Registration of Parental Lines

REGISTRATION OF CM 400 SUNFLOWER PARENTAL LINE1
(Reg. No. PL 9)

Walter Dedio2

CM 400 (Reg. No. PL 9) is an inbred line of sunflower (Helianthus annuus L.) with normal cytoplasm that has been converted to cytoplasmic male sterility (cms) for use as a female parent of hybrids. It was selected from the cross S37-388RR/Peredovik*. CM 400 is a composite of F₂ seed which traces to one F₀ plant. It shows good tolerance to rust (Puccinia helianthi Schw.) under field conditions. However, in controlled tests about 20% of the F₁ plants were the result of self-pollination. The sterility is maintained and broadened for genetic diversity and sterility by a breeding system called male sterile recurrent selection (MSFRS). The high proportion of selfing makes it difficult to maintain CMS in the field.

The hybrid CMS 400 × RHA 273 outyielded the inbred parent varieties Peredovik and Sputnik by an average of 10% and maturity varied in advantage of the hybrids over these named cultivars was even greater. In single crosses with other inbred lines, the yield advantage of the hybrids over these named cultivars was even greater.

Because CM 400 flowers at the same time as the fertility restorer lines RHA 273 and 275, it is preferable to plant the restorer lines a few days earlier than the female. However, satisfactory seed set still occurs if planted simultaneously. In limited tests in Manitoba, the female plant lines were sibbed and given the designation A and B. The original MSFRS bread wheat composites may be obtained from the above address.

**Note:**
