

EVALUATION OF DIFFERENT GROWING MEDIA FOR SPIDER PLANT (*CHLOROPHYTUM COMOSUM* JACQ.) ON VERTICAL BIO-WALL SYSTEM

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ABSTRACT

This experiment was conducted to find out the best media suitable for Spider plant on Vertical Bio Wall System. The experiment was laid out in a CRD treatment with three replications, with twelve different growing media. T₀ Control (Soil), T₁ Farmyard Manure, T₂ Cocopeat + Perlite (1:0.25), T₃ Vermicompost, T₄ Soil + Farm Yard Manure (1:1), T₅ Soil + Vermicompost (1:1), T₆ Farmyard Manure + Vermicompost (1:1), T₇ Cocopeat + Farmyard Manure + Vermicompost (1:1:1), T₈ Soil + Cocopeat + Perlite (1:1:0.25), T₉ Soil + Farmyard Manure + Vermicompost (1:1:1), T₁₀ Soil + Cocopeat + Perlite + Farmyard Manure (1:1:0.25:1) and T₁₁ Soil + Cocopeat + Perlite + Vermicompost (1:1:0.25:1). The aim of the study was to study the effect of different growing media on vegetative growth and rooting parameters on spider plant under vertical Bio-wall system. The interpretations were recorded on various vegetative parameter and rooting parameter. The result revealed that growing media T₉ Soil + Farmyard Manure + Vermicompost (1:1:1) gives significantly better and maximum performance at vegetative parameter like Plant height at 120 days (36.87 cm), Number of leaves/plant at 120 days of planting (41.92) leaves/plant, At 120 DAT Plant spread was measured (54.33 cm) in the North–South direction and (56.77 cm) in the East–West direction. The length of leaves was (35.53 cm) at 120 DAT. The maximum leaf width (3.09 cm) and the maximum fresh and dry weight of plant was recorded (180.44 g plant⁻¹) fresh weight of plant and (49.23 g plant⁻¹) dry weight of plant. The maximum number of spiderettes was recorded in T₇ Cocopeat + Farmyard Manure + Vermicompost at 120 DAT (23.93 plantlets plant⁻¹). Growing media T₇ Cocopeat + Farmyard Manure + Vermicompost give significantly better performance at rooting parameter like fresh weight of root (54.60 g plant⁻¹), dry weight of root (5.92 g plant⁻¹) and root length (24.50 cm).

KEYWORDS: Spider plant, Growing Media, Spiderettes, Vertical Bio-Wall System

INTRODUCTION

Rapid urbanization, population growth, and expanding infrastructure have resulted in the conversion of natural landscapes into built environments, contributing to environmental pollution, declining air quality, increased urban temperatures, and ecological imbalance. The scarcity of open spaces in densely populated cities further restricts conventional gardening and urban landscaping. Consequently, integrating vegetation into building structures has emerged as an important approach to sustainable urban development. Vertical greening systems, particularly green walls and framed bio-walls, offer an effective means of incorporating vegetation into limited spaces while enhancing architectural aesthetics and contributing to environmental improvement. The integration of vegetation into architecture has gained considerable attention as a strategy for developing sustainable urban environments. Shiah and Kim (2011) highlighted the potential of vertical gardens as practical and aesthetically appealing approaches to urban greening, while Yeang (1997) emphasized the importance of facade planting in integrating vegetation with architectural design. The concept of modern vertical gardening is associated with the contributions of Stanley Hart White, who patented the Vegetation-Bearing Architectonic Structure and System in 1938, and French botanist Patrick Blanc, who popularized contemporary living-wall systems. Vertical greening systems are broadly classified into green facades and living walls, including modular panels, felt-pocket systems, hydroponic walls, and framed bio-wall structures.

