

Eastern Gamagrass — Corn's Cousin With A Future

WASHINGTON, D.C. — Eastern gamagrass, a perennial cousin to corn that resists drought and withstands wet soggy soils, holds promise of becoming a dual-purpose forage-grain crop for the 21st century, according to U.S. Depart-

ment of Agriculture scientists.

The grass produces high-protein, nutty flavored grain kernels, about a seventeenth the size of corn. Someday the grain may be produced to feed farm animals or ground into flour for bakery goods

savored by nutritious-conscious consumers, said Chester L. Dewald, an agronomist of USDA's Agricultural Research Service.

Unlike corn, eastern gamagrass, which was a common sight to early settlers in the eastern half of the U.S., thrives without annual replantings. Improvements in the warm-season forage grass and its reestablishment may relieve farmers' anxiety in future years like 1993, when many Midwestern fields remained wet through planting season.

Through modern genetics, Dewald and his colleagues at Woodward, Oklahoma expect crosses between eastern gamagrass and corn will be used to speed improvements to both crops.

As for a dual-purpose crop, Dewald said, "We still have a long way to go but it can be done."

Within the past few months, Bryan K. Kindiger, an ARS cytogeneticist at Woodward, has reported discovery of at least a dozen proteins or enzymes that differ between eastern gamagrass and its cousin corn. "These enzymes could serve as markers for mapping genes in a corn-eastern gamagrass cross," Kindiger said.

"Researchers could use these markers to identify plants with the desired combinations of genes, such as for resistance to disease or insects, without having to breed such high numbers of plants."

The scientists are trying to develop new strains of eastern gamagrass with genes that feminize male portions of the flower. Such plants could produce up to 20 times as many seeds as plants without the gene.

"After we develop eastern gamagrass breeding lines with many desired genes, we hope to lock in these genes for succeeding generations through apomixis — asexual reproduction through seed," Kindiger said.

The research team has found that a plant must have two genes on different chromosomes to apomixis. Now they are looking for an enzyme or other genetic marker that is associated with the two apomixis genes. Using marker assistance to select parent

strains with the apomixis genes would help plant breeders avoid making many crosses to produce just a few apomictic plants, Kindiger said.

New generations of apomictic plants have exactly the same genes as their maternal parent. No new genes from a second parent come into play to alter the offspring's genetic makeup. By crossing two eastern gamagrass strains, each with a different genetic makeup for apomixis, the ARS scientists have produced hybrids called triploids that reproduce only by apomixis.

Kindiger says eastern gamagrass genes for apomixis may someday be put into corn breeding lines to produce asexual hybrid seed. Although hybrid vigor of apomictic plants would persist generation after generation, tempting some farmers to grow their own "perpetual hybrid" seed, commercial seed producers also could use the technology for developing new hybrids.

A report on ARS research on eastern gamagrass appears in the April issue of Agricultural Research magazine, the monthly publication of the Agricultural Research Service.

Farm Forum

(Continued from Page A10)

of life improved comparatively? Do we have more leisure time, do we work fewer hours and less strenuously?

I don't know about you, but I don't, and neither do many of the farmers I know.

Somehow, the farmer is the eternal optimist, forever hanging in there, hoping and praying that tomorrow it will get better, but

before that tomorrow comes for most of us, we are like that old Dutchman, "too soon old, too late smart."

God bless the optimists. No one else will!

Harold R. Stoudt
Hamburg

P.S.: I seriously doubt whether you have the intestinal fortitude to print this one, but I sure hope you will.

Farm Calendar

(Continued from Page A10)

Sunday, May 29

Monday, May 30
Memorial Day

Tuesday, May 31

Wednesday, June 1

Nutrient Management Advisory Board meeting, 2301 N. Cameron St., Harrisburg, 9:30 a.m.-3:30 p.m.

Pa. Dairy Industry Futures Forum, Penn State Scanticon Conference Center Hotel, University Park.

Thursday, June 2

Dairy On-Farm Problem-Solving Satellite Conference, down-linked to Lancaster Farm and Home Center and other sites, call local extension office for details.

Friday, June 3

Philadelphia County Fair, Fair-

mount Park, thru June 12.

Saturday, June 4

Md. State 4-H Horse Judging Contest, Howard County Fairground.

Md. 4-H Dairy Youth Fun, Frederick County 4-H Camp and Activities Center, thru June 5.

Sunday, June 5

Monday, June 6

Tuesday, June 7

Ag Technology Day, Early Summer Crop Management Field Session, Westmoreland Fairgrounds, 1 p.m.-4 p.m. and 7 p.m.-9 p.m.

Wednesday, June 8

Pa. Veterinary Nutrition Forum monthly meeting, Days Inn, Lancaster.

Catawissa Valley Fair, Catawissa, thru June 11.

Thursday, June 9

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