Registration of ‘Rio Verde’ Lablab

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‘Rio Verde’ (Reg. No. CV-280, PI 648441) lablab [Lablab purpureus (L.) Sweet] was developed through selection for tolerance to defoliation, forage production potential, and Texas seed production. Rio Verde was developed at the Texas A&M University Agricultural Research and Extension Center at Overton, TX, and released by the Texas Agricultural Experiment Station (TAES) in 2006.

Fifty-two lablab plant introduction (PI) lines, ‘Rongai’ lablab, ‘Iron and Clay’ cowpea [Vigna unguiculata (L.) Walp.], and an experimental cowpea were planted at Overton on 22 May 1997 (Smith and Rouquette, 1998). The lablab PI lines were obtained from the USDA-ARS Plant Genetic Resources Conservation Unit at Griffin, GA. The lablab and cowpea entries were grazed with cattle beginning on 22 July and ending 48 h later. After 48 h, all lablab entries had been grazed with 95% defoliation. For the same time period, the cowpea entries averaged 4% defoliation. Regrowth and seed production were evaluated 15 Aug. and 2 Oct. 1997. Three plants of PI 388018 survived the severe defoliation, grew at a vigorous rate, and were in full bloom by late August. Seed was harvested from these plants in late October 1997, and bulked and seed was increased in 1998 to form the line TX98-3. Lablab is self-pollinated, and the three plants that were bulked to form TX98-3 were identical in morphology and maturity, with no segregation evident. The original source line (PI 388018) was mixed and varied in maturity and in regrowth after defoliation. Rio Verde is the first lablab cultivar developed in the United States and also has the value-added trait of Texas seed production.

Rio Verde initiates flowering in late August (25 August at Overton, TX [32.79759 N, 94.97228 W]) with 50% bloom occurring about 1 September; the earliest mature seed are produced by 15 October. In contrast, Rongai lablab (Wilson and Murtagh, 1962) is very late flowering and generally does not flower in central or northeast Texas before frost. Rio Verde seed ranges in color from black to mottled black and brown, in contrast to Rongai seed, which is a uniform pale brown with a prominent white hilum. Rio Verde seed are smaller (7000–7400 seed kg–1) than Rongai (3600–4300 seed kg–1). Rio Verde flowers are light lavender, with the standard petal fading to white as the flower matures and opens. Rongai flowers are white.

Rio Verde was evaluated at four Texas locations in 2004 and two Texas locations in 2005. Forage production of Rio Verde lablab was not different (P > 0.05) from Rongai in five of the six location-years and ranged from slightly more than 5.8 to 3.1 Mg ha–1 of dry forage at Overton in 2004 and Dallas in 2004, respectively. No differences (P > 0.05) were noted between Rio Verde and Rongai in leaf and stem protein percentage from two harvests at Overton in 2005. At the 8 Sept. 2005 and 25 Oct. 2005 harvests at Overton, leaf protein of Rio Verde was 260 and 320 g kg–1, respectively, and stem protein was 130 g kg–1 at both harvests.

Seed production of Rio Verde lablab has been successful at Vernon, TX (34.14743 N, 99.30009 W) in 2003 and 2004, at Mason, TX (30.74925 N, 99.23209 W) in 2005, and Rotan, TX (32.85362 N, 100.46541 W) in 2006.

Rio Verde is adapted to sandy, sandy loam, clay loam, and clay upland soils of the U.S. southern region, including the following regions of Texas (Gould, 1975): Pineywoods, Gulf Prairies and Marshes, Post Oak Savannah, Blackland Prairies, Cross Timbers and Prairies, and South Texas Plains. In the lower rainfall areas of the Cross Timbers and the South Texas Plains, irrigation may be required for establishment. Lablab does well on a wide variety of well-drained soils but does not tolerate waterlogging (Mullen, 1999). In northeast Texas, the primary growing season for Rio Verde lablab is June through October. This cultivar will establish, survive, and be productive with 25 cm of rain during this five-month growing season.

Foundation seed of Rio Verde will be maintained by Texas Foundation Seed Service. Application will be made for U.S. Plant Variety Protection.

References


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