REGISTRATION OF PARENTAL LINES

REGISTRATION OF FOUR PARENTAL LINES OF MAIZE

PA392, PA462P, PA463P, and PA468 are inbreds of yellow dent maize (Zea mays L.) of early-to-late AES 400 maturity developed at the Pennsylvania Agricultural Experiment Station. These lines have had extensive evaluation and were released in 1987 because of their varied genetic background and potential in hybrid combinations. Breeder seed is maintained by the Pennsylvania Agricultural Experiment Station and is available in 50 to 100 kernel lots from M.W. Johnson, Agronomy Department, Tyson Building, University Park, PA 16802.

PA392 (Reg. no. PL-103) (PI 517968) was selected from PA Virus resistant early synthetic (1). It was developed by selling and selection in an ear-to-row manner for five generations and was evaluated in topcross and numerous single cross combinations from 1976 to 1985 for yield, standability, maturity, and disease reaction. It is a better seed parent. It combines well with lines such as A656, PA402P, ND309, and VA26. It has better than average resistance to northern corn blight (caused by Exserohilum turcicum (Pass.) Leonard & Suggs). It produces a light yellow, medium-long kernel on a white cob of 16 rows.

PA462P (Reg. no. PL-104) (PI 517969) originated from CH157[CH157 × (I11A × PPP)]. It was developed through selling and selection in an ear-to-row manner for five generations and was evaluated in topcross and numerous single cross combinations from 1976 to 1985 for yield, standability, maturity, and disease reaction. It is a better seed parent. It combines well with lines such as A656, PA402P, ND309, and VA26. It has better than average resistance to northern corn blight (caused by Exserohilum turcicum (Pass.) Leonard & Suggs). It produces a light yellow, medium-long kernel on a white cob of 16 rows.

PA463P (Reg. no. PL-105) (PI 517970) is partially related to PA462P, having originated from [(CH157 × I11A) (CH157 × PPP)] [K64 × MO4155]. It was developed through selling and selection in the ear-to-row manner for five generations and was evaluated in topcross and numerous single cross combinations from 1976 to 1985 for yield, standability, maturity, and disease reaction. It is a better seed parent. It combines well with lines such as A656, PA402P, ND309, and VA26. It has better than average resistance to northern corn blight (caused by Exserohilum turcicum (Pass.) Leonard & Suggs). It produces a light yellow, medium-long kernel on a white cob of 16 rows.

PA468 (Reg. no. PL-106) (PI 517971) was selected from a yellow-kerneled ear from an Indian corn population. It was developed through selling and selection in the ear-to-row manner for five generations and was evaluated in topcross and numerous single-cross combinations from 1975 to 1985, for yield, standability, maturity, and disease reaction. This inbred silks at the same time as PA463P and VA26. It combines well with lines such as A656, VA26, A672, and SDP309. It has very good stalk strength, which is contributed to crossovers. It is similar in size to PA463P (approximately 140 cm) and has a tendency for multiple ears. It can be used as either a male or female parent in seed production. In our testing, it has shown fair resistance to northern corn leaf blight. It produces 14 rows of medium yellow, round kernels on a red cob.

M. W. JOHNSON* (2)

References and Notes

1. This virus-resistant synthetic was developed by the late Dr. C.C. Wernham, Plant Pathology, The Pennsylvania State Univ. It was composed of numerous virus-resistant selections that also had the best overall disease ratings for smut, leaf blights, and stalk and ear rots.


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REGISTRATION OF THREE PARENTAL LINES OF MAIZE WITH IMPROVED RESISTANCE TO GRAY LEAF SPOT

PA877, PA879, and PA880 are inbreds of yellow dent maize (Zea mays L.) of mid- to late-AES800 maturity developed at the Pennsylvania Agricultural Experiment Station. These lines were evaluated extensively for hybrid performance and disease resistance, particularly to gray leaf spot (caused by Cercospora zeae-maydis Tehon and Daniels), but also exhibit resistance to northern corn leaf blight (caused by Exserohilum turcicum (Pass.) Leonard & Suggs) and northern leaf spot (caused by Helminthosporium carbonum Ullstrup race 3). They were released in 1987 because of their potential value to the seed industry and for use in breeding programs. Breeders seed is maintained by The Pennsylvania Agricultural Experiment Station and is available in small lots (50–100 kernels) from M.W. Johnson, Agronomy Department, Tyson Building, University Park, PA 16802.

PA877 (Reg. no. PL-107) (PI 517972) was selected from PAWF9 Synthetic (1). It was developed by selecting and selfing in the ear-to-row system for five generations and was evaluated in topcross and numerous single cross combinations from 1976 to 1985 for yield, standability, maturity, and disease reaction. It is similar in maturity and plant height to H93 (approximately 180 cm). It combines well with both Lancaster Surecrop and Iowa Stiff Stalk derivatives. In our tests, it has shown good resistance to gray leaf spot (GLS), comparable to that of PA875, released in 1985, but nonregistered. In tests conducted in 1981 and 1982, it was one of the most GLS resistant lines. It is better than average in resistance to northern leaf blight and northern leaf spot. It develops a medium green spreading leaf and medium size branched tassel. It produces 12 rows of medium yellow, round kernels on a red cob.

PA879 (Reg. no. PL-108) (PI 517973) was selected from PAWF9 Syn I (derived from WF9 Syn I (1) from one cycle.