Green walls contribute to architectural aesthetics and may provide environmental benefits through shading, thermal regulation, particulate interception, and localized microclimate improvement. Vegetation covering building surfaces can reduce direct solar radiation and contribute to building insulation, while photosynthetic activity facilitates carbon dioxide assimilation. Kumar (2017) highlighted the aesthetic and functional significance of green walls, particularly their

contribution to shading and building thermal performance. The effectiveness of these benefits, however, depends on plant species, vegetation coverage, growing conditions, and system design. The successful establishment of plants in vertical bio-wall systems largely depends on the selection of an appropriate growing medium. Unlike conventional cultivation, vertical systems require lightweight media with adequate water-holding capacity, drainage, aeration, structural stability, and nutrient availability. Cocopeat provides moisture retention and favourable aeration, while perlite improves porosity and drainage. Vermicompost contributes organic matter and essential nutrients, whereas farmyard manure (FYM) supports nutrient availability and improves the physical and biological properties of the medium. Soil provides physical support and mineral nutrients and is an economical growing material. Combining these components in suitable proportions may improve the rooting environment and promote sustained plant growth under vertical cultivation conditions (Ghosh and Talukdar, 2021). Spider plant (*Chlorophytum comosum* Jacq.) belonging to the family Asparagaceae, is an important ornamental foliage plant valued for its attractive variegated leaves, adaptability, and production of daughter plantlets (spiderettes). Its compact growth habit and suitability for indoor and container cultivation make it a promising species for vertical greening systems. In addition to its ornamental importance, *C. comosum* has been investigated for its potential to accumulate certain environmental contaminants and remove selected airborne pollutants under experimental conditions (Osku *et al.*, 2022). Despite its adaptability, the growth and ornamental performance of spider plant under vertical bio-wall conditions may vary with growing-media composition, particularly because of restricted rooting volume and variations in moisture and nutrient availability. Appropriate media selection is therefore essential for promoting vegetative growth, root development, biomass accumulation, plant spread, and spiderette production while maintaining desirable ornamental quality.

MATERIAL AND METHODS

The present investigation entitled “Evaluation of different Growing Media for Spider Plant (*Chlorophytum comosum* Jacq.) on Vertical Bio-Wall System” was conducted during the Rabi season of 2025–26 at the premises of Pt. K. L. S. College of Horticulture and Research Station, Rajnandgaon, under Mahatma Gandhi Udhyanikkee Evam Vanikkee Vishwavidyalaya, Durg, Chhattisgarh, India. The experimental site is situated at 21.10° N latitude and 81.03° E longitude, with an elevation of 307 m above mean sea level. The region falls under the dry-moist sub-humid subtropical climatic zone of the Eastern Plateau and Hills agro-climatic region. The experiment was conducted from 1 December 2025 to 30 March 2026 under semi-shade conditions. Meteorological parameters, including maximum and minimum temperature, rainfall, relative humidity, evaporation and sunshine hours, were recorded at the agrometeorological observatory of the college. Uniform and healthy spider plantlets were procured from the departmental nursery and acclimatized under a shade-net facility before transplanting. A vertical bio-wall structure measuring 5.8 × 6.10 ft was fabricated using galvanized steel, fitted with polypropylene panel frames equipped with pot-locking systems. Each panel frame measured approximately 58 × 8.5 cm and contained three planting cups.

The structure consisted of nine columns and twelve rows of panel frames and was mounted on wheels to facilitate easy movement. A drip irrigation system comprising a main pipeline, lateral pipes and individual arrow drippers was installed to ensure uniform water application to the root zone. The experiment was laid out in a Completely Randomized Design (CRD) comprising twelve treatments and three replications, with a total of 324 plants. The treatments included T₀ Control (Soil), T₁ Farmyard Manure, T₂ Cocopeat + Perlite (1:0.25), T₃ Vermicompost, T₄ Soil + Farm Yard Manure (1:1), T₅ Soil + Vermicompost (1:1), T₆ Farmyard Manure + Vermicompost (1:1), T₇ Cocopeat + Farmyard Manure + Vermicompost (1:1:1), T₈ Soil + Cocopeat + Perlite (1:1:0.25), T₉ Soil + Farmyard Manure + Vermicompost (1:1:1), T₁₀ Soil + Cocopeat + Perlite + Farmyard Manure (1:1:0.25:1) and T₁₁ Soil + Cocopeat + Perlite + Vermicompost (1:1:0.25:1). The growing media were selected based on their physical and chemical properties, including bulk density, water-holding capacity, porosity, aeration and pH. Irrigation was provided at intervals of three to four days, depending on prevailing environmental conditions. Manual weeding and periodic loosening of the upper layer of the growing media were carried out to minimize competition and maintain adequate aeration. Pest infestation was managed through the application of profenofos 40% + cypermethrin 4% EC as required.

