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# Tetraploid 'Planters Jumbo' Melon Lines C883-m6-4x and 67-m6-100-4x

Perry E. Nugent<sup>1</sup>

U.S. Vegetable Laboratory, Agricultural Research Service, U.S. Department of Agriculture, 2875 Savannah Highway, Charleston, SC 29414

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Lines C883-m6-4x and 67-m6-100-4X are spontaneous tetraploid mutants from the melon cultivar Planters Jumbo (*Cucumis melo* L.). 'Planters Jumbo' is the result of a series of crosses and "selected generations involving several cultivars and plant introductions. These tetraploid selections were approved for release in 1991 by the Agricultural Research Service, U.S. Dept. of Agriculture, in response to seed industry requests. These 4x lines can be used as a tool in tetraploid melon research and for 3x melon production feasibility studies.

## Origin

During Summer 1969, a tetraploid plant (4x) (n = x = 12) was found in a field planting of 'Planters Jumbo' melon (Fig. 1) and given the accession number C883-m6-4x. Later, in the fall, another tetraploid plant was recovered from a greenhouse planting of the 2x line 67-1, the parent of 'Planters Jumbo' melon,

and this mutant was designated 67-m6-100-4x. Chromosome counts of 'Planters Jumbo' and its 4x offspring confirmed the ploidy levels of these mutant lines (Nugent and Ray, 1992). C883-m6-4x and 67-m6-100-4X provide a means for developing seedless triploid melons that carry the desirable characteristics of the original 2x cultivar. Such 3x seedless melons have been produced from 4x and 2x crosses (Adelberg, 1993).

## Description

The lines described are similar and have many parental ('Planters Jumbo') characteristics, such as thick flesh and fleshy placentas. The 4x types differ from 'Planters Jumbo' in that they have larger cells. Leaves, stems, and flowers of 4x types are noticeably larger than their 2x counterparts. Although each 4x derivative differs slightly in fruit size, the following characters describe both 2x and 4x melon types. Fruit of 4x types are rounder and smaller than those of 'Planters Jumbo'. Depending on the environment and culture, fruit of 4x lines have thicker, firmer, higher-quality flesh and fewer (one-fourth to one-half as many) seeds than 2x types (Figs. 2 and 3). Fruit of the virescent 4x C879-J2 (H10, Figs. 2 and 3) have large stem and blossom scars, which are typical of all 4x fruit types. The seeds of 2x 'Planters Jumbo' are slightly longer and narrower than 4x seeds.

Under similar growing conditions, 4x plants differ from their 2x parents. Tetraploid plants

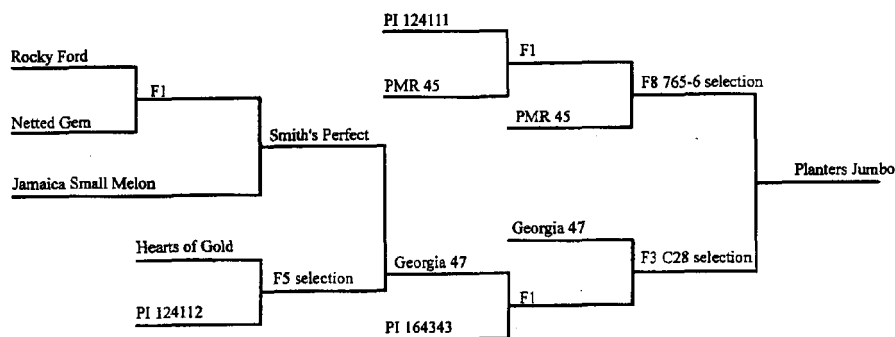


Fig. 1. Pedigree of 'Planters Jumbo' melon.

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<sup>1</sup>Research Horticulturist.

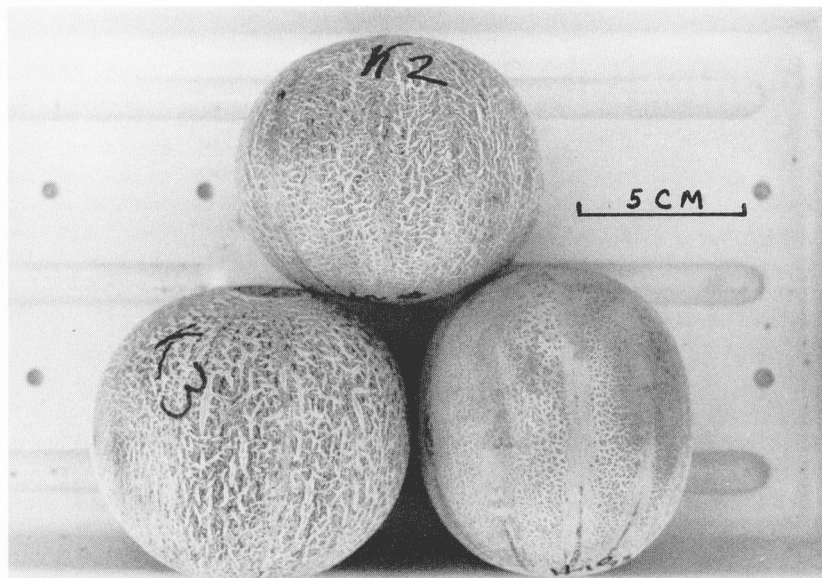


Fig. 2. Side view of C883-m6-4x (K2), 1.4 kg; 67-m6-100-4x (K3), 1.3 kg; and C879-J2-4x (H10), 1.1 kg, melons.



Fig. 3. Top view of C883-m6-4x (K2), 1.4 kg; 67-m6-100-4x (K3), 1.3 kg; and C879-J2-4x (H10), 1.1 kg, melons.

have more rounded cotyledons, shorter internodes, thicker leaves, and more hairs. Fruit from tetraploid plants are smaller (one-third to one-half the size) than those of 2x types, with stem and blossom scars three times larger than their 2x counterparts. Also, flowers and stomates of 4x plants are one-third larger and rounder than those of 2x types, and pollen grains appear square instead of triangular (Nugent and Ray, 1992).

#### Availability

Small seed packets of these accessions are available on a pro-rata basis to breeders and other scientists upon request. Seed recipients are asked to give appropriate recognition of the germplasm source if it is used in developing a new germplasm, parental line, or cultivar.

#### Literature Cited

- Adelberg, J. 1993. Tetraploid melon from tissue culture and their triploid hybrids. PhD diss., Clemson Univ., Clemson, S.C.  
Nugent, P.E. and D.T. Ray. 1992. Spontaneous tetraploid melons. *HortScience* 27:47-50.