

HORTSCIENCE 28(1):66-67. 1993.

'NuMex Starlite' Onion

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

'NuMex Starlite' is a bolting-resistant, yellow grano-type, short-day onion (*Allium cepa* L.) developed for fall planting. This cultivar matures 7 to 10 days later than 'NuMex Sunlite' and 'NuMex BR 1'. Onions are harvested in southern New Mexico between 1 June and 1 Sept.; those harvested until 10 July are fall-seeded, short- and intermediate-day cultivars, or transplants. Although earlier planting increases yields, bolting tendency determines the earliest possible seeding date for fall-seeded cultivars. Bolting-resistant cultivars NuMex BR 1 (Corgan, 1984) and NuMex Sunlite

(Corgan, 1988) provided the New Mexico onion industry with the potential for early seeding and, thus, larger bulbs and higher yields. However, 'NuMex Sunlite' and 'NuMex BR 1' mature \approx 1 June, and harvest and shipments last only until mid-June. Since bolting-resistant cultivars do not mature between 10 and 15 June, that maturity season is filled currently by transplants. 'NuMex Starlite' provides New Mexico's onion industry with a bolting-resistant cultivar that is seeded in the fall and fills the mid-June maturity season.

Origin

'NuMex Starlite' was developed by five recurrent mass selections, beginning in 1978, from 'Texas Grano 502 PRR' (Hawthorne, 1944). Firm bulbs with pink root [*Pyrenochaeta terrestris* (Hans., Gorenz, Walker, and Larson)] resistance (PRR), bolting resistance, late maturity, and uniform shape were selected. PRR

selection was made in *P. terrestris*-infested fields at bulb maturity. Bolting was induced by early fall planting. Bulbs selected for bolting resistance were taken from stands that had 50% to 80% bolting.

Tests were conducted at Las Cruces, N.M. Plot size equaled one standard vegetable bed, either 3.7 (1989) or 3 m (1990) long. The design was a randomized complete block with four replications. Maturity dates were recorded by plot, based on an 80% maturity estimate. Maturity was marked by neck tissue collapse until tops fell. Maturity dates in 1989 were unusually early for all cultivars, while those for 1990 were typical.

Description

Plant characteristics are similar to 'Texas Grano 502 PRR'. Bulbs are medium deep and slightly top-shaped with rounded shoulders and a refined neck (Fig. 1). The level of PRR is high-about the same as for 'NuMex Sunlite' (Corgan, 1988). 'NuMex Starlite' matured 7 to 9 days later than 'NuMex Sunlite' and 'NuMex BR 1' in three of the four tests (Table 1). The bolting tendency of 'NuMex Starlite' was similar to 'NuMex Sunlite' and 'NuMex BR 1', and significantly less than that of 'New Mexico Yellow Grano', 'Texas Grano 502 PRR', or 'Texas Grano 1015 Y' (Table 2). 'NuMex Starlite' yields were similar to those of 'NuMex Sunlite' and 'NuMex BR 1'.

Received for publication 23 Dec. 1991. Accepted for publication 10 Sept. 1992. Paper no. JA1638 of the Journal Article Series, Agr Expt. Sta., New Mexico State Univ. 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.

