EXPLOITABLE FOREGROUND

New Sweet Sorghum Cultivar – BRS 511

Explanation and Purpose

BRS 511 is a variety developed by Embrapa Maize and Sorghum to meet the growing demand for complementary feedstock as an alternative to sugarcane for ethanol production. This cultivar has high yield potential of stems (average 60-80 t ha^{-1}) and high levels of fermentable sugars in the juice (total sugar 18-20 g L^{-1} at the maturity peak), 2.0 t ha-1 grain yield, and resistance to lodging and to major pathogens. Average maturity cycle for the production of ethanol is about 115-125 days after sowing, and with a period of industrial utilization (PUI) more than 30 days.

Sugar profile of juice* extracted from stems of the sweet sorghum variety BRS 511

Trait	g L^{-1}
Sucrose	154.8
Glucose	33.3
Fructose	5.9
Total reduced sugars	194.0
Brix (ºB)	21.9

* Values subject to variations according to climatic conditions, crop management and harvest period.

Exploitation Strategy

Sweet sorghum can be grown in all areas currently recommended for sugarcane production in Brazil. Sorghum can provide quality feedstock during the period between the months of February and April, before the beginning of sugarcane harvest for ethanol production, extending the total harvest period of distilleries for two additional months.

IPR Measures

The results of this project from Embrapa are freely available and the breeding materials developed and released herein are available for licensing by the private sector for seed production and commercialization. SWEETFUEL partners have had and continue to have access to both experimental and released cultivars with appropriate Material Transfer Agreements.

Further Research

This and other varieties (R-lines) will continue to be evaluated in an evaluation network as male parents of sweet sorghum hybrids as new sweet sorghum female lines (A and B lines) become available. Adaptation to other regions can be assessed through multi location and multi seasonal trials.

Impact of Exploitation

Research is currently underway to produce sweet sorghum during the period of sugarcane renovation (20% total area recommended annually) during the months of November to May to provide an alternative feedstock to anticipate sugarcane harvest and distillery operation by up to 60 or more days before the beginning of sugarcane harvest in April and May, increasing ethanol output and reducing ethanol production and operational costs.

SWEETFUEL

Sweet Sorghum: an alternative energy crop

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SWEETFUEL is co-funded by the European Commission in the 7th Framework Programme (Project No. FP7-227422)