Observations on vegetative growth and rooting parameters were recorded at 120 days after transplanting (DAT) from five randomly selected and tagged plants per treatment. Vegetative parameters included plant height (cm), number of leaves/plant, plant spread in the north–south and east–west directions (cm), leaf length (cm), leaf width (cm), fresh and dry weight of the plant (g plant⁻¹) and number of spiderettes per plant. Plant height was measured from the collar region to the tip of the youngest fully expanded leaf, while plant spread was recorded in both directions using a measuring scale. Leaf length was measured from the leaf base to the tip, and leaf width was recorded at the widest point of a physiologically active leaf. At 120 DAT, selected plants were harvested, washed thoroughly to remove adhering growing media and weighed to determine fresh weight. The samples were subsequently oven-dried at 85 ± 2°C for 24 hours or until a constant weight was achieved to determine plant dry weight. The number of spiderettes produced on the runners of each selected plant was counted manually and expressed as number per plant. Rooting parameters, including root fresh weight (g plant⁻¹), root dry weight (g plant⁻¹) and root length (cm), were also recorded at 120 DAT. The roots were carefully separated from the growing media, washed and weighed to determine fresh weight, followed by oven-drying at 65 ± 2°C until a constant weight was attained. Root length was measured from the base of the stem to the tip of the longest root. The recorded data were subjected to analysis of variance (ANOVA) appropriate for a Completely Randomized Design, following the procedure described by Panse and Sukhatme (1985). Treatment means were compared using the standard error of the mean (SEm), standard error of the difference (SEd) and critical difference (CD) at the 5% level of significance. The coefficient of variation (CV) was calculated to assess experimental variability.

RESULT AND DISCUSSION

Vegetative Parameters

Plant height

Significance difference with respect to plant height among the 12 treatment was observed in 120 days. The mean data for plant height (cm) for plant under study are presented in Table 1. At 120 DAT, the maximum plant height was recorded in T₉ (Soil + Farmyard Manure + Vermicompost) at (36.87 cm), which followed by T₇ (Cocopeat + Farmyard Manure + Vermicompost) at (34.13 cm), whereas the minimum height was observed in the control T₀ (Soil) at (25.42 cm). Treatment T₉ (Soil + farmyard manure + vermicompost) recorded the highest performance, which may be attributed to the complementary effects of the three components. Vermicompost supplies readily available nutrients and organic matter and improves nutrient availability and root development, while FYM contributes organic matter and enhances soil physical properties, including moisture retention and nutrient availability. Soil provides physical support and a stable mineral medium for root growth. Thus, their combined use may have provided a balanced root-zone environment with improved nutrient availability, moisture retention and root activity, thereby promoting vegetative growth of spider plant. The beneficial effect of vermicompost on plant biomass and the positive influence of organic manures on soil properties. Similar result was supported by Blouin *et al.*, (2019) and Dhaliwal *et al.*, (2019).

No. of leaves/plant.

Significance difference with respect to number of leaves/plant among the 12 treatments was observed in 120 days. The mean data for number of leaves /plant for plant under study are presented in Table 3. Among the 12 treatments, the highest number of leaves/plant was recorded in T₉ (Soil + Farmyard Manure + Vermicompost) after 120 days of planting, with (41.92) leaves/plant which followed by T₇ (Cocopeat + Farmyard Manure + Vermicompost) with (39.11) leaves/plant. The lowest number of leaves was observed in the control T₀ (Soil) with (21.62) leaves/plant. The superior performance of T₉ (Soil + FYM + Vermicompost) may be attributed to the enhanced nutrient availability, particularly nitrogen, which stimulates meristematic activity and promotes the initiation of new leaves. The improved root-zone environment facilitates greater root growth and efficient uptake of water and nutrients. Vermicompost also enhances microbial activity and nutrient mineralization, supporting continuous vegetative growth. These effects collectively promote frequent leaf initiation and expansion, resulting in a higher number of leaves per plant in spider plant. The similar result was supported by (Ghosh and Talukdar, 2021)

