

GROWTH RESPONSES OF ANTHURIUM PLANTS TO DIFFERENT GROWING MEDIA ON THE GROWTH AND FLOWERING

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ABSTRACT

Anthuriums are tropical plants belongs to the family Araceae are slow growing perennials that requires shady humid condition are grown for their showy cut flowers and attractive foliage. Anthurium plants require good growing medium with good physical and chemical conditions for their proper growth and development. Research work was carried out to find out the best suited growing media for the production of Anthurium plants (*Anthurium andreanum*) cv. Tropical. The experiment was conducted with different growing media in a combination of treatments viz. Coir pith, coconut husk, brick pieces, leaf mould, coir pith + coconut husk, coir pith + brick pieces, coconut husk + brick pieces, coconut husk + FYM, leaf mould + FYM and control (soil media). All the treatments were grown under uniform shade level of 75% by using shade nets. The treatments were replicated thrice. Among the different treatments, growing media with coir pith + coconut husk envisaged maximum plant height, plant spread, number of flowers per plant, flower stalk length, spathe length and spathe breadth. Vase life and quality of flowers were also found improved in coir pith + coconut husk. Based on the performance of anthurium plants in the experiment it can be recommended that *Anthurium andreanum* cv. Tropical performed its best under the growing media combination of coir pith + coconut husk at 1:1 ratio.

Key words : Growing media, Anthurium, Coirpith.

INTRODUCTION

Anthuriums are tropical plants grown for their showy cut flowers and attractive foliage. It has gained the importance as major cut flower of the modern world. Anthurium growing is a potential source of commercial farming and it makes best use of ready market for cut flowers with high returns both for its cut flower and whole plant. Anthurium is a slow growing perennial that requires shady, humid conditions as found in tropical forests. It includes more than 100 genera and about 1599 species, chiefly from tropics (Higaki *et al*, 1994). The Anthurium plant possesses an underground rhizome with adventitious roots, with low creeping habit of growth, using aerial roots for anchorage. Anthurium plants require good growing medium in good physical and chemical

conditions for their proper growth and development. Highly organic, well aerated medium with good water retention capacity and drainage is needed. The plant produces blooms throughout the year, one bloom emerging from the axil of every leaf. Flowers are usually harvested once a week at three quarters maturity. Even though Anthurium is grown by many planters, there is very less scientific information on growing medium. Standardization of growing media is most important to obtain higher yield and quality of the flowers. Therefore, the present work is carried out with a view to find the best suited growing media for enhancing the growth and flowering of Anthurium plants.

MATERIAL AND METHODS

The present study was carried out in Flora-tech floriculture unit at Kottarakara, kollam Dist, kerala state, India during 2007- 2009. The experiment was conducted with five types of growing media in 10 treatment combinations. The treatments with three replications were carried out in completely randomized design. The Anthurium (*Anthurium andreanum*) cv. Tropical was used for the study with 10 different treatment combinations given here, T₁ (coir pith), T₂(coconut husk), T₃ (brick pieces), T₄ (leaf mould), T₅ (coir pith + coconut husk), T₆ (coir pith + brick pieces), T₇ (coconut husk + brick pieces), T₈(coconut husk + FYM), T₉(leaf mould +FYM), and T₁₀(soil media). Plant height, plant spread, number of flowers per plant, flower stalk length, spathe length, spathe breadth and number of days taken for flower bud appearance were observed and recorded at 480 days after planting.

RESULTS AND DISCUSSION

The result evinced significant influence in overall performances of Anthurium plants due to *per se* and interaction effect of growing medias. Among the different treatment combinations, the maximum plant height (48.82 cm), plant spread (72.55cm), number of flowers per plant (5.13), flower stalk length(43.39 cm), spathe length(9.47 cm) and spathe breadth(9.66 cm) were recorded in T₅ (coir pith + coconut husk), this was followed by T₆ (coir pith + brick pieces) with plant height of 45.56 cm, plant spread of 68.84 cm, 4.72 flowers per plant, Flower stalk length of 40.21 cm, Spathe length of 8.88 cm and 9.06 cm of spathe breadth. Days taken for flower bud initiation were also early in T₅ with 102.91 days, followed by T₆ with 109.67 days. The least plant height (23.88 cm), plant spread (44.12 cm), number of flowers per plant (2.01), flower stalk length(19.02 cm), spathe length(4.98 cm) and spathe breadth(5.08 cm) were recorded in T₁₀(soil media). Days taken for flower bud initiation were late in T₁₀, which took 154.65 days for bud appearance (Table-1).

Table 1: Growth responses of anthurium plants to different growing media on the growth and flowering

Treatments	Plant height (cm)	Plant spread (cm)	Number of flowers per plant	Flower stalk length (cm)	Spathe length (cm)	Spathe breadth (cm)	Days taken for flower bud appearance
T ₁ - coir pith	42.14	64.92	4.30	36.87	8.27	8.43	116.56
T ₂ - coconut husk	38.83	61.00	3.89	33.67	7.67	7.82	121.59
T ₃ - brick pieces	35.78	57.52	3.51	30.69	7.12	7.26	127.92
T ₄ - leaf mould	32.70	54.01	3.12	27.68	6.56	6.69	134.31
T ₅ - coir pith + coconut husk	48.82	72.55	5.13	43.39	9.47	9.66	102.91
T ₆ - coir pith + brick pieces	45.56	68.84	4.72	40.21	8.88	9.06	109.67
T ₇ - coconut husk + brick pieces	42.19	64.99	4.30	36.91	8.28	8.44	116.67
T ₈ - coconut husk + FYM	39.22	61.61	3.93	34.01	7.74	7.90	122.82
T ₉ - leaf mould + FYM	32.37	53.47	3.09	27.41	6.50	6.63	132.96
T ₁₀ - soil media	23.88	44.12	2.01	19.02	4.98	5.08	154.65
SE (d)	1.33	1.74	0.15	1.35	0.26	0.16	-2.86
CD (p=0.05)	2.86	3.48	0.34	2.84	0.43	0.54	-6.09

The increased results in T₅ (coir pith + coconut husk) may be due to appropriate shade and growing media comprising of coir pith + coconut husk. Plants grown in containers have their root system confined to a limited volume of media. For optimal growth of plants, media must contain enough water and air, mainly depends on the physical properties of medium. Early flowering in *Dendrobium* was recorded with coconut fibre was also reported by Cibes *et al.* (1957). Savithri and Khan (1994) find out the growth promotive effect of coco peat was reported in a series of annual crops and same findings were done by Mirzaev (1988) in carnation. Coco peat in combination with tree fern is most suitable due to optimum water holding capacity, better drainage and aeration (Griffis *et al.* 1983).

Leffering(1975) concluded that Anthuriums grow best under shading of 73 to 80 % and flower production is significantly influenced by temperature and irradiance. According to Arumugam and Jawaharlal (2004) among the various shade levels, 75 % shade recorded maximum plant height, number of days taken for flowering, and length of spike. Similar kind of observations were also reported by Sabina George and Mohan Kumaran(1999). Fan *et al.*, (1998) reported that shaded plants showed increased growth and number of leaves as compared to open conditions. Generally, flowering pot plants species prefer net house and shade of tree for their growth and flowering, than open conditions Jadav *et al.*, (1996). Considering the above facts and results of the present investigation it could be concluded that the treatment combination of growing medium with coir pith + coconut husk has resulted as the best for the growth and yield of Anthurium plants (*Anthurium andreanum*) Cv. Tropical.

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