

'NuMex Sweet' Paprika Chile

Paul W. Bosland¹, Jaime Iglesias², and Max M. Gonzalez²

Department of Agronomy and Horticulture, New Mexico State University, Las Cruces, NM 88003

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The New Mexico Agricultural Experiment Station announces the release of 'NuMex Sweet', a paprika-type chile (*Capsicum annuum* L.) that has all the attributes to compete with any paprika line currently available to southern New Mexico. The fruit of this cultivar have low pungency levels, high extractable pigment levels, round shoulders, and a smooth surface. In the United States, paprika is defined as red-chile powder with undetectable pungency. Consequently, in New Mexico and California, chiles with low pungency that are suitable for dehydration commonly are

referred to as paprika chiles (Bosland, 1992). Low yield is a limiting factor for paprika production in New Mexico.

Origin

Chile is listed as a self-pollinating crop, but, in New Mexico, high rates of out-crossing occur (Tanksley, 1984). This situation has generated variability in most of the New Mexican-type chile cultivars grown in New Mexico (Bosland et al., 1988). Because of the inherent variability and a tolerance for in-breeding, pure-line breeding procedures may be successful in developing new cultivars (Bosland et al., 1991). 'NuMex Sweet' originated as a single-plant selection from a field planted to an open-pollinated population of 'New Mexico 6-4'. A pedigree selection scheme was carried out in an insect-proof greenhouse for three generations. During each generation, selection was made for several horticultural traits important to the New Mexican paprika industry (Bosland, 1992). A single plant at the S₃ selection—New Mexico breeding line 240—was increased in the greenhouse

and tested during 4 years of field-plot trials. In the field, 'NuMex Sweet' was evaluated for >25 standard horticultural traits.

Description

'NuMex Sweet' has excellent potential for paprika production in the semi-arid southwestern United States (Table 1) and has many of the characteristics identified by paprika processors as desirable in paprika chile (New Mexico Chile Commission, personal communication). These characteristics include high yield, high extractable color, low moisture content at harvest, and low pungency (Fig. 1). 'NuMex Sweet' is a mildly pungent, round-

Table 1. A 4-year average (1988–91) comparison of yield and fruit quality characteristics among 'NuMex Sweet' and three other paprika chile cultivars at Las Cruces, N.M.

Cultivar	Yield ^a (kg·ha ⁻¹)	ASTA ^b color	Wall thickness (mm)
NuMex Sweet	11.0 a ^c	157 a	3.2 c
B-18	6.93 b	159 a	NA ^d
NuMex Conquistador	6.57 bc	148 b	4.2 a
NuMex R Naky	6.05 c	140 b	3.8 b

^aYield is based on dry weight from a single harvest.

^bBy American Spice Trade Association method 20.1. Paprika powder was ground with seeds.

^cMeans separated by Duncan's multiple range test, $P \leq 0.05$.

^dNot available.

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¹Associate Professor.

²Research Assistant.

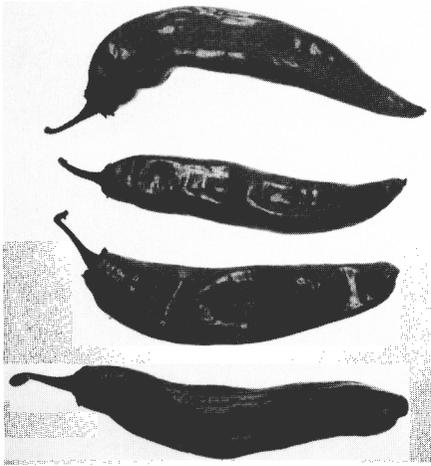


Fig. 1. 'NuMex Sweet' paprika chiles.

shouldered, smooth-fruited, high-colored New Mexican-type chile (Bosland, 1992).

'NuMex Sweet' plants have a strong, single main stem and are uniformly branched, a habit that provides foliage cover for protection from solar injury and support for excellent fruit set. Plant height (61 cm) and plant width (76 cm) are similar to those of 'NuMex Conquistador' and 'NuMex R Naky'. 'NuMex Sweet' fruit walls are thinner than those of 'NuMex Con-

quistador' or 'NuMex R Naky', a characteristic that permits greater "dry down" in the field (Table 1).

Capsaicinoids, the seven related compounds causing the "heat" sensation when ingested, were quantified each year in field-grown natural red fruit using high-performance liquid chromatography (Woodbury, 1980). Capsaicinoid analysis indicated that 'NuMex Sweet' is a very mild chile at 302 ± 56 scoville heat units, an acceptable heat level for paprika, and was similar in that respect to other paprika cultivars evaluated.

Extractable color was assayed on 20 randomly selected mature fruit according to the methods of the American Spice Trade Association (ASTA, 1985). ASTA color is one of the most important characteristics of chiles to be used for paprika. ASTA color for 'NuMex Sweet' was similar to that of 'B-18' (Table 1). Evaluation by a nontrained taste panel revealed that 'NuMex Sweet' has no off-flavors or bitterness.

The most remarkable characteristic of 'NuMex Sweet' is the outstanding yield of a single harvest of red fruit. The dry-weight yield of 'NuMex Sweet' averaged 11.0 t ha^{-1} . This yield is 82% and 59% higher than that of 'NuMex R Naky' or 'B-18', respectively, two standard New Mexico paprika cultivars (Table 1). 'NuMex Sweet' is recommended for pa-

prika chile production in southern New Mexico.

Availability

Seed increase is on a four-generation basis (breeders, foundation, registered, and certified), with seed production following the guidelines of the New Mexico Crop Improvement Association. Commercial distribution of 'NuMex Sweet' is through the New Mexico Crop Improvement Association, New Mexico State Univ., Box 3CI, Las Cruces, NM 88003.

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