Plant Spread

The plant spread of in the North–South and East–West directions was recorded at 120 days after transplanting (DAT). The analysis revealed a highly significant variation in mean plant spread among the 12 substrate combinations are presented in Table 1. At 120 DAT, the maximum plant spread was recorded in T₉ (Soil + Farmyard Manure + Vermicompost) measuring (54.33 cm) in the North–South direction and (56.77 cm) in the East–West direction, which followed by T₇ (Cocopeat + Farmyard Manure + Vermicompost), (50.26 cm) in the North–South and (53.07 cm) in the East–West directions, respectively. The minimum plant spread was observed in the control treatment, T₀ Control (Soil), with (34.51 cm) in the North–South direction and (30.28 cm) in the East–West direction. The superior performance of T₉ (Soil + FYM + Vermicompost) may be attributed to the combined improvement in soil structure, water-holding capacity, nutrient availability, and microbial activity. FYM content organic matter and gradually releases nutrients through mineralization, while vermicompost supplies readily available nutrients and biologically active compounds that stimulate root and shoot development. Improved aeration and moisture retention enhance root growth and nutrient uptake, it increasing leaf production, leaf area, and plant biomass. The similar result was supported by (Rameshkumar ,2018) and (Ghosh and Talukdar, 2021)

Length of leaves

A significant variation in length of leaves was observed among the 12 growing-media treatments. The analysis revealed a highly significant variation in mean length of leaves among the 12 substrate combinations are presented in table 1. The maximum length of leaves was recorded in T₉ (Soil + FYM + Vermicompost) at (35.53 cm), which followed by T₁₁ (Soil + Cocopeat + Perlite + Vermicompost) at (32.98 cm), whereas the minimum was observed in the control T₀ (Soil) at (24.53 cm). The superior performance of T₉ (Soil + Farmyard Manure + Vermicompost) may be attributed increased nutrient availability and improved physicochemical properties of the growing medium. The combination of FYM and vermicompost increases organic matter content, improves soil aggregation, porosity, water-holding capacity and consequently facilitates better root proliferation and nutrient acquisition. The availability of nitrogen and other essential nutrients promotes chlorophyll synthesis, protein metabolism, cell division and cell expansion, increased vegetative growth. In addition, humic substances and beneficial microorganisms associated with vermicompost may stimulate root activity and nutrient uptake and increasing to shoot development. The similar result was supported by (Blouin *et al.*, 2019).

Leaf width (cm)

A significant difference in leaf width (cm) was observed among the 12 treatments of plant. The analysis revealed a highly significant variation in mean leaf width among the 12 substrate combinations are presented in Table 1. The maximum leaf width was recorded in T₉ (Soil + FYM + Vermicompost) (3.09 cm), which followed by T₇ (Cocopeat + FYM + Vermicompost) (2.79 cm), whereas the minimum leaf width was recorded in T₀ (Soil) (2.07 cm). The superior leaf width development under T₉ (Soil + FYM + Vermicompost) may be attributed the

enhanced physical and nutritional environment created by the combined application of these organic amendments. The addition of FYM and vermicompost improves soil structure, porosity, moisture retention, and nutrient availability, thereby fostering an optimal rhizosphere for root development and nutrient uptake. The higher availability of nitrogen and essential nutrients promotes chlorophyll synthesis, photosynthetic activity and overall vegetative growth. Adequate soil moisture increased cell division and expansion within the developing leaf lamina. The similar result was supported by (Dhanasekaran *et al.*, 2020).

Fresh weight of plant (g)

The fresh weight of plants (g) was recorded the mean values were statistically analysed. The analysis revealed a highly significant variation in mean fresh weight of plant among the 12 substrate combination are presented in Table 2. The maximum fresh weight was recorded in T₉ (Soil + FYM + Vermicompost) at (180.44 g plant⁻¹), which followed by T₇ (Cocopeat + FYM + Vermicompost) at (175.41 g plant⁻¹), whereas the minimum fresh weight was recorded in the control T₀ (Soil) at (102.30 g plant⁻¹). The higher fresh weight under T₉ may be attributed due to the combined contribution of FYM and vermicompost, which improved nutrient availability, moisture retention and the physical condition of the growing medium, thereby promoting vegetative growth and biomass accumulation. Similar increases in plant biomass with vermicompost-amended growing media. This similar result was reported by (Lazcano and Domínguez 2011) and (Singh *et al.*, 2023) also reported higher fresh and dry biomass with soil + FYM + vermicompost compared with soil alone.

