

'Val-Tex 41': A Winter Lettuce Cultivar for Southern Texas

P.W. Leeper¹ and B. Scully²

Texas Agricultural Experiment Station, Texas A&M University, Weslaco, TX 78596-8399

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The winter lettuce crop in southern Texas is planted from mid-October to mid-November and is harvested in January and February. This second planting period is dominated by 'Great Lakes 6238' (Bohn and Whitaker, 1951) and, to a lesser extent, by 'Golden State D'. The objective of this breeding program was to develop a cultivar adapted to this production period and to enlarge the array of winter cultivars. Adaptation to southern Texas winters requires tolerance to occasional frost, tipburn resistance, and resistance to downy mildew (*Bremia lactucae* Regl.), particularly races 5 and 6 (Sleeth and Leeper, 1966; Jones and Leeper, 1971). The name Val-Tex indicates the Rio Grande Valley of Texas; 41 is an incidental plot number.

Origin

'Val-Tex 41' was developed by a modified pedigree method that included two hybridizations and repeated single-plant selections. The original male parent was USDA breeding line 46712-3; an F₃ selection from a cross between 'Great Lakes 66' and DMR-D, a downy mildew-resistant genotype (T.W. Whitaker, personal communication). Single-plant selection was practiced within breeding line 46712-3 and all subsequent progeny until F₁₁, when W552-1 was selected (Fig. 1). In this generation, W552-1 was crossed as

the male parent with breeding line W644, a fourth generation selection from PI 274-900. From this cross, single-plant selection was practiced for 10 generations when W78-175-8 was identified as an acceptable breeding line for the winter production period. Single-plant selection was again practiced until C-

41M was selected from W78-175-8 in F₁₃. This line was evaluated for 2 seasons and named 'Val-Tex 41' in the F₁₅ generation (Fig. 1).

Description

'Val-Tex 41' is a "Type 2" crisphead lettuce, as defined by the Great Lakes cultivars (Ryder, 1987). Frame and wrapper leaves are bright medium green with serrated margins. Internal leaves are golden yellow. We judge leaf thickness, texture, crispness, and flavor characteristics to be similar to 'Great Lakes 659'. Leaf midribs are flatter and straighter than the Great Lakes type, but are similar to the Vanguard type (Type 3) (Ryder, 1987). 'Val-Tex 41' has deeper and rounder heads than most of the Great Lakes strains.

Table 1. Comparison of economic traits of 'Val-Tex 41' with the standard winter cultivars grown in the lower Rio Grande Valley of Texas."

Cultivar	Fresh yield (mg·ha ⁻¹)	Head wt (kg/head)	Tipburn (%)	Marketable heads at first harvest (%)
	<i>Mean ± SE</i>			
Val-Tex 41	57.7 ± 9.0	1.2 ± 0.2	13.3 ± 23.1	76.0 ± 10.4
Great Lakes 6238	42.1 ± 9.1	1.1 ± 0.2	24.0 ± 15.2	30.3 ± 16.9
Golden State D	52.5 ± 10.3	1.2 ± 0.5	30.0 ± 0.0	50.0 ± 30.0

²Based on two sites over 2 years, with two replications per site.

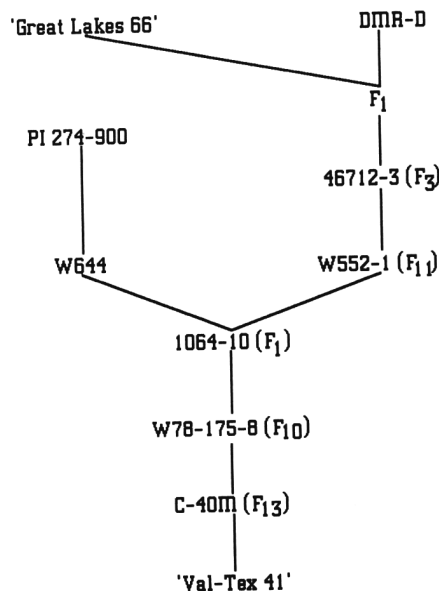


Fig. 1. Pedigree of 'Val-Tex 41'.

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¹Professor Emeritus.

²Assistant Professor.

'Val-Tex 41' carries resistance to races 5 and 6 of downy mildew (*Bremia lactucae* Regl.). It also has greater resistance to freezing damage and premature bolting than 'Great Lakes 6238' or 'Golden State D'. 'Val-Tex 41' averaged greater yields and head mass, less tipburn, and required fewer harvests than the two standard cultivars 2 seasons at the Weslaco Experiment Station (Table 1).

Availability

Foundation seed was distributed to 10 seed

companies in 1984 and is currently available from Shamrock Seed Co., Salinas, Calif., and Peta Seed Co., Woodland, Calif. Breeders seed has also been deposited in the USDA lettuce cultivar collection held in Salinas, Calif.

Literature Cited

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