

Original Research Article

“VARIETAL EVALUATION OF ANTHURIUM (*Anthurium Andraenum*) UNDER PRAYAGRAJ AGRO – CLIMATIC CONDITIONS”

ABSTRACT:-

An investigation was conducted at Horticulture Research Farm, Department of Agronomy, Naini Agricultural Institute, Sam Higginbottom University of Agriculture Technology and Sciences, Prayagraj. The experiment was laid out in completely randomized design with six treatment and four replication. The variety under test was Tropical Red, Flame, Tropical Night, Esmaralda, Acropolis and Condor. The variety Tropical Red recorded maximum plant height(cm), days to first flowering, stalk length(cm), length of spathe(cm), spathe width(cm), diameter of spadix(cm), number of flower per plant and vase life, followed the variety of Condor . The variety of Esmaralda was found least flower and highest number of leaves. It was evident from the investigation the Cv. ‘Tropical Red’ had superior performance over all other variety. The Tropical Res also found in best treatment in Economics Such like Cost of cultivation Rs 51707, gross return Rs. 115093, Net return Rs. 63386, and BCR ration were 2.23.

Keywords :- Tropical Red, Esmaralda, Condor, Acropolis

1. INTRODUCTION:-

Flowers are the nature’s miracle, which is being associated with the humans from cradle to coffin. No fete, festival or ceremonial events are complete without flowers. Commercial Floriculture is an intensified form of Horticulture. It is the art and knowledge of growing flowers to perfection. Floriculture put its best foot forward to shift a considerable amount of capital in productive chain every year. Indian floriculture industry stands 2nd position in world’s production of floriculture produce after China about 248.51 thousand hectares area with the production of 1,685 thousand tonnes of loose flowers and 472 thousand tonnes of cut flowers in 2014-15. But India’s share in world trade is only 0.61 percent in year 2014 and 0.89

percent in 2015 according to Associated Chambers of Commerce and Industry of India (ASSOCHAM). It is growing at a compounded annual growth rate of about 30 percent per year **(Punitha and Singh, 2012)**.

India is in the fortunate position of being able to get a diversity of climate and soil, unlike the severe winters prevailing in the west. This best reason created a greater need for export of flowers and its products to overseas and the demand for flowers both in domestic and International markets is increasing at a faster rate owing to the liberalization. The leading flowers which are in great demand are rose, chrysanthemum, carnation, gladiolus and anthurium **(Gantait and Mandal, 2010)**.

Anthurium (*Anthurium andreanum* Lind.) is a perennial herbaceous, semi terrestrial plant with somewhat creeping growth habit , using aerial roots for anchorage. These evergreen herbaceous epiphytes belongs to family araceae and native to Tropical America (Columbia) with the chromosome of $n=15, 16, 18$. Whereas *Anthurium andreanum* is a diploid with $2n= 30$. The species are found in the new world tropics from Mexico to Northern Argentina and Uruguay, Central and Tropical America and some of the West Indian Islands. In 1889, S. M. Damon, introduced the first anthurium to Hawaii from London. The anthurium flower trade became Hawaii's biggest source of income and this flower is famed as the national flower of Mauritius **(Islam et al., 2013)**.

The genus *Anthurium*, with 700 species is largest genus of the family Araceae. It has originated in South America. The word anthurium originated from the greek words 'Anthos' which means 'flowering' and 'Oura' means 'tail'. The two known species having commercial importance are *Anthurium andreanum* Linden and *Anthurium scherzerianum* both have beautiful flowers and attractive foliage.

The anthurium species under cultivation are erect plants that have petiolated, lobed, cordate and heart shaped green leaves of variable size. The leaf shows reticulate venation with a prominent midrib, lateral veins and a well-defined leaf margin. The leaves are arranged spirally, either clockwise or anticlockwise. Its flower is a combination of colourful modified leaf (spathe) and pencil like protrusion (spadix) borne on leafless stalk or peduncle. Hundreds of small hermaphrodite, insignificant, sessile flowers are densely packed on the spadix.

Anthurium plant possesses an underground rhizome with adventitious roots. It requires warm greenhouse and humid condition for its growth and quality flowering (Agasimani *et al.*, 2011).

2. MATERIALS AND METHODS:-

2.1 Experimental Site and Location

The experiment was conducted during kharif season of the year 2021 – 22 at Horticulture Research Farm, Department of Agronomy, Naini Agricultural Institute, Sam Higginbottom University of Agriculture Technology and Sciences, Prayagraj.

Table 1. Details of anthurium varieties under experiment

S. No	Name of Variety	Treatments Details
V1	Tropical Red	5 % of cocopeat, 5% vermicolite
V2	Flame	2 % Neem Cake
V3	Tropical Night	2 % Nitrogen, 2 % Phosphorus
V4	Esmaralda	1% Potassium
V5	Acropolis	80 % Vermicompost
V6	Condor	3% Leefe Compost

3. RESULTS AND DISCUSSION:-

3.1 Vegetative growth parameters and flowering and flower quality parameters of various varieties of Anthurium

The highest plant height of the treatments was found Tropical Red i.e. 35.03cm and followed by Condor (34.82 cm). The minimum plant height of the treatments was found 21.23cm with the variety of flame.