Dry weight of plant (g)

The dry weight of plant (g) was recorded and the mean values were statistically analysed. The analysis revealed a highly significant variation in mean dry weight of plant among the 12 substrate combination are presented in Table 2. The maximum dry weight was recorded in T₉ (Soil + FYM + Vermicompost) at (49.23 g plant⁻¹), which followed by T₇ (Cocopeat + FYM + Vermicompost) at (46.65 g plant⁻¹), whereas the minimum was recorded in T₀ (Soil) at (9.98 g plant⁻¹). The higher dry matter accumulation under T₉ (Soil + FYM + Vermicompost) may be attributed the improved physical condition of the growing medium and enhanced availability of essential nutrients. FYM and vermicompost improve soil structure, moisture retention, aeration and nutrient availability and promoting better root development and efficient uptake of water and nutrients. The improved nutrient supply enhances photosynthetic activity and dry matter accumulation and increase biomass production in spider plant. The similar result was supported by (Aranconet *et al.*, 2004).

Number of spiderettes

The production of spiderettes was recorded to assess the effect of different growing media on vegetative propagation of *Chlorophytum comosum*. The plants produced runners bearing young plantlets, which are commonly used for vegetative propagation and the mean values were statistically analysed. The analysis revealed a highly significant variation in mean number of spiderates among the 12 substrate combination are presented in Table 3. The maximum number of spiderettes was recorded in T₇ (Cocopeat + FYM + Vermicompost) at (23.93 plantlets plant⁻¹), which followed by T₉ (Soil + FYM + Vermicompost) at (22.45 plantlets plant⁻¹), whereas the minimum was recorded in T₀ (Soil) at (11.93 plantlets plant⁻¹). The higher spiderette production in T₇ (Cocopeat + FYM + Vermicompost) may be attributed to the favourable moisture, aeration and nutrient conditions provided by the combined organic components. In particular, vermicompost can improve nutrient availability and stimulate vegetative growth, while cocopeat provides favourable moisture retention and aeration.. The similar result was reported by (Blouin *et al.*, 2019) and (Atiyeh *et al.*, 2000)

Rooting parameter

Fresh weight of root (g)

The fresh weight of roots was recorded and different significantly among the 12 treatments and the mean values were statistically analysed. The analysis revealed a highly significant variation in mean fresh weight of root among the 12 substrate combination are presented in Table 4. The maximum fresh weight of root was recorded in T₇ (Cocopeat + FYM + Vermicompost) at (54.60 g plant⁻¹), which followed by T₆ (FYM + Vermicompost) at (50.65 g plant⁻¹), whereas the minimum was recorded in T₀ (Soil) at (15.62 g plant⁻¹). The higher root fresh weight in T₇ (Cocopeat + FYM + Vermicompost) may be attributed to the favourable combination of cocopeat, FYM and vermicompost, it provided better moisture retention, aeration and nutrient availability and promoting root development in spider plant. The similar result was reported by (Swetha *et al.*, 2014).

Dry weight of root (g)

The root dry weight was recorded and different significantly among the 12 treatments and the mean values were statistically analysed. The analysis revealed a highly significant variation in mean dry weight of root among the 12 substrate combination are presented in Table 4. The maximum dry weight of root was recorded in T₇ (Cocopeat + FYM + Vermicompost) at (5.92 g plant⁻¹), which followed by T₆ (FYM + Vermicompost) at (5.19 g plant⁻¹), whereas the minimum was recorded in T₀ (Soil) at (2.01 g plant⁻¹). The higher root dry weight in T₇ (Cocopeat + FYM + Vermicompost) may be attributed to the combined effects of improved aeration, moisture retention and nutrient availability in the growing medium. Cocopeat provides a porous and well-aerated root environment, while FYM and vermicompost supply essential nutrients and organic matter. These conditions promote vigorous root growth and efficient nutrient uptake, resulting in greater root biomass and dry matter accumulation. The similar result was reported by (Swetha *et al.*, 2014)

Length of root (cm)

The analysis revealed a highly significant variation in mean length of root among the 12 substrate combination are presented in Table 4. The maximum root length was recorded in T₇ (Cocopeat + FYM + Vermicompost) at

(24.50 cm), which followed by T₆ (FYM + Vermicompost) at (22.80 cm), whereas the minimum root length was observed in T₀ (Soil) at (11.80 cm). The greater root elongation in T₇ (Cocopeat + FYM + Vermicompost) may be attributed to the favourable physical conditions created by cocopeat, along with the nutrient supply from FYM and vermicompost. Cocopeat improves moisture retention and aeration, while vermicompost supplies nutrients and organic matter, thereby creating a favourable environment for root development. The similar result was reported by (Swetha *et al.*, 2014) and (Katoch *et al.*, 2024).

