



UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL RESEARCH SERVICE  
WASHINGTON, D.C.

**NOTICE OF RELEASE OF OILSEED SUNFLOWER GERMPLASM RHA 477**

The United States Department of Agriculture, Agricultural Research Service, announces the release of the restorer oilseed germplasm RHA 477, which has been developed to provide a source of early maturity with tolerance to imidazolinone herbicides and resistance to downy mildew races 714 and 734, and are available for use by industry and public researchers to create parental lines or germplasms.

**Germplasm Pedigree Descriptions:**

RHA 477 is a F7-derived F9 restorer oilseed sunflower line selected from the cross RHA 468/R-7009. RHA 468 (PI 667184) is an imidazolinone herbicide tolerant, downy mildew resistant, oilseed restorer line released by the USDA and the North Dakota Agricultural Experiment Station (NDAES) in 2006. R-7009 is the donor line of early maturity and was obtained through a germplasm exchange with Dr. Mikhail Christov of Bulgaria.

**Yield and Agronomic Evaluations:** Yield and oil content of RHA 477 was determined by evaluation of the hybrid CM 595A/RHA 477, at Indian Head, Swift Current, Melfort, and Redvers, SK, in 2014 and Swift Current, Indian Head, and Redvers, SK, in 2015. Average yield was 1926 kg ha<sup>-1</sup> (1720 lbs A-1), which is statistically less than the average yield of 2131 kg ha<sup>-1</sup> (1903 lbs A-1) for AC 60 (CM 595A/RHA 859) but statistically similar to the yield of 2100 kg ha<sup>-1</sup> (1875 lbs A-1) for Pioneer 63A21 (CV = 18.5 percent). Pioneer 63A21 is a leading commercial hybrid for the region, and both AC 60 and 63A21 lack herbicide tolerance and downy mildew resistance. Average seed oil content of CM 595A/RHA 477 was 402 g kg<sup>-1</sup>, identical to 402 g kg<sup>-1</sup> for Pioneer 63A21 and significantly greater than 387 g kg<sup>-1</sup> for AC 60 (CV = 3.4 percent). CM 595A/RHA 477 matured 110 days after planting, similar to Pioneer 63A21 and 5 days later than AC 60 (CV = 1.3 percent).

RHA 477 contains genes for recessive branching and restoration of PET1 male sterile cytoplasm.

**Availability:** Small quantities of RHA 477 seed will be available from the North Dakota Foundation Seed Stocks Project, NDSU Dept. 7670, P.O. Box 6050, Fargo, ND 58108-6050. Seed of this release will be deposited in the National Plant Germplasm System, where it will be available for research purposes. U.S. Plant Variety Protection will not be requested for RHA 477.

It is requested that appropriate recognition be made if this germplasm contributes to the development of a new germplasm, breeding line, or cultivar. This germplasm was developed with support from the Saskatchewan Ministry of Agriculture.

ARS GIVES NO WARRANTIES OR GUARANTEES, EXPRESSED OR IMPLIED, FOR THE MATERIAL, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Signature:

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Deputy Administrator, Crop Production and Protection  
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*11/18/16*

Date