The highest number of leaves per plant of the treatments was found Esmaralda i.e. 17.05 and followed by Tropical Red (16.09). The minimum number of leaves per plant of the treatments was found 14.34 with the variety of Acropolis.

The highest stalk length of the treatments was found Tropical Red i.e. 27.00cm and followed by Condor (25.50cm). The minimum stalk length of the treatments was found 20.30cm with the variety of Acropolis..

The highest Spathe length of the treatments was found Tropical Red i.e. 14.82cm and followed by Condor (13.80cm). The minimum Spathe length of the treatments was found 10.08cm with the variety of flame.

The highest width of spathe of the treatments was found Tropical Red i.e. 10.59cm followed by condor (10.23cm) and minimum spathe width was found in Esmaralda (7.50cm).

The highest dia of Spandix of the treatments was found Tropical Red i.e. 0.49cm and followed by Condor (0.45cm). The minimum dia of Spandix of the treatments was found 0.25cm with the variety of Acropoils.

Table 2 Vegetative growth parameters and flowering and flower quality parameters of various varieties of Anthurium

S.No.	Name of Variety	Plant Height (cm)	Number of leaves per plant	Stalk length (cm)	Spathe length (cm)	Spathe width (cm)	Spandix diameter (cm)
1	Tropical Red	35.03	16.09	27	14.82	10.59	0.49
2	Flame	21.23	15.45	23.2	10.08	8.94	0.36
3	Tropic Night	28.98	16.89	24.6	11.24	8.9	0.39
4	Esmaralda	23.56	17.05	22.5	12.54	7.5	0.32
5	Acropolis	25.87	14.34	20.3	13.57	9.47	0.25
6	Condor	34.82	16.66	25.5	13.8	10.23	0.45
	General Mean	28.25	16.08	23.85	12.68	9.27	0.38
	Maximum	35.03	17.05	27	14.82	10.59	0.49
	Minimum	21.23	14.34	20.3	10.08	7.5	0.25
	SE+-	0.33	0.11	0.33	0.093	0.12	0.02
	Cd at 5 %	0.97	0.31	0.97	0.283	0.37	0.07
	CV%	2.64	4.78	2.64	3.4	4.47	4.89

3.2 Flower yield of various varieties of Anthurium

The highest number of flower per plant of the treatments was found Tropical red i.e. 3.01 followed by Condor (2.81) and the minimum number of flower was found Esmaralda (0.25).

The highest vase life of the treatments was found Tropical red i.e. 32.21 followed by condor 30.67 and the minimum vase life of the treatments was found in Acropolis (19.70).

The highest Number of days for emergence of flower initiation of the treatments was found Esmaralada i.e. 180.40, followed by Acropolis (173.60) and minimum Number of days for emergence of flower initiation was found Tropical red i.e. 124.50.

Table 3. Flower yield of various varieties of Anthurium

S.No.	Name of Variety	Days for first flowering	Number of flowers per plant	Vase life (days)
1	Tropical Red	104.5	3.01	32.21
2	Flame	144.9	1.4	26.73
3	Tropic Night	156.4	1.3	26.9
4	Esmaralda	180.4	0.25	29.02
5	Acropolis	173.6	1.7	19.7
6	Condor	112.5	2.81	30.67
	General Mean	145.38	1.75	27.54
	Maximum	180.4	3.01	32.21
	Minimum	124.5	0.25	19.7
	SE+-	0.75	0.2	0.11
	Cd at 5 %	2.17	0.6	0.31
	CV%	0.96	9.95	4.78

3.3: Economics of various varieties of Anthurium

Initially more investment was needed in the establishment of anthurium crops. The economics of the plant of different varieties the cost of cultivation Rs.51707, Gross Return Rs.115093, Net Return Rs.63386 and B: C ratio 2.23 was found the best treatment T₁.

Table 4. Economics of integrated nutrient management of rice

Treatments	Cost of cultivation (Rs/ha-1)	Gross return (Rs/ha-1)	Net return (Rs/ha-1)	Benefit- Cost ratio
T ₁	51707	115093	63386	2.23
T ₂	48147	96570	48423	2.01
T ₃	49038	100814	51776	2.06
T ₄	47258	77449	30191	1.64
T ₅	50820	103513	52693	2.04
T ₆	49927	107965	58038	2.16

Conclusion:-

The finding of the present investigation of can concluded that different varieties of under test were significantly varied in their vegetative, floral, yield and post-harvest characters. Variety V1 Tropical Red variety was performed best under this treatment and variety V6 condor is performed best under this treatment

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UNDER PEER REVIEW