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HORTSCIENCE 23(2):421-422. 1988.

'NuMex Sundial' and 'NuMex Suntop' Onion

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Additional index words. *Allium cepa*, vegetable breeding, bolting resistance

'NuMex Sundial' and 'NuMex Suntop' are bolting-resistant, intermediate-day onion (*Allium cepa*, L.) cultivars developed for fall planting in areas where seeded onions are overwintered. The cultivars were released in Sept. 1986 by the New Mexico Agricultural Experiment Station.

Origin

'NuMex Sundial' and 'NuMex Suntop' were derived by recurrent selection from 'Ben Shemen', an intermediate-day cultivar commonly spring-planted in the southern United States. A selection of 100 non-bolting bulbs was made from a planting with >90% bolting. Bulbs were selfed, leaving one umbel of each to intercross. Tests on selfed progeny indicated one bulb selection (7933) to be superior in bolting resistance and bulb shape. 'NuMex Sundial' and 'NuMex Suntop' were derived by two cycles of selection from the open-pollinated (intercross) progeny from 7933 (Fig. 1).

The 'Ben Shemen' parent was developed near Ben Shemen, Israel by Y. Weiss as a selection from a Yellow Sweet Spanish line obtained from Riverside, Calif. (H. Rabinowitch, personal communication). 'Ben Shemen' was reported to be earlier than the parent line and to have improved shipping and handling qualities. Maturity of 'Ben Shemen' is significantly earlier than for most Sweet Spanish cultivars, and nearly the same as for 'Early Harvest'. It is firm, has excellent handling qualities, and is susceptible to

pink root disease, caused by *Pyrenochaeta terrestris* (Hansen) Gorenz, Walker and Larson. 'Ben Shemen' is a preferred cultivar in southern New Mexico because of its handling qualities, but pink root susceptibility, combined with early maturity, results in marginal yields from spring seeding.

Description

'NuMex Sundial' and 'NuMex Suntop' resemble 'Yellow Sweet Spanish' in most characteristics. Tops are large and nonglaucous. Bulbs are globe to high globe (Figs. 2 and 3) and have a smooth, tan scale. They are firmer than most Sweet Spanish cultivars, and mature 3 to 4 weeks earlier than the Utah strain of 'Yellow Sweet Spanish'.

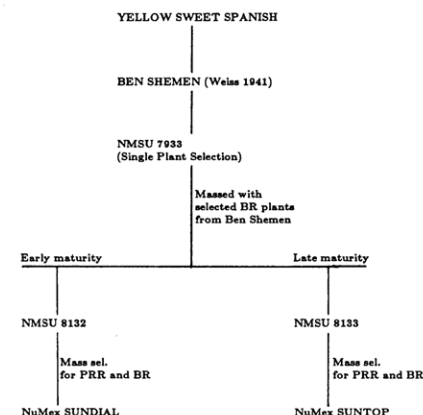


Fig. 1. Pedigree for 'NuMex Sundial' and 'NuMex Suntop'.

Bolting resistance is significantly greater than 'Ben Shemen' (Table 1), and is adequate for planting as early as 15 Oct. at Las Cruces, N.M. Fall planting contrasted to spring planting permits extensive top growth before bolting begins and contributes to a significantly higher yield potential. The greater plant development in cool weather (late winter and spring) also contributes to improved pink root tolerance and increased yields on pink root-infested soils. 'NuMex Sundial' and 'NuMex Suntop' are suggested for trial planting in



Fig. 2. 'NuMex Sundial'.

Received for publication 12 Jan. 1987. Paper no. 1302 of journal article series, New Mexico State Agricultural Experiment Station. The cost of publishing this paper was defrayed in part by the payment of page charges. Under postal regulations, this paper therefore must be hereby marked advertisement solely to indicate this fact.

