REGISTRATION OF AR2001 AND AR2002 SUDANGRASS PARENTAL LINES

AR2001 (Reg. no. PLO-3, PI 542405) and AR2002 (Reg. no. PI 542406) are coarse sudangrass [Sorghum bicolor (L.) Moench] parental sib-lines developed at the Arkansas Agricultural Experiment Station, University of Arkansas, Fayetteville. These lines restore pollen production to hybrids with A1 cytoplasm. Both lines, released in 1976 (1), are in the S2 generation. Both AR2001 and AR2002 were selected, using the pedigree method, from 'Stoneville Synthetic' sudangrass, which was developed for its resistance to leaf blight [Exserohilum turcicum (Pass.) K.J. Leonard & E.G. Suggs] (syn. Helminthosporium turcicum Pass.) and bacterial streak [Xanthomonas holcicola (Elliot) Starr & Burk.]. Three leaf blight and bacterial streak resistant sudangrass lines were crossed with a sorgo introduction, designated MN1054, which was resistant to rust (Puccinia purpurea Cooke) and zonate leaf spot (Gloeosporia sorgii D. Bain & Edgerton ex Dayton). Selections comprising Stoneville Synthetic were for resistance to leaf blight and bacterial streak (H.W. Johnson, Delta Experiment Station, Stoneville, MS, personal communication).

Both AR2001 and AR2002 have small round seed (approximately the size and shape of 'Shallu' seed) that thresh free of the glumes. The description and major traits of AR2001 and AR2002 are given in Table 1.

Seed of these lines (100 seed) will be distributed by the Agronomy Department, University of Arkansas, Fayetteville, AR 72701 (fax (501) 575-7465).

REGISTRATION OF THREE POPCORN (MAIZE) PARENTAL LINES HP62-02, HP72-11, AND HP68-07

POPCORN (Zea mays L.) parental inbred lines HP62-02 (Reg. no. PI 542776), HP72-11 (Reg. no. PI 542777), and HP68-07 (Reg. no. PI 542778) were developed by the Indiana Agricultural Experiment Station popcorn breeding and testing program at Purdue University. They are component inbreds of yellow popcorn hybrids P405, P608, and P203, respectively.

HP62-02 was derived by pedigree selection from a single cross between lines developed from the cultivars Supergold (Sgl 533) and Early Yellow (4619-31). Top crosses were made in the S2 and S3 generations on a single cross of inbreds from the cultivars Supergold and Amber Pearl and selection was based primarily on popping expansion volume. Plant and ear characteristics are given in Table 1. Kernel size of HP62-02 is large enough to make a satisfactory seed parent; pollen production is fair, and sensitive to plant stress. In nursery observations HP62-02 showed some resistance to anthracnose [incited by Colletotrichum graminicola (Ces.) G.W. Wils.] but was susceptible to northern corn leaf blight [caused by Exserohilum turcicum (Pass.) K.G. Leonard & E.G. Suggs] and southern corn leaf blight [incited by Bipolaris maydis (Nisikado & Miyake) Shoemaker]. HP62-02 has performed best in crosses with lines from the cultivars South American and Amber Pearl, contributing mainly to high popping expansion volume; it has only fair stalk quality and yield potential in hybrid combinations.

HP72-11 was derived from a cross between dent corn inbred line C103 and a popcorn double cross followed by two crosses to a popcorn single cross. The popcorn germplasm involved was primarily from the cultivars South American (IDS69) and Early Yellow (4619-31). Selection during the backcrosses to popcorn was primarily for desirable plant and ear type. Top crosses were made in the S2, S3, and S4 generations on a single cross of inbreds from the cultivar Supergold, and selection was based primarily on popping expansion volume. HP72-11 was a component line of breeding germplasm HPX-2 released in 1985 (1). Plant and ear characteristics are given in Table 1. HP72-11 has small kernels borne on thin ears, making it a poor seed parent; it dependably produces large amounts of pollen and makes an excellent pollen parent. In nursery observations, HP72-11 showed good resistance to anthracnose and to northern and southern corn leaf blights. HP72-11 has performed best in crosses with lines from the cultivar Supergold, contributing excellent stalk quality and good popping expansion volume and yield potential.

HP68-07 was derived from a cross between dent corn inbred line H60 and a popcorn double cross followed by a cross to a popcorn single cross. The popcorn germplasm