

# Notice of Release of High Fiber Sugarcane Variety HoCP 91-552

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Agricultural Research Service  
Washington D.C. 20250

And

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And

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**T**he Agricultural Research Service of the United States Department of Agriculture, the Louisiana Agricultural Experiment Station of the LSU Agricultural Center, and the American Sugar Cane League of the U.S.A., Inc., working cooperatively to develop improved sugarcane varieties, have jointly developed and hereby announce the release of a new variety, HoCP 91-552, as a feedstock for an emerging biofuels industry.

HoCP 91-552 is a product of the cross LCP 81-10 x CP 72-356 made at Canal Point (CP), Florida in 1986 and selected at Houma (Ho), Louisiana in 1988. It was evaluated in the commercial breeding program through the first-ratoon crop in outfield yield tests. The variety was ultimately dropped from further testing because of its fiber content (16%), which was considered unacceptable by commercial sugar processing standards.

In mechanically harvested outfield tests using whole stalk harvesters, HoCP 91-552 produced lower cane (30 vs. 35 tons/acre = 86%) and sugar (7,350 vs. 9,430 lbs/acre = 78%) yields than LCP 85-384 in combined plant-cane and first-ratoon crops. Individual stalk weight was very similar (2.2 vs. 2.3 lbs), but HoCP 91-552 had significantly fewer stalks per acre than LCP 85-384 at harvest (27,000 vs. 31,000). A similar comparison could not be made at the infield stage, since LCP 85-384 was not used as a check when infield tests were planted in 1993. HoCP 91-552 was recognized as being exceptionally erect, and better able to remain erect following late-season storms than the vast majority of commercial sugarcane candidates released to date making it extremely adaptable to mechanical harvesting using both chopper (combine) and whole-stalk (soldier) harvesters.

HoCP 91-552 was re-examined as a candidate variety for a biofuels industry in tests conducted from 2004 to 2006 in which plant-cane, first-ratoon, and second-ratoon crops were harvested green using chopper harvesters with their extractor fans turned off. Although in decline as a commercial sugarcane variety, LCP 85-384 remained as the commercial standard for comparison in these tests. The tests were planted on a poorly drained Sharkey clay soil at the USDA-ARS Sugarcane Research Laboratory's Ardoyne Research Farm near Schriever, LA and on a shallow Crowley silt loam soil at the Diamond W Ranch near Welsh, LA. In these tests, HoCP 91-552 produced higher: gross cane (38.9 vs. 30.9 tons/acre = 26%), Brix (6.6 vs. 5.3 tons/acre = 25%), and total solids (12.6 vs. 9.4 tons/acre = 34%) than LCP 85-384 when averaged over all of the harvested plant-cane, first-ratoon, and second-ratoon crops at the two locations (Table 1).

HoCP 91-552 is resistant to sugarcane mosaic virus (strains A, B, and D) and sorghum mosaic virus (strains H, I, and M). In a single replicated inoculated field test, the cultivar was resistant to smut (*Ustilago scitaminea* Sydow) and leaf scald [*Xanthomonas albilineans* (Ashby) Dowson] diseases. Occurrence of these diseases, as well as rust (*Puccinia melanocephala* H. and P. Syd.), were not observed under natural field infection conditions. Similar to essentially all sugarcane varieties released in Louisiana, HoCP 91-552 can sustain significant reductions in cane and sugar yields in ratoon crops from ratoon stunting disease (RSD) [*Leifsonia xyli* subsp. *xyli* (Davis et al.) Evtushenko et al.]. To assure minimal risk from RSD and other systemic diseases, it is strongly advised that seed cane of this variety be free or nearly free of these diseases at planting. Susceptibility of HoCP 91-552 to the sugarcane yellow leaf virus is unknown.

HoCP 91-552 is moderately resistant to the sugarcane borer (*Diatraea saccharalis* F.), but should be scouted to insure proper management. This variety may be a good choice to plant in areas where insecticide use should be minimized. Field observations suggest that HoCP 91-552 is not any more susceptible to herbicides commonly used for the control of problematic weeds than commercial sugarcane varieties.

Seed cane of HoCP 91-552 will not be available for distribution by the American Sugar Cane League, the United States Department of Agriculture, or the Louisiana Agricultural Experiment Station. The variety will be available through private seed cane companies. Seed cane will also be made available through the National Plant Germplasm System at the National Germplasm Repository located on the Subtropical Horticulture Research Station in Coral Gables, Florida.

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**Table 1.** Mean yield comparisons of HoCP 91-552 to LCP 85-384 following mechanical harvesting at two locations using chopper harvesters with their extractor fans turned off<sup>1</sup>.

Crop Year	Variety	Gross			Solids		
		cane (tons/A)	Brix --(% cane)--	Fiber	Brix	Fiber	Total <sup>2</sup>
Plant cane (2004)	LCP85-384	25.2	17.4	12.1	4.4	3.0	7.4
	HoCP 91-552	45.5	17.6	15.5	8.0	7.0	15.0
First stubble (2005)	LCP85-384	36.0	16.4	12.7	5.9	4.6	10.5
	HoCP 91-552	32.5	15.3	13.7	5.0	4.5	9.4
Second stubble (2006)	LCP85-384	31.6	18.0	14.4	5.7	4.5	10.2
	HoCP 91-552	38.9	17.6	16.5	6.8	6.4	13.2
Mean	LCP85-384	30.9	17.2	13.0	5.3	4.0	9.4
	HoCP 91-552	38.9	16.8	15.2	6.6	6.0	12.6

<sup>1</sup>Tests were planted at the USDA Ardoyne Farm in Schriever, LA and the Diamond W Ranch in Welch, LA.

<sup>2</sup>Total solid yield represents the sum of the Brix (soluble solids) and fiber (insoluble solids) yields.