

Dh 256 – High Yielding Drought Tolerant Groundnut Cultivar for Water Limited Environments of Southern India

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Main Agriculture Research Station (MARS), University of Agricultural Sciences, Dharwad, India (15° 13' N, 75° 07' E, 678 m above mean sea level) receives 800 mm of average annual rainfall and thus comes under transitional tract of Karnataka state of India. This location has typical bimodal distribution of rainfall with one peak during July month that coincides with sowing and other during October month of the year that enables harvesting of groundnut. Under the changing climatic scenario, this location also witnessed irregular rainfall during rainy season of 2015 with June month receiving 160 mm rainfall as against 64-year average of 104 mm which enabled sowing of groundnut breeding material (developed specifically for drought tolerance) during second fortnight of June. Then, the location received 43, 34 and 22mm during July, August and September as against 64 years average of 155, 102 and 108 mm, respectively during the corresponding months. Hence, moisture stress during the post flowering to pod formation stage differentiated F2 segregating material into drought tolerant and susceptible plants. Among the 24 drought tolerant plants from the cross R 2001-2 x GM 4-3, five high yielding progenies studied during summer 2016 under irrigated and water stress conditions. Among these R 2001-2 x GM 4-3-1 recorded higher pod yield (4858 kg/ha) compared to high yielding check cultivar G 2-52 (2716 kg/ha) under irrigated condition. The same progeny also recorded moderate pod yield of 3996 kg/ha compared to 1862 kg/ha of check cultivar G 2-52 under water stress condition. The genotype was designated as Dh 256 had higher relative water content (> 70 %) as against 50 % relative water content in case of susceptible check TMV 2. This genotype Dh 256 was released for cultivation under drought prone regions of Southern states of India during 2019.