REGISTRATION OF SUNFLOWER PARENTAL LINES HA 821 AND HA 822

HA 821 (Reg. no. PL-41) and HA 822 (Reg. no. PL-42) are inbred sunflower (Helianthus annuus L.) parental lines with normal cytoplasm released by the USDA-ARS and North Dakota State Agricultural Experimental Station on 4 Mar. 1983. These lines were converted to cytoplasmic male-sterility for use in testing as female parents in hybrid sunflower breeding programs. Conversion to cytoplasmic male-sterility was by backcrossing.

HA 821 is a composite of seed of four selected plants which resulted from self-pollinating a single plant in each of three generations. The original plant was selected from line HA 300 (2). HA 300 was derived from ‘Peredovik 301’ (PI 372172). The selection was made to purify the cytoplasmic male-sterility and to eliminate minor fertility restoration genes. Further selections improved oil percentage, yield, and midget (Contarinia schulzi Gagne) resistance. HA 821 is midseason in maturity, moderately resistant to Verticillium wilt (caused by Verticillium dahliae Kleb.), moderately susceptible to rust (caused by Puccinia helianthi Schw.), and susceptible to races 1, 2, and 3 of downy mildew [caused by Plasmopara halstedii (Farl.) Berl., and de T.]. Oil content, flowering and maturity dates, height, and yield of HA 821 are similar to HA 300. HA 821 is 15-cm taller, and yields 280 kg ha	extsuperscript{-1} higher than HA 89. Midge tolerance rated 1.3 points better than HA 89.

HA 822 is a composite of seed of four selected plants which resulted from self-pollinating a single plant in each of three generations. The original plant was selected from line CM 400. CM 400 was released by Agriculture Canada Station, Morden, Manitoba, Canada in 1978, and was selected from S37-388RR/2*Peredovik (1). HA 822 is midseason in maturity, moderately resistant to Verticillium wilt, and susceptible to races 1, 2, and 3 of downy mildew. Oil content is higher, flowering date 3 days earlier, maturity date 6 days earlier, height 10-cm taller, and yield 520 kg ha	extsuperscript{-1} higher than HA 300. Uniformity is improved over CM 400. In crosses with the fertility restorer line RHA 274, F	extsubscript{1} hybrids are higher yielding and oil content 4.8% higher than HA 822. Limited quantities of seed of each parental line, and HA 822 and its corresponding cytoplasmic male-sterile line, can be obtained from the Seedstock and Plant Breeding Department, North Dakota State University, ND 58105.

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References and Notes


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dosperm than BTx623. All of these inbreds have normal endosperm except ATx630, which is waxy (wwux). Coleop-
tiles of all the inbreds are green (rsrs). These females possess excellent male sterility under all environmental conditions tested. Outcross seed setting capability is good. Combining ability of these inbreds with RTx430, RTx433 and RTx434 is superior to that obtained with previously released females. All of the inbreds are tropically adapted except ATx631, and ATx632 are among the exceptions are semi-compact to closed. Mature spikelets are single seeded. A high level of green leaf retention at maturity is possessed by all the inbreds as well as high levels of foliar disease resistance. All of the inbreds possess excellent resistance to the major diseases except ATx631, and ATx632 are long, cylindrical, and semi-compact to slightly open at maturity, whereas the exceptions are semi-compact to closed. Mature spikelets are single seeded. A high level of green leaf retention at maturity is possessed by all the inbreds as well as high levels of foliar disease resistance. All of the inbreds possess excellent resistance to the major diseases except ATx631, which is susceptible to head smut [caused by Sporisorium reiliana (Kuehn) Lang. and Fullerton].

These materials appear to be adapted across an array of environments and appear to produce hybrids with acceptable maturity, excellent grain color and quality, satisfactory height and standability, tropical adaptation (except A2Tx632), and improved disease resistance (ATx631, and A2Tx632 are among the exceptions are semi-compact to closed. Mature spikelets are single seeded. A high level of green leaf retention at maturity is possessed by all the inbreds as well as high levels of foliar disease resistance. All of the inbreds possess excellent resistance to the major diseases except ATx631, which is susceptible to head smut [caused by Sporisorium reiliana (Kuehn) Lang. and Fullerton].

These materials should be very useful throughout the U.S. Sorghum Belt and in the tropics, where tropically adapted, photoperiod-insensitive hybrids are needed. Breeder seed will be maintained at Texas A&M University, Department of Soil and Crop Sciences, College Station, TX 77843.

Reference and Notes