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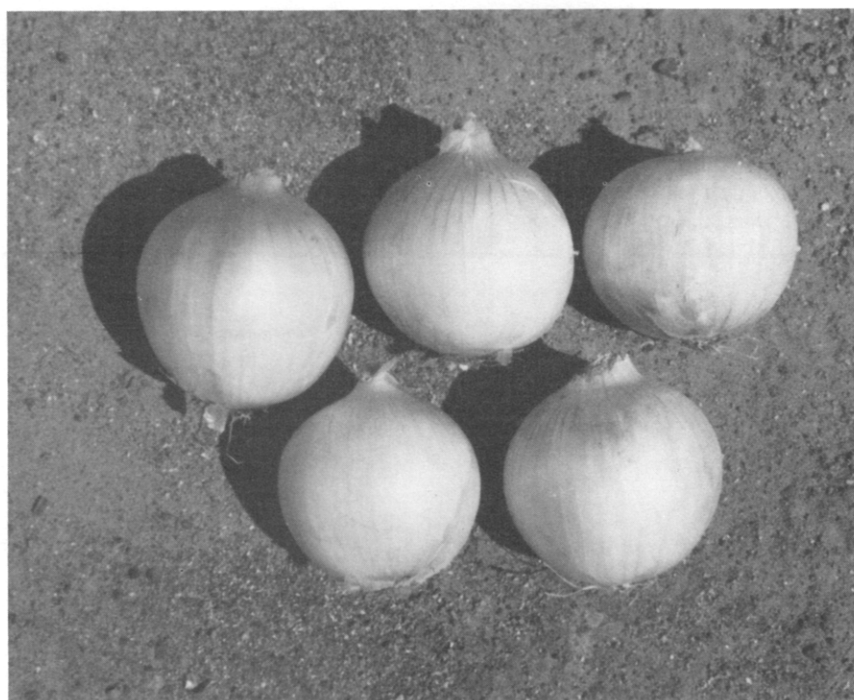


Fig. 3. 'NuMex Suntop'.

Table 1. Comparison of 'NuMex Sundial', 'NuMex Suntop', and 'Ben Shemen' onion cultivars for bolting resistance, Las Cruces, N.M.

Cultivar	Percent bolting			
	Planting date 14 Oct. 1983	Planting date 28 Sept. 1984	Planting date 12 Oct. 1984	Planting date 28 Sept. 1985
NuMex Sundial	10 c ²	3 b	0 b	0 b
NuMex Suntop	31 b	1 b	1 b	0 b
Ben Shemen	59 a	22 a	5 a	21 a

²Mean separation in columns by Duncan's multiple range test, $P = 5\%$.

Table 2. Comparison of 'NuMex Sundial', 'NuMex Suntop', and 'Ben Shemen' onion cultivars for yield and bulb characteristics, planted 16 Oct. 1985 and harvested 15 July 1986, Las Cruces, N.M.

Cultivar	Plants/ plot	Doubles (%)	Marketable (%)	Marketable yield (t·ha ⁻¹)	Average bulb wt (g)
NuMex Sundial	125	12 b ²	83 a	52.3 b	232
NuMex Suntop	180	7 b	86 a	65.4 a	195
Ben Shemen	124	28 a	66 b	36.5 c	202
					NS

²Mean separation in columns by Duncan's multiple range test, $P = 5\%$.

areas where short-day cultivars are grown from seed. Suggested seeding dates are the latter part of the short-day planting season, about the same as for 'New Mexico Yellow Grano'. Maturity is 3 to 4 weeks later than for 'New Mexico Yellow Grano'.

Comparison of 'NuMex Sundial' and 'NuMex Suntop'

Both cultivars have outstanding yield potential when fall-seeded (Table 2), and both have excellent handling qualities. When seeded on 15 Oct. at Las Cruces N.M. 'NuMex Sundial' matured 1 to 10 July and 'NuMex Suntop' about 5 days later (5 to 15 July). The tops of 'NuMex Suntop' are slightly larger, and leaves are brighter green than 'NuMex Sundial'. Scale color of 'NuMex Sundial' is slightly darker than 'NuMex Suntop'. 'NuMex Sundial' has a higher level of bolting resistance than 'NuMex Suntop' (Table 1).

Availability

Applications for plant cultivar protection on 'NuMex Sundial' and 'NuMex Suntop' are pending. Small amounts of breeder's seed are available from me. Foundation seed may be obtained from the New Mexico Crop Improvement Assn., Campus Box 3CI, New Mexico State Univ., Las Cruces, NM 88003.