

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Washington, D.C.

and

UNIVERSITY OF FLORIDA
Institute of Food and Agricultural Sciences
Gainesville, Florida

and

FLORIDA SUGAR CANE LEAGUE
Clewiston, Florida

NOTICE OF RELEASE OF SUGARCANE CULTIVAR CPCL 99-4455

The U.S. Department of Agriculture, Agricultural Research Service (ARS), Washington, D.C.; the University of Florida, Institute of Food and Agricultural Sciences (IFAS), Gainesville, FL; and the Florida Sugar Cane League, Inc., Clewiston, FL, working cooperatively to breed and select improved sugarcane cultivars, have jointly developed and hereby announce the release of a new cultivar, CPCL 99-4455. Scientists representing ARS in the cooperative breeding program were: B. Glaz, Research Agronomist; J.C. Comstock, Research Plant Pathologist; N.C. Glynn, Molecular Biologist; S.J. Edmé, Research Geneticist; I.A. del Blanco, Research Geneticist, and S.B. Milligan, Research Geneticist (currently with Monsanto Corp.); representing IFAS was R.A. Gilbert, Associate Professor; and representing the Florida Sugar Cane League, Inc. was R.W. Davidson, Agronomist.

The cross, made by Dr. David G. Holder, from which CPCL 99-4455 was selected was made on 22 December 1998 in Clewiston, FL in a private sugarcane breeding program of the United States Sugar Corporation (USSC). Scientists at USSC included CPCL 99-4455 in tests from 1999 until 2004 when USSC discontinued its sugarcane breeding program and donated much of its germplasm, including CPCL 99-4455, to ARS. In addition to S.B. Milligan, Chief Geneticist; R.W. Davidson, Geneticist; and S.J. Edmé, Geneticist; scientists representing USSC in the development of CPCL 99-4455 were D.G. Holder, retired Chief Geneticist; and C.J. Hu, Geneticist.

The female parent of CPCL 99-4455 is CL 90-4643 and the male parent is CP 84-1198. CPCL 99-4455 is recommended for all sugarcane growers in Florida. Major attributes of CPCL 99-4455 on muck and sand soils include its resistance to most major diseases in Florida and its high sucrose content, particularly in the early portion of the harvest season. In replicated trials, cane yields of CPCL 99-4455 were more favorable on muck than on sand soils.

Data from 21 harvests of replicated yield trials including CPCL 99-4455 were collected from December 2006 through January 2009. These trials were planted on muck soils at eight locations and harvested through up to three crop cycles (eight plant-cane, eight first-ratoon, and five second-ratoon crop harvests). The mean cane yield (Mg per hectare) of CPCL 99-4455 on muck soils was 2.1% higher and 7.2% lower than the cane yields of CP 72-2086 and CP 89-2143, respectively, the commercial checks for muck soils. The mean commercial recoverable sucrose (kg per Mg of cane) of CPCL 99-4455 was 6.5 and 4.6% higher than the commercial recoverable sucrose values of CP 72-2086 and CP 89-2143, respectively. Also, CPCL 99-4455 had exceptionally high sucrose content early in the harvest season based on samples taken in the plant-cane crop at eight locations the final 2 weeks in October in 2006 when the commercial recoverable sucrose of CPCL 99-4455 was 15.1 and 8.8% higher than the commercial recoverable sucrose values of CP 72-2086 and CP 89-2143, respectively. The mean sucrose yield (Mg per hectare) of CPCL 99-4455 on muck soils was 8.7% higher and 3.0% lower than the sucrose yields of CP 72-2086 and CP 89-2143, respectively. The theoretical economic index of CPCL 99-4455 was 11.3% higher and 0.3% lower than the economic indices of CP 72-2086 and CP 89-2143, respectively, on muck soils.

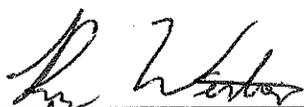
Data were collected from December 2006 through December 2008 from five harvests (two plant-cane, two first-ratoon, and one second-ratoon crop harvests) of CPCL 99-4455 planted in replicated yield trials on sand soils at two locations. The mean cane yield of CPCL 99-4455 was 30.0% lower than the cane yield of CP 78-1628, the commercial check for sand soils. The commercial recoverable sucrose of CPCL 99-4455 was 2.4% greater than that of CP 78-1628, and the sucrose yield of CPCL 99-4455 was 28.3% lower than that of CP 78-1628. CPCL 99-4455 had high sucrose content early in the harvest season based on samples taken at these two sand-soil locations in the plant-cane crop in the final two weeks of October 2006 when the commercial recoverable sucrose content of CPCL 99-4455 was 8.3% higher than that of CP 78-1628. The theoretical economic index for CPCL 99-4455 was 28.4% lower than that of CP 78-1628 on sand soils. Cane yields of CPCL 99-4455 were particularly low, compared with those of CP 78-1628, in the two ratoon crops on sand soils.

The stalk weight of CPCL 99-4455 on muck soils, averaged over the plant-cane, first-ratoon, and second-ratoon crops, was 12.0 and 2.1% lower than the stalk weights of CP 72-2086 and CP 89-2143, respectively, and on sand soils it was 16.7% lower than that of CP 78-1628. Number of mature stalks of CPCL 99-4455 was 17.9% higher and 5.0% lower on muck soils than stalk numbers of CP 72-2086 and CP 89-2143, respectively, and 19.6% lower on sand soils than the corresponding stalk number of CP 78-1628. CPCL 99-4455 has a fiber content of 10.19% compared with 8.97, 10.39, and 9.85% for CP 72-2086, CP 78-1628, and CP 89-2143, respectively.

Seed cane for commercial planting will be distributed by the Florida Sugar Cane League, Inc. in accordance with procedures to be announced to all sugarcane growers in Florida. Inquiries concerning seed cane should be directed to the Florida Sugar Cane League, Inc., P.O. Box 1208, Clewiston, Florida 33440. CPCL 99-4455 will be registered with the National Plant Germplasm

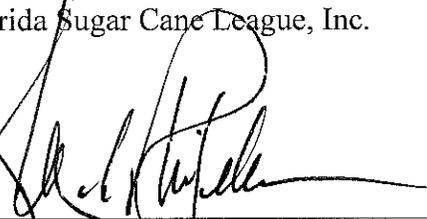
System, and vegetative cuttings of this sugarcane cultivar will be available for the next 5 years after publication of its registration in Journal of Plant Registrations from the USDA-ARS, Sugarcane Field Station, 12990 US Highway 441 N., Canal Point, Florida 33438. This material will be available for research purposes, including development of new cultivars. It is requested that appropriate recognition be made if this germplasm contributes to the development of new breeding lines or cultivars.

Signatures:



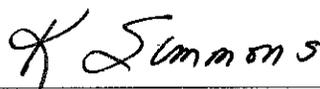
Executive Vice President
Florida Sugar Cane League, Inc.

12/10/09
Date



Director, Florida Agricultural Experiment Station
Institute of Food and Agricultural Sciences
University of Florida.

7/17/09
Date



Deputy Administrator, Crop Production and Protection
Agricultural Research Service, U.S. Department of Agriculture

12/15/09
Date