

Registration of 'Ho 95-988' Sugarcane

'Ho 95-988' sugarcane (a complex hybrid of *Saccharum officinarum* L., *S. robustum* Brandes & Jeswiet ex Grassl, *S. spontaneum* L., *S. barberi* Jeswiet, and *S. sinense* Roxb. amend. Jeswiet) (Reg. no. CV-124, PI 636497) was bred and selected at Houma (Ho), LA. It is a progeny of the cross CP 86-941 × US 89-12 made in 1990. Ho 95-988 is a product of cooperative research by USDA-ARS, the Louisiana Agricultural Experiment Station of the Louisiana State University Agricultural Center, and the American Sugar Cane League of the U.S.A., Inc. Ho 95-988 was released in the spring of 2004.

All four grandparents of Ho 95-988 were developed within a continuing basic breeding program that was initiated in 1965 to broaden the genetic base of sugarcane (Dunckelman and Breaux, 1972). Three of the four grandparents are wild-derivative clones, two involving *S. spontaneum*, and one involving *S. robustum*. The fourth grandparent is a BC₂ derivative of the Hawaiian cultivar, H 49-3646. Ho 95-988 is not closely related to any cultivar currently grown in Louisiana.

Ho 95-988 has a high population of medium-sized stalks that turn purple when exposed to sunlight. Compared with most other cultivars, the leaves and stalks of Ho 95-988 remain relatively upright; leaf curvature at the apex is rounded, rather than pointed. In contrast to Louisiana's principal cultivar, LCP 85-384 (Milligan et al., 1994), the leaf sheath pubescence of Ho 95-988 is negligible and white wax coating much less apparent. Auricles are generally absent.

Stalk number of Ho 95-988 is 90% and stalk weight is 120% of LCP 85-384, when averaged across plant-cane, first-ratoon, and second-ratoon crops. Similar to LCP 85-384, Ho 95-988 is a good ratooning cultivar. Yield data from a total of 61 mechanically harvested, replicated yield trials on both light- and heavy-textured soils indicate that Ho 95-988 consistently produces cane and sugar yields that are approximately 7% greater than those of LCP 85-384 in plant-cane, first-ratoon, and second-ratoon crops. Ho 95-988 is a mid-maturing cultivar that produces recoverable sugar (102%) and fiber (105%) levels comparable to those of LCP 85-384. Field observations suggest that stalks of Ho 95-988 are more erect and less brittle at harvest than those of LCP 85-384; leaf sheaths adhere less tightly to the stalks as well. These characteristics should lessen yield losses associated with whole-stalk and combine (chopper/billet) harvesting.

Ho 95-988 is resistant to Sugarcane mild mosaic virus (strains A, B, and D) and *Sorghum mosaic virus* (strains H, I, and M). The cultivar is resistant to rust (caused by *Puccinia melanocephala* H. & P. Syd.) and leaf scald [caused by *Xanthomonas albilineans* (Ashby) Dowson] diseases under natural field infection conditions. It is moderately susceptible to smut (caused by *Ustilago scitaminea* H. & P. Syd.); however, yield losses from this disease are not expected. Similar to most sugarcane cultivars released in Louisiana, Ho 95-988 can sustain significant reductions in cane and sugar yields in ratoon crops from ratoon stunting disease (RSD) (caused by *Clavi-*

bacter xyli subsp. *xyli*). To minimize yield losses from smut and RSD, it is advised that seed cane of this cultivar be free or nearly free of these diseases at planting. Ho 95-988 does not appear to be any more susceptible to the Sugarcane yellow leaf virus than current cultivars. Ho 95-988 is susceptible to the sugarcane borer [*Diatraea saccharalis* (Fabricius)] and should only be grown in areas where insecticides can be applied. Field observations also suggest that Ho 95-988 is not any more susceptible to herbicides commonly used for the control of problematic weeds than LCP 85-384.

The following microsatellite markers were produced from Ho 95-988: three fragments of SMC334BS (150, 154, and 166 bp in size), five fragments of SMC336BS (155, 168, 171, 173, 177 bp), four fragments of MCSA068G08 (179, 182, 185, 202 bp), and five fragments of SMC597CS (147, 155, 157, 164, 170 bp). More detailed descriptions of primers and protocols have been published (Pan et al., 2003).

Plants of Ho 95-988 will be maintained at the USDA-ARS Southern Regional Research Center's Sugarcane Research Unit, located at Houma, LA, for 5 yr. Application for protection through plant or utility patents will not be pursued.

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