REGISTRATION OF CROP CULTIVARS

in a polycross involving many cultivars adapted to the windward Hawaiian ecological region. H65-7052 contains germplasm from S. officinarum L., S. spontaneum L., S. sinense Roxb. amend. Jeswiet, and possibly S. robustum Brandes and Jeswiet ex Grassl. It has a chromosome number of \(2n = 116\).

H65-7052 is a 24-month crop cultivar with high tonnage and average sucrose content. It is a medium tillering, fast growing, nonflowering cultivar with an average diameter stalk. It germinates satisfactorily and ratoons at least as well as the standard Hawaiian commercial cultivars, 'H59-3775' (2) and 'H62-4671' (3), and is tolerant to \(s\)-triazine herbicides.

H65-7052 is highly resistant to both races of culmicolous smut (caused by *Ustilago scitaminea* Syd.) present in Hawaii, eye spot (caused by *Bipolaris sacchari* (Butler) Shoemaker), and leaf scald (caused by *Xanthomonas albilineans* (Ashby) Dowson), moderately resistant to red rot (caused by *Physalospora tucumanensis* Speg.) and pineapple disease (caused by *Cercospora paradoxa* (de Seynes) Moreau), and moderately susceptible to brown spot (caused by *Cercospora longipes* Butler).

Replicated yield trials indicate that H65-7052 has a higher yield potential than H50-7209 and H59-3775 in metric tons sugar/ha. It is more susceptible to drought and saline conditions than its maternal parent, H50-7209, and is best adapted to leeward irrigated areas. It is especially well suited for drip-irrigated fields, which presently comprise about half of the total irrigated sugarcane acreage in Hawaii. H65-7052 is expected to be most rapidly increased in areas of adaptation where smut disease is most widespread. Vegetative cuttings will be maintained by the Experiment Station, Hawaiian Sugar Planters' Association, Aiea, Hawaii.

REFERENCES


REGISTRATION OF H68-1158 SUGARCANE¹

Don J. Heinz, Thomas L. Tew,
Hans K. Meyer, and Kuo Kao Wu²

Clone 'H68-1158' sugarcane (Saccharum spp. hybrid) was selected by the staff of the Experiment Station, Hawaiian Sugar Planters' Association, from a progeny derived from random pollination of 'H53-3989' in a polycross involving many cultivars adapted to windward unirrigated environments. H68-1158 contains germplasm from *S. officinarum* L., *S. sinense* Roxb. amend. Jeswiet, and *S. spontaneum* L. It has a chromosome number of \(2n = 114\).

H68-1158 is a high tonnage, medium-high fiber, low-sucrose cultivar capable of continued growth for periods extending up to 36 months. It germinates rapidly and produces an excellent ratoon after harvest. H68-1158 has an average growth rate, tillering capacity, and stalk diameter. It is very tolerant to \(s\)-triazine herbicides and has shown poor response to the chemical ripener glyphosate when glyphosate is applied before 24 months crop age. Yield data indicate that the optimum crop age at harvest for H68-1158 will be greater than 24 months, permitting increased stalk maturity, natural ripening, and response to chemical ripeners. Its leaf sheaths are covered with a dense hair-like silica deposit.

H68-1158 is highly resistant to both races of culmicolous smut (caused by *Ustilago scitaminea* Syd.) present in Hawaii, eye spot (caused by *Bipolaris sacchari* (Butler) Shoemaker), and leaf scald (caused by *Xanthomonas albilineans* (Ashby) Dowson).

H68-1158 is adapted to the Hilo-Puna region of the Big Island of Hawaii where average annual rainfall exceeds 400 cm and where average annual rainfall exceeds 400 cm. H68-1158 outyielded H54-775⁴ and H59-3775⁴ in total cane tonnage and has been about equal to those cultivars in sugarcane in trials over 4 years on the Island of Hawaii. Total cane has an economic significance considering that over 40% of the land on the Island of Hawaii is generated from sugarcane.

Vegetative cuttings of H68-1158 will be maintained by the Experiment Station, Hawaiian Sugar Planters' Association, Aiea, Hawaii.

REGISTRATION OF FLORIDA 301 SUGARCANE

(Reg. No. 643)


'Florida 301' (Triticum aestivum L. em. Thell.), CI 14497, is a hard, winter wheat developed by the Univ. of Florida at the Agriculture Research and Education Center at Quincy in cooperation with AR-SEA-USDA and released in 1980.

Florida 301 was selected from a cross made in 1973 between 'McNair 1813', CI 12771, and a Florida line 709RB3. The 709RB3 parent was a cross between 'Olesen' and the Purdue line 64212A3-2S (Reg. No. 14497) is a short-statured, spring wheat developed as a combination of crosses involving 'Norin 10', 'Maris', and 'Holley' parents. The 709RB3 parent was an F₁ of the cross between 'Arthur' and WS20, a large seeded selection from Portugal. Florida 301 was tested as FL71100A-29-3-109 and has the pedigree Holley/3/Olesen/Arthur/WS20. Head selections from the second generation and Florida 301 was identified as a single selection from the second generation. A seed increase was made at Tetonia Research Station in the summer of 1979 and approximately 1,500 bushels of certified seed has been grown by seed growers during the fall of 1980.

When grown under north Florida conditions, Florida 301 resembles the Holley parent in maturity, plant height, and general appearance. It produces higher yields, particularly in fields that are more resistant to drought than Holley. In tests conducted at the Soft Wheat Quality Laboratory, Florida 301 was found to be similar to Holley, 'McNair 1813', 'Oasis', and 'Doublecrop' cvs. It has a harder kernel texture and higher alkaline water retention capacity than Holley.

Florida 301 is very early maturing and normally produces grain with high test weight. It is resistant to the prevalent races of *Puccinia recondita* Rob. ex. Desm.) and powdery mildew (caused by *Erysiphe graminis* DC. ex. Merat f. sp. *tritici*) common in the Florida area, but is susceptible to Septoria glume blotch (caused by *Puccinia graminis* Tode f. sp. *graminis* (L.) Tode) and Hessian fly (*Mayetiola destructor* Say). This cultivar has a high potential than H54-775 and H59-3775 in metric tons sugar/ha (-5%) in yield and has been about equal to those cultivars in sugarcane in trials over 4 years on the Island of Hawaii. Total cane has an economic significance considering that over 40% of the land on the Island of Hawaii is generated from sugarcane.

Vegetative cuttings of H68-1158 will be maintained by the Experiment Station, Hawaiian Sugar Planters' Association, Aiea, Hawaii.

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