

Morphological, DUS and molecular characterization of Tuberose varieties

Sudha Patil¹, Ranjita Kulkarni²

Navsari Agricultural University, India



Abstract:

The research experiment was conducted at the Floriculture Research Farm, ASPEE College of Horticulture and Forestry, Navsari Agricultural University, Navsari, Gujarat during 2018-2019. It was laid out in randomized block design with three replications and fourteen tuberose varieties as treatments. The observations were recorded on various vegetative and flowering parameters and result revealed significantly early sprouting in var. Phule Rajani (27.20 days) while maximum sprouting percentage in var. Pearl Double i.e. 86.23 % (98.95 %). The vigorous growth in terms of plant height at 120 days (47.24 cm) and at 240 DAP (80.84 cm) was noted significantly in var. Pearl Double. Variety Pearl Double recorded significantly maximum leaves per plant at 120 DAP (46.53) whereas, var. Pune Local Single recorded significantly maximum leaves per plant at 240 DAP (108.53). With respect to flowering parameters, significantly early spike emergence was recorded in var. Hyderabad Single (187.27 days) while, significantly minimum days to 50 % flowering was observed in var. Mexican Single (213.73 days). Similarly, maximum rachis length and spike length were noted in var. Calcutta Double (36.80 cm) and Pune Local Single (111.20 cm), respectively. Variety Vaibhav produced significantly maximum number of florets per spike (55.60) while the biggest flower was recorded in var. Calcutta Double (4.45 cm). Significantly longest spike longevity as well as vase life were observed in var. Mexican Single (30.00 days) and var. Pune Local Double (18.93 days), respectively. In case of yield parameters, significantly maximum spikes per plant (2.80) and per hectare (148148.13) was recorded in var. Prajwal. Maximum number of bulbs and bulblets per plant were noted in var. Mexican Single (9.87) and Pearl Double. Moreover, tuberose varieties were characterized based on DUS guidelines for 29 essential characters among which one character was monomorphic, thirteen dimorphic and fifteen were polymorphic indicating their potential for varietal characterization and distinctiveness. During molecular study using RAPD markers, total 545 reproducible amplicons with 60 loci were generated by 11 RAPD primers, out of which 47 were found polymorphic. The average percentage of polymorphism (76.12 %) was recorded in tuberose genotypes. Wide range of number of amplicons per primer was observed i.e. primer OPG-02 and OPG-06 had 4 amplicons whereas, highest 8 amplicons were scored for the primer OPG-08. The average number of amplicons per primer was 5.45. The Jaccard's similarity coefficients for 14 genotypes based on 11 RAPD markers were computed. The similarity coefficients were ranged from 0.458

to 0.967 and clustering based on similarity matrix of 14 tuberose genotypes was assessed. The quantification of RAPD expressed two major clusters. The largest cluster had 11 genotypes which were denoted as cluster II and the smaller with 3 genotypes denoted as cluster I. Further, the cluster II found to be grouped into two sub-clusters viz., cluster II- B with 2 genotypes and cluster II- C with 7 genotypes.



Biography:

Dr. Sudha Patil has completed her PhD in floriculture & Landscaping from Navsari Agricultural University. She is Assistant Professor in Dept. of Floriculture & Landscape Architecture since 2013 and had served as SRA at MPKV, Rahuri during 2008-2013. She has been awarded with 6 Gold medals & 1 award during academics while she has bagged 5 awards at national level during her service. She was involved in development of pomegranate variety "Phule Bhagwa Supar". She is involved in teaching and guiding of PG students. She has published 38 papers, 8 lead papers, 12 books/booklets/ practical manual, etc., more than 80 technical papers, 39 popular articles and 11 research recommendations for farmers and has been serving as an editorial board member of repute.

Speaker Publications:

1. Standardization of growing medium and primary nutrients for anthurium cultivation under greenhouse, January 2019 Indian Journal of Horticulture 76(2):334
2. Mutation Induced in Gladiolas through Physical and Chemical Mutagens, Published by GRIN Verlag (2017) ISBN 10: 3668544344 ISBN 13: 9783668544345
3. Mutation Induced in Gladiolas through Physical and Chemical Mutagens (Paperback), Published by GRIN Verlag,

United States (2017), ISBN 10: 3668544344 ISBN 13: 9783668544345

4. Antidiabetic activity of alcoholic extract of Neem (Azadirachta Indica) root bark, Natl J Physiol Pharm Pharmacol. 2013; 3(2): 142-146

5. Interaction Effect of Nitrogen and Phosphorus on Growth, Flowering and Yield of Bird of Paradise (Strelitzia reginae), nt.J.Curr.Microbiol.App.Sci.2017.6(9): 1566-1570

[3rd International Conference on Agriculture, Food and Aqua](#); Dubai, UAE - August 10 -11, 2020.

Abstract Citation:

Sudha Patil, Morphological, DUS and molecular characterization of Tuberose varieties Agri Food Aqua 2020, 3rd International Conference on Agriculture, Food and Aqua; Dubai, UAE - August 10 -11, 2020.
(<https://agriculture.foodtechconferences.com/>)