THE UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Washington, D.C.

and

NORTH DAKOTA AGRICULTURAL EXPERIMENT STATION
North Dakota State University
Fargo, ND

NOTICE OF RELEASE OF HA-R9, OILSEED SUNFLOWER

HA-R9 is an improved derivative of Rf ANN-1742 (PI 596746). Rf ANN-1742 is an oilseed male fertility restorer line derived from a BC1F2 population of the cross of cytoplasmic male sterile HA 89 and wild Helianthus annuus L. accession PI 613748 collected in Hinton, OK, in 1982, and released by USDA and the North Dakota Agricultural Experiment Station in 1997. Initial screening indicated that Rf ANN-1742 had resistance to the most predominant (race 336) and the most virulent (race 777) of North American races of rust (caused by Puccinia helianthi Schw.), but segregated for both rust and male fertility restoration. One selected resistant plant (09-519-1, BC1F3) was self-pollinated in the greenhouse. Plants from the 09-519-1 seed were retested for rust resistance and the resistant seedlings were grown in the greenhouse and self-pollinated. The progeny testing of seven resistant BC1F4 families indicated that one family, 10-149-26, was homozygous for both rust resistance and fertility restoration. A selected plant (10-274-16) from 10-149-26 was self-pollinated. The harvested seeds (BC1F5) of the plant 10-274-16 were grown in four rows of 20 plants sown at Fargo, ND, and further evaluated for male fertility restoration in June 2011. The finished germplasm is a BC1F5-derived F6 homozygous for both rust resistance and male fertility restoration. Inheritance studies indicated that the rust resistance was controlled by a single, dominant gene, R11, and molecular mapping indicated that the gene R11 is closely linked to the male fertility restoration gene, Rf5, present in HA-R9. Plant height of HA-R9 was 115 cm compared to 110 cm for HA 89. HA-R9 flowered 77 days after planting compared to 74 days for HA 89 in the Fargo, ND, field nursery during the summer of 2011.

Signatures:

Director, North Dakota Agricultural Experiment Station
North Dakota State University

1/14/13
Date

Deputy Administrator, Crop Production and Protection
Agricultural Research Service, U.S. Department of Agriculture

1/30/13
Date