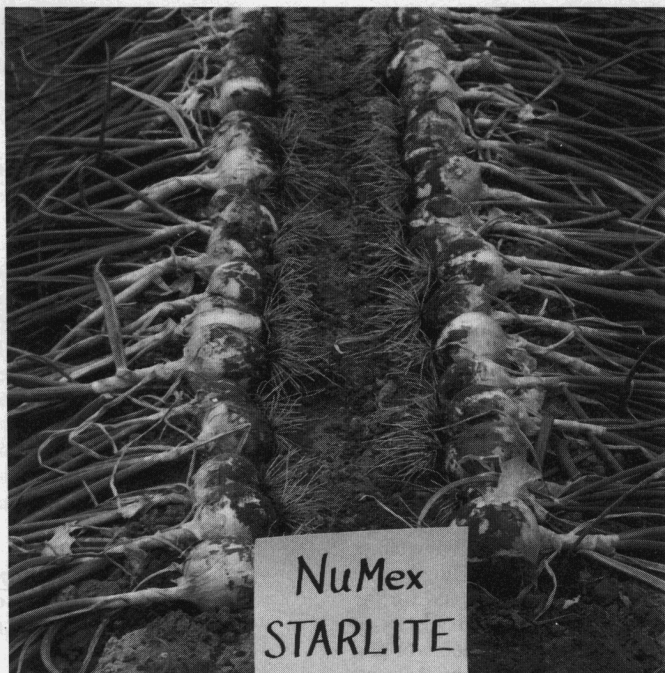


Fig. 1. 'NuMex Starlite' onion.

Table 1. Maturity dates for 'NuMex Starlite' and other onion cultivars grown at Las Cruces, N.M.

Cultivar	Seeding date (Maturity date)			
	16 Sept. 1988 (1989)	6 Sept. 1989 (1990)	27 Sept. 1989 (1990)	10 Oct. 1989 (1990)
NuMex Starlite	16 May a ^z	21 May a	1 June a	12 June a
NuMex BR 1	7 May b	19 May ab	25 May bc	4 June b
NuMex Sunlite	8 May b	18 May b	25 May bc	3 June b
Texas Grano 1015 Y	17 May a	19 May ab	28 May ab	4 June b
Texas Grano 502 PRR	---	18 May b	20 May c	3 June b
New Mexico Yellow Grano	14 May a	---	---	---

^zMean separation in columns at $P < 0.05$ by Duncan's multiple range test.

Table 2. Bolting percentage and yield (in metric tons per hectare) for 'NuMex Starlite' and other onion cultivars grown at Las Cruces, N.M.

Cultivar	Seeding date ^z							
	16 Sept. 1988		6 Sept. 1989		27 Sept. 1989		10 Oct. 1989	
	Bolting	Yield	Bolting	Yield	Bolting	Yield	Bolting	Yield
NuMex Starlite	16 a ^z	79 a	3 a	28 ab	0 a	51 a	0	37 a
NuMex BR 1	10 a	84 a	6 a	29 a	0 a	52 a	0	36 a
NuMex Sunlite	20 a	80 a	5 a	22 abc	0 a	42 ab	0	33 a
Texas Grano 1015 Y	66 b	19 b	31 b	13 c	5 b	36 ab	0	37 a
Texas Grano 502 PRR	---	---	43 b	16 bc	4 b	31 b	0	33 a
New Mexico Yellow Grano	79 c	13 b	---	---	---	---	---	---

^zThe respective harvest dates were 30 May 1989 and 24 May, 5 and 12 June 1990.

^zMean separation within columns at $P < 0.05$ by Duncan's multiple range test.

Suggested planting dates for 'NuMex Starlite' at Las Cruces are 25 Sept.-10 Oct. A 10 Oct. planting of 'NuMex Starlite', following a 27 Sept. planting of 'NuMex Sunlite', provided ≈ 2 weeks difference in maturity between the two cultivars (Table 1), ideal for harvest continuity. Until now, the maturity period immediately following 'NuMex Sunlite' has been filled largely by 'New Mexico Yellow Grano', 'Texas Grano 1015 Y', or 'Texas Grano 1105 Y', but those cultivars are susceptible to bolting and must be grown from transplants rather than from direct seeding in the fall. We expect fall-seeded 'NuMex Starlite' to replace much of the transplanted short-day crop in southern New Mexico.

Availability

Small samples of breeder's seed are available from J.C. and M.H. Foundation seed can be purchased from the New Mexico Crop Improvement Association, Box 3CI, New Mexico State Univ., Las Cruces, NM 88003. We have applied for plant variety protection.

Literature Cited

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