REGISTRATION OF MAIZE PARENTAL LINES
(Reg. Nos. PL 1 to 13)

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The following yellow dent maize (Zea mays L.) inbreds lines were developed in the research program conducted cooperatively by the Iowa Agriculture and Home Economics Experiment Station and the Crops Research Division and Entomology Research Division, Agricultural Research Service, U.S. Department of Agriculture. The lines were evaluated extensively in hybrid combinations and were released because of their potential value in seed production programs and further use in breeding programs. Breeders’ seed of the lines, produced by self-pollination in ear-to-row progenies, is maintained by the Iowa Experiment Station.

B14A (Reg. No. PL 1) — Selected from (Cuzco × Early Dent) Selection × B14 and released in 1962. Inbred B14A is nearly identical to B14 except that B14A has the gene Rpd, obtained from (Cuzco × Early Dent) Selection, which gives it high resistance to all known biotypes of corn leaf rust, Puccinia sorghi Schw. in the United States. Inbreds B14 was selected from Iowa Stiff Stalk Synthetic and released in 1953. It has been used extensively in seed production and breeding programs because it contributes outstanding resistance to root and stalk lodging, fast ear drying, and above-average yield. It has good tolerance to the western corn rootworm, Diabrotica virgifera Le Conte. Maturity classification is early AES800.

B37 (Reg. No. PL 2) — Selected from Iowa Stiff Stalk Synthetic and released in 1958. It has a vigorous plant with good seed yield but poor pollen production. The line contributes high yield to single-cross hybrids, particularly when grown at relatively high plant densities in environments with a high yield potential. It contributes satisfactory root and stalk strength and gives some resistance to northern corn leaf blight, Helminthosporium turcicum. Maturity classification is AES800.

B42 (Reg. No. PL 3) — Selected from Iowa Corn Borer Synthetic No. 1 and released in 1960. The inbred plant gives a low seed yield and sparse pollen production. It has an intermediate level of resistance to the first brood of the European corn borer, Ostrinia nubilalis (Hübner). It contributes high yield to hybrids but does not contribute satisfactory root and stalk strength. Maturity classification is AES800.

B45 (Reg. No. PL 4) — Selected from W22 × B10 and released in 1962. This line has a vigorous plant that gives a high seed yield. It will display tassel blast and pollen sterility under conditions of low soil moisture, low humidity, and high temperature. As a parent line, it contributes high yield to hybrids, but the root and stalk strength of its hybrids will not be satisfactory unless the other parent lines have above-average resistance. Maturity classification is AES800.

B46 (Reg. No. PL 5) — Selected from W22 released in 1962. This is a sister selection to B45 but less vigorous plant and does not contribute as high yield to hybrids. It has more resistance to root and stalk lodging. Maturity classification is AES800.

B54 (Reg. No. PL 6) — Selected from Iowa Corn Borer Synthetic No. 1 and released in 1963. This inbred plant of medium height, sparse pollen production. It has intermediate resistance to first brood of O. nubilalis. Inbred B54 transmits to hybrid progeny above-average yield, fast ear drying, satisfactory stalk strength, and resistance to root and stalk lodging. Maturity classification is AES700.

B55 (Reg. No. PL 7) — Selected from ‘Oh45’ released in 1963. The plant is large with a high pollen production. It has intermediate resistance to O. nubilalis. Hybrids with B55 usually have satisfactory root and stalk strength, but silks early. Maturity classification is AES700.

B56 (Reg. No. PL 8) — Selected from Alph released in 1964. This is a vigorous inbred line, and as tall nor as late in maturity as 38-11. It has good pollen production and a high seed yield on a long, slender plant. It transmits to hybrid progeny average yield, fast ear drying, and satisfactory root and stalk strength. Maturity classification is AES700.

B57 (Reg. No. PL 9) — Selected from the variety ‘Midland’ and released in 1963. This line has outstanding for pollen production and seed yield, but has an excellent plant type with short stature. It carries genes, that cause partial pollen restoration for Texas-type, male-sterile cytoplasm. It has some resistance to H. turcicum. P. sorghi, and some tolerance to D. virgifera. Inbred B57 yields hybrid progeny above-average yield, slow ear drying, satisfactory root and stalk strength. Maturity classification is AES700.

B59 (Reg. No. PL 10) — Selected from N32 released in 1966. The plant has a high ear node tendency to produce two ears, and this latter ear is expressed in hybrids when in a good fertility environment at moderate plant densities. The silks emerge to 3 days earlier than B14. It has an intermediate resistance to the first brood of O. nubilalis. In hybrid combinations, B59 yields as well as B14, has lower grain moisture, less root and stalk strength. In some hybrids, it is as tall nor as late in maturity as 38-11. It has good pollen production. It has intermediate to high plant densities, mainly because of incidence of barren stalks. Maturity classification is AES700.

B65 (Reg. No. PL 11) — Selected from (Ky1 (41.2504B × WF9) × 132504B) and released in 1966. This inbred is resistant to first brood of O. nubilalis and resistance to second brood. It has more resistance to H. turcicum. In hybrid combinations, it is better for yield and is equal to WF9 for maturity and root stalk lodging. Maturity classification is AES700.

B66 (Reg. No. PL 12) — Selected from B35 released in 1968. The plant has an erect leaf type, which is retained throughout the growing season. It has intermediate resistance to first brood of O. nubilalis. B66 is equal to Oh43 for yield, grain moisture, and sometimes has less root and stalk lodging. Maturity classification is AES700.

B68 (Reg. No. PL 13) — Selected from 41.2504B released in 1968. This is a vigorous inbred line, and in plant and ear type, but silks 4 to 5 days later. It has resistance to first brood of O. nubilalis, intermediate resistance to second brood, and intermediate resistance to H. turcicum. Maturity classification is AES700.