

Naming the Gene Conferring Resistance to Cool Temperatures in Watermelon

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Many cultivars and landraces of watermelon (*Citrullus lanatus* L.) are susceptible to seedling injury when grown at cool temperatures (<20°C). Symptoms are chlorotic cotyledons and a foliar mosaic consisting of scattered, irregular, whitish flecks and patches, caused by a partial chlorophyll deficiency (2). The intensity of the symptoms depends on cultivar, with some more affected than others. Warmer temperatures are conducive to a full recovery of affected plants, but their initial retarded growth usually delays fruit maturity. However, there are resistant landraces of *C. lanatus* able to continue normal growth even when exposed to cool temperatures.

The widespread use of cool-resistant watermelon cultivars can secure significant economic advantages, since they can be planted several weeks earlier than the cool-susceptible cultivars. Although cool-resistant plants will not survive persistent frosts, they usually recover from damages caused by early frosts that are light.

Resistant and susceptible lines were used to determine the inheritance of cool temperature resistance (3). Populations were developed from

crosses and reciprocal backcrosses between the cool-susceptible cultivar New Hampshire Midget and the cool-resistant line PP261-1 (a single plant selection of PI 482261 from Zimbabwe). It was determined that cool sensitivity is related to the single recessive gene *slv* (seedling leaf variegation), and that resistance is conferred by a dominant gene. I propose the symbol *Ctr* (cool temperature resistance) for that gene. Plants of PP261-1 also have a single recessive gene (*zym*) conferring resistance to the Florida strain of zucchini yellow mosaic virus (1).

Literature Cited

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3. Provvidenti, R. 1994. Inheritance of a partial chlorophyll deficiency in watermelon activated by low temperature at the seedling stage. *HortScience* 29: 1062-1063.