

'NuMex Sunlite' Onion

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'NuMex Sunlite' is a bolting-resistant, pink root, [*Pyrenochaeta terrestris*, (Hansen) Gorenz, Walker and Larson] resistant, yellow grano-type onion (*Allium cepa* L.) developed for early fall planting. The release of 'NuMex BR1' as a bolting-resistant, yellow grano-type in 1981 had a significant impact on the New Mexico onion industry. Bolting resistance permits early planting and increases yield potential, and the greater plant development in cool season, resulting from early planting, helps control pink root losses, which are most severe in warm weather. More than one-half the New Mexico short-day crop in 1986 was 'NuMex BR1'. 'NuMex Sunlite' resembles 'NuMex BR1' in bolting resistance, plant characteristics, and yield potential. 'NuMex Sunlite' has a higher level of pink root resistance than 'NuMex BR1' (Table 1), and is suggested for early fall planting on fields severely infested with *P. terrestris*.

Origin

'NuMex Sunlite', like 'NuMex BR1', was developed by selection from 'Texas Early Grano 502 PRR' (Fig. 1) (1-3). The first selection was among half-sibs from bulbs selected for bolting resistance. Progeny from selected half-sibs were recombined (intercrossed). Bolting-resistant bulbs from the recombination were selfed, and progeny were screened in a field disease nursery for uniformly high levels of pink root resistance. Bulbs from resistant progeny were intercrossed to produce 'NuMex Sunlite'.

Description

Plant characteristics and maturity date are similar to 'Texas Grano 502 PRR'. Bulbs are medium deep, top-shaped, with rounded shoulders and refined neck. 'NuMex Sunlite' is distinguished by uniformly high levels of pink root resistance (Table 1) and bolting resistance similar to 'NuMex BR1'. In controlled experiments on severely infested pink root fields, 'NuMex Sunlite' has been more productive than 'NuMex BR1' (Tables 2 and 3). On noninfested fields, yields of the two are similar (Table 4). In commercial fields with severe pink root infestation, 'NuMex

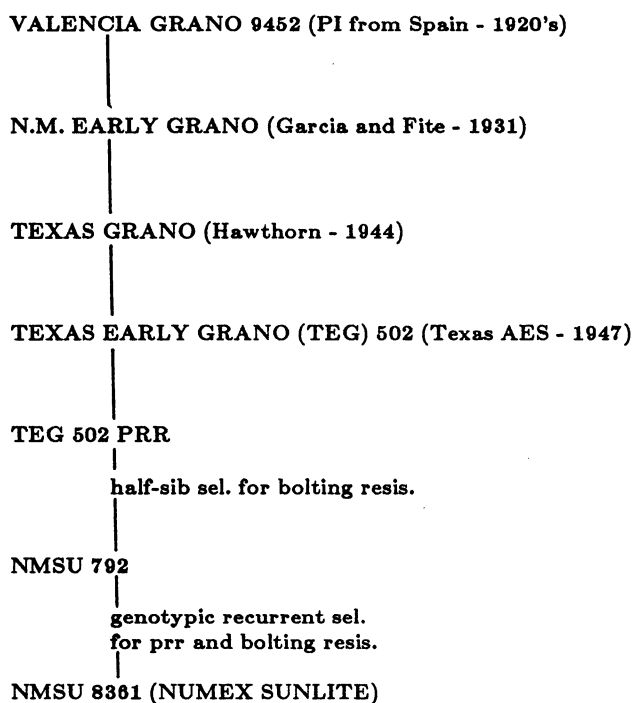


Fig. 1. Pedigree for 'NuMex Sunlite'.



Fig. 2. 'NuMex Sunlite' extensive roots at maturity in a field severely infested with *Pyrenochaeta terrestris*.

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Table 1. Relative levels of pink root resistance for three yellow grano-type onion cultivars in nonreplicated tests.

Cultivar	Percent of plants with > 50% of roots infected			
	Field-transplanted, rated at maturity	Field-seeded, rated at maturity	Transplants in inoculated medium	Direct-seeded in inoculated medium
NuMex Sunlite	10	2	11	36
NuMex BR1	36	46	---	60
Early New Mexico Yellow Grano	58	---	90	87

Table 2. Onion yellow grano-type cultivar comparisons on severely infested pink root soil, seeded 14 Sept. 1983, harvested 30 May 1984, Las Cruces, N.M.

Cultivar	Plants/plot (no.)	Bolting (%)	Marketable yield (t·ha ⁻¹)	Average bulb wt (g)
NuMex Sunlite	96	17 c ^z	38 a ^z	218 a
New Mexico Yellow Grano PRR	79	81 a	4 c	201 ab
NuMex BR1	85	21 c	21 b	173 ab
Early New Mexico Yellow Grano	67	22 c	16 b	159 ab
Texas Grano 1015Y	74	61 b	8 c	152 b

^zMean separation in columns by Duncan's multiple range test, 5% level.

Table 3. Onion yellow grano-type cultivar comparisons on severely infested pink root soil, transplanted 21 Feb., harvested 15 June, 1985, Las Cruces, N.M.

Cultivar	Plants/plot (no.)	Marketable yield (t·ha ⁻¹)	Average bulb wt (g)
NuMex Sunlite	76	41 a ^z	213 a
New Mexico Yellow Grano PRR	89	41 a	184 a
Texas Grano 502 PRR	68	31 ab	181 a
NuMex BR1	78	34 ab	172 a
Texas Grano 1015Y	68	29 b	168 a
Early New Mexico Yellow Grano	65	13 c	80 b

^zMean separation in columns by Duncan's multiple range test, 5% level.

Table 4. Onion yellow grano-type cultivar comparisons on non-pink root soil, seeded 6 Sept. 1985, harvested 3 June 1986, Las Cruces, N.M.

Cultivar	Plants/plot (no.)	Bolting (%)	Marketable yield (t·ha ⁻¹)	Average bulb wt (g)
NuMex BR1	217	38 c ^z	51 a	175 a
NuMex Sunlite	248	30 c	54 a	145 ab
New Mexico Yellow Grano PRR	147	84 a	5 c	135 bc
Early New Mexico Yellow Grano	259	67 b	21 b	129 bc
Texas Grano 502 PRR	224	75 ab	3 c	106 c

^zMean separation in columns by Duncan's multiple range test, 5% level.

Sunlite' maintained extensive root capacity until maturity (Fig. 2) and produced uniformly large bulbs. In contrast, 'NuMex BR1' had many susceptible plants with minimal root capacity, which produced small bulbs. Observations suggest, even on the most severely pink root-infested fields, early 'NuMex Sunlite' plantings will produce optimum yields.

Bulbs of 'NuMex Sunlite', compared to 'NuMex BR1', are firmer and have a more rounded top and more refined neck. These characteristics should improve onion curing and handling qualities.

Availability

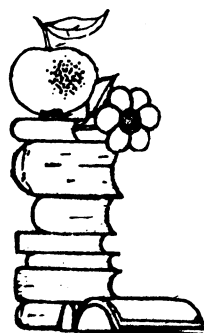
An application for plant cultivar protection is pending. Small amounts of breeder's seed are available from me. Foundation seed may be obtained from the New Mexico Crop Improvement Assn., Campus Box 3CI, New Mexico State Univ., Las Cruces, NM 88003.

Literature Cited

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