

STORAGE INFORMATION FORM (SIF)

USDA-ARS
NATIONAL CENTER FOR GENETIC RESOURCES PRESERVATION (NCGRP)☐ Submitted for Registration in
Journal of Plant Registration☒ Submitted for inclusion in NPGS☐ Cultivar
☒ Germplasm☐ Parental Line
☐ Mapping Population☐ Genetic StockName of Donor or Contact Person Lili Qi Phone No. (701) 239-1351Institution or Company USDA-ARS Email lili.qi@ars.usda.govAddress 1605 Albrecht Blvd N, Fargo, ND 58102-2765

The policy of the National Plant Germplasm System (NPGS) is that all non-restricted material deposited in the NPGS will be freely distributed to scientists for research purposes. For all material registered in *Journal of Plant Registration*, the donor is expected to maintain and distribute seed for a minimum of five years following registration after which time unrestricted material will be entered into the NPGS for public distribution. For PVP, Utility Patent or other restricted use crop material being registered in *Journal of Plant Registration*, the material is deposited in NCGRP but the owner is responsible for maintenance and distribution throughout the duration of the restriction unless different arrangements are made with the NPGS.

Submitted material will be released into the NPGS (check one box):

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- ☐ ***After some other designated period.*** For material covered by PVP or a patent, or for non-PVP or non-patented material where the owner desires restricted access (not to exceed 20 years), the owner agrees to maintain and distribute the material throughout the duration of the restriction unless different arrangements are made with the NPGS. If this box is checked, the owner must identify a date below (or indicate that the restriction is tied to expiry of PVP or patent) when material is to become available for unrestricted public distribution by the NPGS.

The owner's institutional legal signature on this SIF authorizes the NPGS to distribute from the CSR sample after the expiry date of restriction noted below. Distribution will be done under the prevailing NPGS policy.

Date of release to the NPGS for unrestricted public distribution (not to exceed 20 years) If left blank, the date of release will be 5 years after date of publication: Immediately

Authorized Institutional Legal Signature (required) _____ Date _____

Print Name and Official Title of Authorized Signatory _____

Revised 03/20/2012

PI 685018

NOMENCLATURE:Genus Helianthus Species annuus Sub-species _____Common name SunflowerVariety/cultivar name and/or designation number HA-BSR5

PI Number (if previously assigned) _____

Other Identifiers _____

(For Mapping Population, provide a list of identifiers for mapping lines and parents)

SEED REQUIREMENTS: (UNTREATED SEED REQUIRED)

- ☐ Cross/Open Pollinated (Cultivar, Germplasm): 7500 seeds
- ☒ Self Pollinated (Cultivar, Parental Line, Germplasm, Mapping Population Parents, Genetic Stocks*); 5000 seeds
- ☐ Mapping Population Lines: 500 seeds
- ☐ *Difficult Genetic Stocks (those where seeds are difficult to grow, maintain or analyze): 50-1000 seeds

Percent Germination determined by Donor 96 Date of test 5/13/2016Date harvested Oct.13, 2015 Approx. percent self fertilization under normal field conditions: 80Seed provided to NPGS active collection? YES ☐ NO ☒ Date provided _____

NPGS Active Site Location _____ Amount of seed supplied _____

Seed provided to NCGRP YES ☒ NO ☐ Date provided 11/13/2017**RESTRICTIONS:**PVP Applied for or Granted? YES ☐ NO ☒ PVP Number _____Utility Patent Applied for, Granted, or incorporated? YES ☐ NO ☒ UP Number _____Plant Patent Applied for or Granted? YES ☐ NO ☒ PP Number _____

Restricted use materials: describe condition(s) for access and distribution (Material Transfer Agreement, Research Agreement, License & Sales Agreement, etc.) and additional contact information if different than above:

GROWTH HABIT:

Annual: Spring ☒ Winter ☐ Facultative ☐
Biennial ☐ Perennial ☐

FORM RECEIVED:

Seed ☒ Bud ☐ Pollen ☐ Tissue Culture ☐

DESCRIPTIVE INFORMATION: In order for each entry to be properly identified, donors are asked to prepare a narrative and pedigree of each entry. Key features in the narrative might include agronomically important traits such as maturity, plant height (metric terms or dwarf, semi-dwarf, etc.), seed characteristics (size, oil content, milling quality, type, etc.), nutritive value, tolerance to diseases, insects, nematodes, cold, lodging, and others. Identify transgenes and the traits that they govern. Give the scientific names of pest organisms. Avoid comparisons with other cultivars or lines unless these are part of the parentage, or unless the comparisons are important for rating disease and insect resistance levels. Accessions deposited in the NPGS will be documented in the Germplasm Resources Information Network (GRIN) database of the National Plant Germplasm System, except for mapping populations.

PEDIGREE: (The pedigree should not exceed 500 characters.)

HA-BSR5 was selected from the cross HA 89/3/HA 458//NMSHA 89/PI 494573. HA 89 (PI 599773) is an inbred maintainer line. The nuclear male-sterile line NMSHA 89 (PI 559477) possesses a single recessive nuclear male sterility gene *ms9*. HA 458 (PI 655009) is a high oleic and downy mildew resistant germplasm. PI 494573 is an accession of wild annual *Helianthus argophyllus* collected in Texas in 1985 and identified as resistant to *Sclerotinia* basal stalk rot.

NARRATIVE: (The narrative can be no more than 2000 characters in length.)

HA-BSR5 is a BC2F5 derived BC2F6 oilseed sunflower maintainer line developed for *Sclerotinia* basal stalk rot (BSR) resistance. The selected line HA-BSR5 was tested for resistance to BSR in inoculated field nurseries across seven environments from 2012 to 2015 in North Dakota and Minnesota, and consistently showed high levels of BSR resistance across all environments. Average disease incidence of basal stalk rot for HA-BSR5 was 1.9%, compared to an average of 36.1% for Cargill 270 (susceptible hybrid), 31.0% for HA 89 (recurrent parent), 19.5% for HA 441 (resistant inbred), and 11.6% for Croplan 305 (resistant hybrid). A whole genome scan was performed using a genotyping-by-sequencing approach to detect the presence of *H. argophyllus* segments in HA-BSR5. Polymorphic single nucleotide polymorphism markers revealed the presence of introgressed chromosome segments in HA-BSR5 located on linkage groups (LGs) 3 and 10 of the sunflower genome. HA-BSR5 reached 50% bloom 75 d, and grew to 151 cm in height in a field nursery at Glyndon, MN during the summer of 2015.

Ship Storage Information Form (hard copy with seed and electronic copy via email) to:

National Center for Genetic Resources Preservation

Attn: Storage Samples

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