The alpha acids fraction contains largely humulone (65 to 70%) and only 18 to 20% cohumulone. These levels are similar to those found in female hops with known European aroma characteristics. The desirable low cohumulone content has also been readily transmitted in test crosses.

The essential oils of 64035M contain large amounts of humulene. The ratio of humulene/caryophyllene has ranged from 3.5 to 3.9 over a 4-year period, similar to that of female hops with known European aroma characteristics.

The high level of downy mildew resistance, absence of viruses, good vigor, and European aroma characteristics are valuable attributes of 64035M.

The USDA in cooperation with the Oregon Agric. Exp. Stn. released USDA 64035M for public use in March 1984. Planting stock of USDA 64035M will be maintained by the Oregon Agric. Exp. Stn.

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References and Notes


Registration of Parental Lines

REGISTRATION OF SUNFLOWER PARENTAL LINES CM 447, CM 588, CM 590, CM 591, AND CM 592

The oilseed sunflower (Helianthus annuus L.) female lines, CM 447 (Reg. no. PL-36) and CM 588 (Reg. no. PL-37), and restorer lines CM 590, (Reg. no. PL-38), CM 591 (Reg. no. PL-39) and CM 592 (Reg. no. PL-40) were developed by Agriculture Canada Research Station, Morden, Manitoba and released in March 1982. These lines are valuable for production of early maturing, high yielding hybrids.

CM 447 is a very early, short-statured line with fair oil content. The achenes are predominantly black, round and thin hulled. The line was derived from a gene pool composed by interpollinating 50 inbred lines for three generations. The 50 inbred lines were obtained from various USSR cultivars and selected for high oil, rust resistance, and desirable agronomic characters. CM 447 is a composite of three S₄ plants. It is resistant to wilt caused by Verticillium dahliae Kleb. Hybrids of CM 447 combined with early flowering restorers mature about 8 days earlier than hybrid 894, have about 1.4 percentage points higher oil content and yield about 11% less. Hybrids of CM 447 outyield hybrid 894 in short season areas or when seeded late. CM 447 has been converted to the cms form by the backcross procedure.

CM 588 is a S₂ selection from CM 338 released earlier (1). CM 338 originated from the cross S-37-388 RR × Smena*. It has been selected mainly for better self compatibility. Its achene and morphological characteristics and essential oils are similar to those found in female hops with known European aroma characteristics. The ratio of humulene/caryophyllene has ranged from 3.5 to 3.9 over a 4-year period, similar to that of female hops with known European aroma characteristics.

The essential oils of 64035M contain large amounts of humulene. The ratio of humulene/caryophyllene has ranged from 3.5 to 3.9 over a 4-year period, similar to that of female hops with known European aroma characteristics.

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It is single-headed. The achene is small, less than 50% as large as CM 590 and are predominantly black in color. It is resistant to downy mildew race 2 caused by Plasmodiophora brassicae Berle & de Toni, and to rust caused by Puccinia helianthi Schw.

CM 592 was developed by backcrossing CM 497 onto RHA 274 and traces to a single BC₁ plant. It is derived from the same gene pool as CM 588. The plants of CM 592 are single-headed, with yellow ray flowers petals and with predominantly black achenes. The achene is smaller in size than CM 590. CM 592 has about 3 percentage points higher oil content than CM 590 and is resistant to downy mildew. CM 592 is resistant to rust caused by Puccinia helianthi Schw.

The morphological characteristics and essential oils of the parental lines are listed in Table 1. Limited amounts of seed of these lines are available from the Plant Gene Resources of Canada, Agriculture Canada, Research Station, Morden, Manitoba.