowcrest' readily produces seed, producing seed yields and tests of a quality comparable to 'Pete' eastern gamagrass. Replicated trials indicated that 'Meadowcrest' produced almost 2,240 kilograms per hectare per year more forage than 'Pete' with three cuttings; these results were significant at the $P < 0.05$ level for the third year of data. The forage quality as measured by percent CP and IVOMD was not significantly different than 'Pete' ($P > 0.05$). The forage quality analysis was conducted at the USDA-ARS Southern Plains Range Research Station, Woodward, Oklahoma.

'Meadowcrest' is a composite of five tetraploid accessions; 9038565, 9038566, 9038567, 9038568, 9038569. The progeny of the composite are extremely uniform. These accessions were selected from 450 accessions collected in the Midwest and Mid-Atlantic region of the U.S. They were selected for dense vegetative growth, upright growth habit, wide leaf, late flowering date and resistance to foliar disease. Plants were evaluated for 8 years. 'Meadowcrest' is an increase of these five accessions.

This cultivar is adapted to plant hardiness zone 6 and higher. There has been some seedling mortality during the establishment year at Big Flats and in areas north. In Canton, New York, the vigor of plants established vegetatively were reduced over time.

An Environmental Evaluation (PM manual exhibit 540-31) was conducted to determine any potential impact the release may have on the environment. Due to low seed production per plant, the depth the seed usually needs to be planted, the slow vegetative spread and low seedling vigor compared to cool season vegetation in the area of intended use the plant scored low to moderate as being a potential problem.

The conservation use for this plant is for wildlife and vegetative filter strips in conjunction with other plants and may be used for forage production. It is native to the mid Atlantic region and can be used for restoration projects in areas where eastern gamagrass is a component of that ecological community.

Availability of Plant Materials: Seed of 'Meadowcrest will be deposited in the National Plant Germplasm System, where it will be available for research purposes, including development and commercialization of new cultivars. Appropriate recognition is requested if this release contributes to the development of a new breeding line or cultivar. 'Meadowcrest' eastern gamagrass can only be marketed by variety name as a class of certified seed. 'Meadowcrest' eastern gamagrass can be obtained by contacting Alan Westra, Manager, New York Seed Improvement Project. 103 C Leland Lab Cornell University, Ithaca, NY, 14853 (607-255-9869). Breeder Seed will be maintained at the NRCS, Big Flats Plant Materials Center.

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Signatures for release of

'Meadowcrest' eastern gamagrass, *Tripsacum dactyloides* (L.) L.

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Table 1a-c. Eastern gamagrass forage yield, crude protein (CP), and in vitro dry matter digestibility (IVOMD) for each harvest at the Big Flats Plant Material Center (USDA-NRCS) near Corning, NY in years 2001-2003.

Table 1a. Year 2001		Harvest/date			Total or AverageH
Cultivar or Experimental line		1 20 June	2 3 August	3 5 October	
Pete	Yield (lb/a)	1075 ab	2985 ab	2875 ab	6935 bc
	CP (%)	17.3 a	12.7 abc	10.6 b	12.5 ab
	IVOMD (%)	67.5 b	58.3 ab	50.3 b	56.4 ab
FGT-1	Yield (lb/a)	530 bc	2720 c	3460 ab	6710 bc
	CP (%)	18.7 a	13.9 a	12.1 a	13.4 a
	IVOMD (%)	66.9 b	56.5 b	49.8 b	53.8 b
FT II	Yield (lb/a)	1310 a	4575 a	3965 a	9850 a
	CP (%)	17.3 a	12.8 ab	10.1 b	12.4 ab
	IVOMD (%)	67.3 b	58.8 ab	53.9 a	58.0 a
FT IV	Yield (lb/a)	325 c	1645 d	2575 b	4545 c
	CP (%)	17.5 a	14.5 a	10.9 ab	12.6 ab
	IVOMD (%)	69.5 a	61.9 a	56.0 a	59.1 a
'Meadowcrest'	Yield (lb/a)	1705 a	3980 ab	3220 ab	8905 ab
	CP (%)	14.3 b	11.1 b	10.1 b	11.3 b
	IVOMD (%)	65.8 b	54.0 b	55.4 a	56.8 a

Table 1b. Year 2002		Harvest/date			Total or AverageH
Cultivar or Experimental line		1 26 June	2 31 July	3 9 October	
Pete	Yield (lb/a)	5730 a	4650 ab	2460 a	12840 ab
	CP (%)	14.8 b	14.4 a	15.5 a	14.9 a
	IVOMD (%)	55.3 a	56.5 a	55.4 ab	55.8 ab
FGT-1	Yield (lb/a)	4270 a	2710 b	1940 a	8920 b
	CP (%)	16.6 a	14.3 a	15.2 a	15.4 a
	IVOMD (%)	53.1 a	51.5 b	53.2 b	52.3 b
FT II	Yield (lb/a)	5310 a	5050 ab	3000 a	13360 a
	CP (%)	15.3 ab	13.2 a	14.4 a	14.3 ab
	IVOMD (%)	56.6 a	57.7 a	58.0 a	57.2 a
FT IV	Yield (lb/a)	4630 a	4450 ab	2415 a	11500 ab
	CP (%)	15.1 ab	12.7 a	14.7 a	14.1 ab
	IVOMD (%)	58.1 a	57.7 a	57.7 a	57.8 a
'Meadowcrest'	Yield (lb/a)	5250 a	6300 a	3020 a	14560 a
	CP (%)	14.5 b	11.6 a	13.9 a	13.1 b
	IVOMD (%)	57.2 a	56.0 ab	56.8 ab	56.7 a

H Yield is calculated as a total of all harvests.
CP and IVOMD are calculated as a weighted averages of all harvests.

Table 1c. Year 2003		Harvest/date			Total or AverageH
Cultivar or Experimental line		1 June 20	2 July 25	3 September 5	
Pete	Yield (lb/a)	4130 ab	4210 b	5170 a	13510 b
	CP (%)	21.8 a	15.8 b	13.3 a	16.6 ab
	IVOMD (%)	68.2 ab	59.1 a	58.9 a	60.7 a
FGT-1	Yield (lb/a)	2540 c	3620 b	5350 a	11510 c
	CP (%)	22.8 a	17.4 ab	15.1 a	17.5 a
	IVOMD (%)	69.8 a	60.3 a	48.5 b	56.9 b
FT II	Yield (lb/a)	3310 cd	4980 b	5630 a	13925 b
	CP (%)	22.8 a	18.0 b	13.8 a	17.4 a
	IVOMD (%)	67.6 ab	62.1 a	55.0 a	60.5 a
FT IV	Yield (lb/a)	4470 a	4660 b	5540 a	14675 a
	CP (%)	22.0 a	16.0 b	13.7 a	17.0 ab
	IVOMD (%)	68.0 ab	59.8 a	53.0 a	59.7 a
'Meadowcrest'	Yield (lb/a)	3210 c	6410 a	6140 a	15765 a
	CP (%)	21.5 a	15.8 a	13.4 a	16.0 b
	IVOMD (%)	66.1 b	59.1 a	53.7 a	58.9 ab

H Yield is calculated as a total of all harvests.
CP and IVOMD are calculated as a weighted averages of all harvests.