CONCLUSION

The result of the present experiment conducted on Spider Plant (*Chlorophytum comosum*) on Vertical Bio-Wall System concluded that among the evaluated treatments, T₉ (Soil + Farmyard Manure + Vermicompost, 1:1:1) exhibited the most consistent and superior vegetative performance, recording the highest plant height, leaf production, plant spread, leaf length and leaf width. The superior performance of T₉ was further reflected in maximum plant fresh weight (180.44 g) and dry weight (49.23 g), indicating greater biomass accumulation under this media combination. T₇ (Cocopeat + Farmyard Manure + Vermicompost, 1:1:1) showed pronounced superiority in below-ground development, with maximum root fresh weight (54.60 g), root dry weight (5.92 g) and root length (24.50 cm). The maximum production of (23.93 spiderettes plant⁻¹) under T₇ indicates its potential for enhancing vegetative multiplication and propagation efficiency of spider plant. The contrasting superiority of T₉ for overall vegetative biomass and T₇ for root development and spiderette production suggests that media optimization should be aligned with the specific production objective of the vertical greening system. Overall T₉ emerged as the most promising substrate combination for ornamental growth and biomass production, whereas T₇ demonstrated greater potential for root establishment and propagule production.

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Table 1: Effect of different growing media on vegetative parameter

Notation	Treatment	Plant height (cm)	Plant spread (cm) N-S	Plant spread (cm) E-W	Length of leaves (cm)	Leaf width (cm)
T ₀	Control (Soil)	25.42	34.51	30.28	24.53	2.07
T ₁	Farmyard Manure	28.18	36.63	40.57	27.05	2.28
T ₂	Cocopeat +Perlite	29.64	38.45	42.65	28.37	2.51
T ₃	Vermicompost	30.28	39.21	48.73	30.59	2.59
T ₄	Soil + Farmyard Manure	30.89	42.38	48.86	29.06	2.46
T ₅	Soil + Vermicompost	31.68	44.75	49.43	31.88	2.63
T ₆	Farmyard Manure + Vermicompost	33.54	49.14	52.97	32.60	2.73
T ₇	Cocopeat + Farmyard Manure + Vermicompost	34.13	50.26	53.07	32.34	2.79
T ₈	Soil + Cocopeat + Perlite	32.23	46.84	51.66	31.71	2.69
T ₉	Soil + Farmyard Manure + Vermicompost	36.87	54.33	56.77	35.53	3.09
T ₁₀	Soil + Cocopeat +Perlite + Farmyard Manure	32.72	47.39	52.80	31.50	2.77
T ₁₁	Soil +Cocopeat +Perlite+ Vermicompost	33.16	48.43	51.89	32.98	2.53
C.D.		2.39	3.40	3.68	2.31	0.20
SE(m)		0.81	1.15	1.25	0.78	0.06
SE(d)		1.15	1.63	1.77	1.11	0.09
C.V.		4.48	4.52	4.50	4.44	4.55

Table 2: Effect of different growing media of fresh and dry weight of plant

Notation	Treatment	Fresh weight of plant(g)	Dry Weight of plant(g)
T ₀	Control (soil)	102.30	9.98
T ₁	Farmyard Manure	110.26	14.75
T ₂	Cocopeat + Perlite	122.53	16.61
T ₃	Vermicompost	125.83	19.83
T ₄	Soil + Farmyard Manure	128.23	23.62
T ₅	Soil + Vermicompost	149.32	25.55
T ₆	Farmyard Manure + Vermicompost	174.68	43.91
T ₇	Cocopeat + Farmyard Manure + Vermicompost	175.41	46.65
T ₈	Soil + Cocopeat + Perlite	166.44	27.82
T ₉	Soil + Farmyard Manure + Vermicompost	180.44	49.23
T ₁₀	Soil + Cocopeat + Perlite + Farmyard Manure	170.21	35.42
T ₁₁	Soil + Cocopeat + Perlite + Vermicompost	171.35	40.31
	C.D.	4.83	2.49
	SE(m)	1.64	0.84
	SE(d)	2.32	1.20
	C.V.	1.92	4.98

