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Evaluation of different adenium hybrids in shadenet under Prayagraj agro-climatic conditions

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Abstract

Adenium is one of the popular low maintenance flowering pot plant, with great relevance in the ornamental market. An experiment entitled "Evaluation of different adenium hybrids in shadenet under Prayagraj agro-climatic conditions", Department of Horticulture, Naini Agricultural Institute, Sam Higginbottom University of Agriculture, Technology And Sciences, Prayagraj. The experiment was conducted in Randomized Block Design (RBD) with six hybrids replicated thrice. The different hybrids of adenium used were North West, Red Pride, Shanghai Express, Siam Disco, Rose Maiden and 363. The results revealed that at monthly time interval after pruning, the hybrid Red Pride was found to be significantly promising hybrid with respect to maximum plant height (27.63 cm) followed by North West (27.53 cm), maximum number of petals per flower (10 petals) followed by 363 (10 petals). significantly bigger flowers (7.34 cm) were observed after pruning in North West followed by Rose Maiden (6.92cm) and Siam Disco (6.7 cm), significantly higher self life of flowers (4.5 days) was observed in Rose Maiden followed by 363 (3.5 days). Maximum flower blooming period (55 days) was observed in Rose Maiden followed by 363 (53 days).

Keywords: adenium, pot plant, pruning

Introduction

Adenium genus belonging to family Apocynaceae, is a succulent shrub commonly known as desert rose. *Adenium obesum* is a native of Africa but nowadays is cultivated in several parts of the world including India as a popular ornamental plant. This plant represents one of the richest sources of phytochemicals such as glycosides and posses great potential for pharmaceuticals and piscicultural applications. Desert rose, mock azalea, impala lily, and Sabi star are amongst the common names of the plant. Long grown as succulent plant by enthusiasts because of its bizarre shape, beautiful flowers in colors from deep red to pure white, and its tolerance of occasional neglect, adeniums are rapidly becoming popular horticultural subjects and houseplants worldwide. One of the surest ways to induce bloom in grafted Adeniums is to prune them hard, new growth will bear flowers. With experience it is possible to time the pruning to get massive bloom at a particular time. Adenium is a beautiful exotic houseplant in the form of an unusual bush or tree (Dimmitt *et. al*, 2009) [2].

Modern hybrids also have luxurious flowering. The plant retains its beauty even during dormancy due to the trunk of an interesting shape having a thickening below caudex (Brown *et. al*, 2012). Adenium is one of the popular low maintenance flowering pot plant, with great relevance in the ornamental market due to its sculptural aspect, resistance to drought stress along with very thick shiny leaves, showy caudex and flowers. They can be grown for many years in a pot and are commonly used for making bonsai. New hybrids have being evolved which need to be evaluated for their performance in different regions.

Materials and Methods

An experiment entitled Evaluation of different adenium hybrids in Shade net under Prayagraj agro climatic conditions in the Department of Horticulture, Sam Higginbottom University of Agriculture, Technology And Sciences, Prayagraj during August, 2019 – July, 2020. Grafted plants were planted in pots of 6 inch size. There were total number of 60 plants consisting of six hybrids *viz.* Rose Maiden, North West, Red Pride, Siam Disco, Shanghai Express and 363. The experiment was laid out in Randomized Block Design (RBD) with three replications. One year old grafted adenium hybrids were procured from Adenium Nursery, Kolkata. The recommended cultural practices was followed for raising the crop. The average values from the samples of each hybrid in every replication were worked out and results were used to evaluate the performance of different hybrids on various growth and flowering parameters.

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Results and Discussion

The data presented in Table 1 shows that after pruning, the hybrid Red Pride was found to be significantly promising hybrid with respect to maximum plant height (27.63cm) followed by North West (27.53 cm), maximum number of petals per flower (10 petals) followed by 363 (10 petals). Variability in plant height among the hybrids prevails due to genetic inheritance, growing environmental conditions and influence of the hybrid with respect to growth parameters. Similar results were obtained by Dimmit and Varella *et.al* (2015) [6].

Significantly bigger flowers (7.34cm) were in North West followed by Rose Maiden (6.92cm) and Siam Disco (6.7cm).

Variance among hybrids can be attributed to differences in genetic makeup and its constituents. Significant variations among hybrids under investigation were observed for all the character as suggested by Varella *et al* (2015) [6] and Singh *et al* (2017) for adenium.

Significantly higher self-life of flowers (4.5 days) was observed in Rose Maiden followed by 363 (3.5 days). Significantly higher blooming period (55 days) was observed in Rose Maiden followed by 363 (53 days). Variation in different floral characters might be owing to the divergence in these hybrids or wide range in nature of growth as also suggested by da sliva (2015) [6].

Table 1: Growth Parameters and Flower parameters of different adenium hybrids of (plant height, number of petals per flower, flower diameter, self- life and blooming period) monthly time interval after pruning

Varieties	Plant Height (cm)	Number of petals per flower	Flower diameter (cm)	Self-life (days)	Blooming period (days)
Shanghai Express	20.94	0	0	0	0
North-West	27.53	5	7.34	2	47
363	26.5	10	6.7	3.5	53
Rose Maiden	24.65	5	6.92	4.5	55
Siam Disco	24.53	5	6.76	3	53
Red Pride	27.63	10	6.61	3	52
C.D.	3.62	1.3	0.64	1.1	12.4
SE(m)	1.13	0.41	0.20	0.3	3.9
SE(d)	1.60	0.59	0.2	0.5	5.5
C.V.	7.78	11.82	6.0	22.9	15.5

Conclusion

From the investigation conducted on different hybrids of adenium, it is concluded that hybrid Red Pride performed significantly followed by Siam Disco in plant height, number of petals per flower, flower diameter, self-life and blooming period. These two hybrids performed well under Prayagraj agro-climatic conditions and can be recommended for pot plant display.

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