

**GENETIC STOCK****CYM 08-903, A sugarcane hybrid with *Erianthus* cytoplasm (IC0594482; INGR13019)**

The commercial sugarcane varieties under cultivation are derivatives of man-made hybrids involving *Saccharum officinarum* as the basic species and other *Saccharum* species such as *S. spontaneum*, *S. barberi* and *S. sinense*. Cytoplasm diversity in sugarcane varieties across the world is very narrow because almost all of them have *S. officinarum* clones Black Cheribon, Striped Mauritius or B.M. Hitam as their ancestral female parent (Tew, 1987). *Erianthus arundinaceus* is a wild related species in the tertiary gene pool of sugarcane. A hybrid between *E. arundinaceus* and another wild species *S. spontaneum* CYM 04-420 (IC No. 556971; INGR08039), which was confirmed to have *Erianthus* cytoplasm by molecular analysis was induced to flower by photoperiodic treatment. It was used as female parent in crosses with sugarcane commercial variety Co 775 and the hybrid progeny were of regular flowering and fertile types. One among such hybrids CYM 07-971 was further crossed with sugarcane variety CoC 671 and from its progeny the present hybrid CYM 08-903 was selected as a promising clone with near commercial yield and quality attributes and with *Erianthus* cytoplasm. The hybrid CYM 08-903 was developed

at Sugarcane Breeding Institute, Coimbatore by hybridization and clonal selection.

The distinguishing features of CYM 08-903 include slightly zig-zag internodes, brownish purple colour of the exposed cane, low wax on the rind, internodes with no bud groove and green colour duelp. The plant has tall cane, erect stool habit, open semi-droopy leaf carriage, tight leaf sheath clasping and without leaf sheath hairs. The juice sucrose of CYM 08-903 is 17.02 % and the cane yield was on par with the standard variety Co 86032.

Molecular studies using polymorphism in chloroplast DNA segments *psbC-trnS* and *trnL* intron the confirmed cytoplasm of CYM 08-903 to be of *Erianthus* type, different from that of commercial sugarcane varieties, *S. officinarum* and *S. spontaneum* clones. This hybrid can be clonally propagated by cane cuttings and the cane growth is similar to commercial sugarcane varieties. The progeny from crosses involving CYM 08-903 using commercial sugarcane varieties as the male parent were with *Erianthus* cytoplasm, improved yield and quality and with red rot resistance. CYM 08-903 can be used as a good parent in breeding of sugarcane varieties with *Erianthus* cytoplasm.

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