Table 3: Effect of different growing media on vegetative parameter on number. of leaves and Spiderettes

Notation	Treatment	No. of Leaves/Plant	Number of Spiderettes
T ₀	Control (Soil)	21.62	11.93
T ₁	Farmyard Manure	26.83	13.46
T ₂	Cocopeat + Perlite	29.57	14.61
T ₃	Vermicompost	32.41	15.48
T ₄	Soil + Farmyard Manure	33.61	16.15
T ₅	Soil + Vermicompost	35.60	16.34
T ₆	Farmyard Manure + Vermicompost	38.88	20.31
T ₇	Cocopeat + Farmyard Manure + Vermicompost	39.11	23.93
T ₈	Soil + Cocopeat + Perlite	37.39	17.63
T ₉	Soil + Farmyard Manure + Vermicompost	41.92	22.45
T ₁₀	Soil + Cocopeat + Perlite + Farmyard Manure	37.85	18.52
T ₁₁	Soil + Cocopeat + Perlite + Vermicompost	38.71	18.82
	C.D.	2.63	1.36
	SE(m)	0.89	0.46
	SE(d)	1.26	0.65
	C.V. (%)	4.50	4.60

Table 4: Effect of different growing media on rooting parameters.

Notation	Treatment	Fresh Weight of Root (g)	Dry Weight of Root (g)	Length of Root (cm)
T0	Control (Soil)	15.62	2.01	11.79
T1	Farmyard Manure	21.37	3.13	12.21
T2	Cocopeat + Perlite	22.47	3.18	12.82
T3	Vermicompost	24.86	4.09	13.73
T4	Soil + Farmyard Manure	25.36	4.21	15.76
T5	Soil + Vermicompost	38.42	4.36	17.03
T6	Farmyard Manure + Vermicompost	50.65	5.19	22.80
T7	Cocopeat + Farmyard Manure + Vermicompost	54.60	5.92	24.50
T8	Soil + Cocopeat + Perlite	35.41	4.53	22.04
T9	Soil + Farmyard Manure + Vermicompost	46.81	5.14	21.62
T10	Soil + Cocopeat + Perlite + Farmyard Manure	35.62	4.77	18.75
T11	Soil + Cocopeat + Perlite + Vermicompost	42.46	5.02	19.84

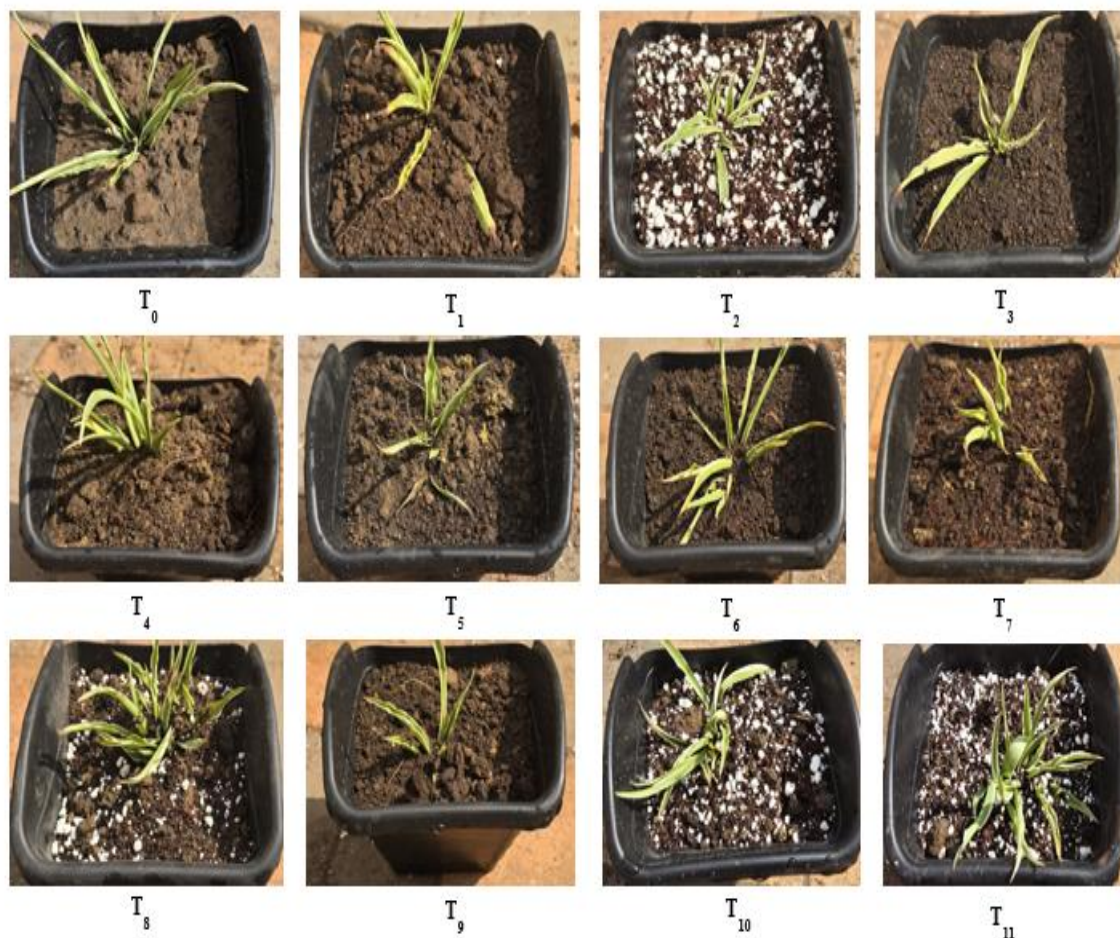


Plate.1: A view of all different growing media

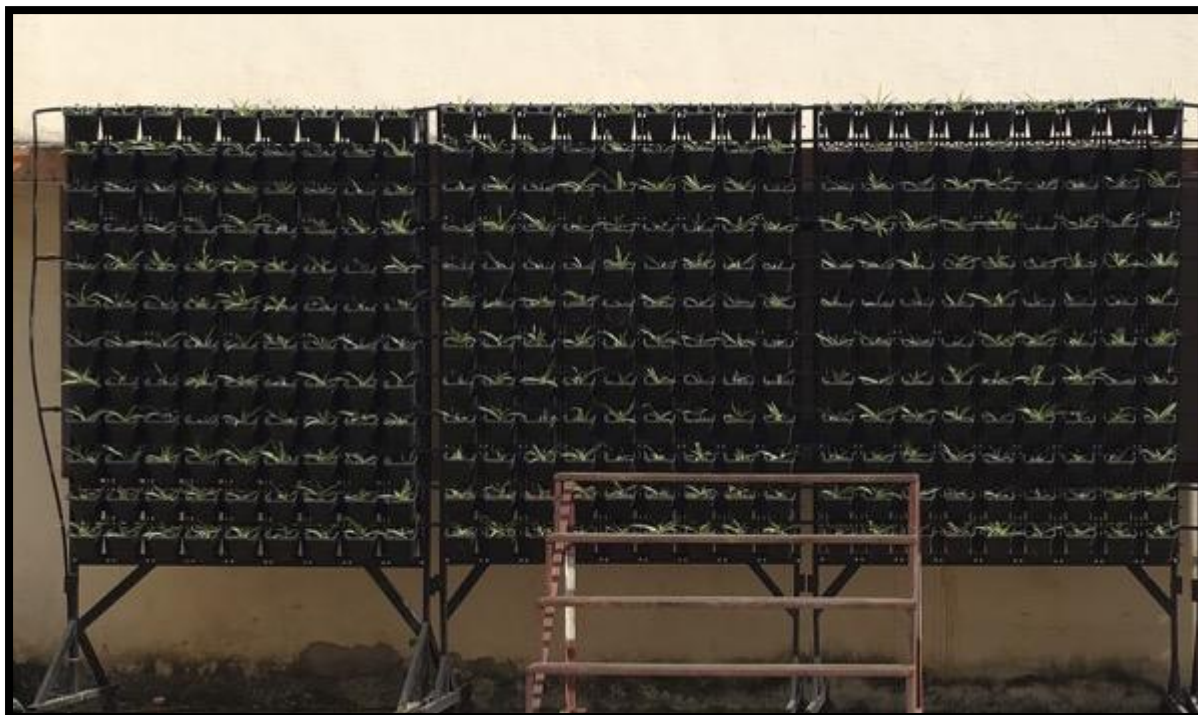


Plate 2: A view of vertical wall after installation of vertical pots.



Plate 3: A view of Spider plant after 120 days of transplanting.