Journal of Natural Sciences Research www.iiste.org
ISSN 2224-3186 (Paper) ISSN 2225-0921 (Online)
Vol.6, No.15, 2016

Assessment of Indoor Placement of Pothos (Epipremnum aureum) in Nowshera Region

JAWAD ALI[1] ANWAR RASHID[2] MOHAMMAD ILYAS[2] MUHAMMAD ALI[3]
1. Department of Agriculture, University of Swabi, Anbar, Swabi
2. Department of Horticulture, University of Agriculture, Peshawar
3. Northwest Agriculture and Forestry University, China

Abstract
An experiment entitled "Assessment of indoor placement of Pothos (Epipremnum) in Nowshera Region"was conducted at Shah house, Nowshera cantt, during the year 2015.Cuttings of Pothos (Epipremnum aureum) cv. Golden Queen were planted in clay pots which were saturated for 24 hours. Southern windows proved to be superior to Eastern, Western, Northern windows regarding plant height, number of leaves per plant, leaf size, stem diameter and root length.
Keywords: Pothos (Epipremnum aureum), leaf size, Stem Diameter, Number of leaves plant^{-1}, Plant height,

Introduction

Pothos is foliage plant commonly called "money plant ". Money plant (Epripremnum aureum) belongs to family Araceae. It is a tropical climber which is used as indoor plant when in Juvenile and intermediate stage. The adult foliage can become some 60 cm (24 inches) in length and so elderly plants will only be suited to the largest rooms. Its leaves are oval and have close resemblance with the heart. That ›s why this plant is also known as "**Heart leaved climber**" .Leaves are of different colors and sizes. There are aerial roots on its stem. This plant is propagated by cuttings as well as by layering. There are three important varieties i.e Green , Golden Queen and Marble Queen. The growth of money plant depends on many production factors i.e light, temperature, irrigation etc. It is a well –known plant due to the superstitious belief of people who think it is related with money. If plant grow vigorously they will have more money.

(Wang, 1987) reported that photosynthetic photon flux (PPF) at 290 mumol s^{-1} m^{-2} enhanced both shoot and root growth of Epipremnum aureum.Wang (1990) observed that Epipremnum aureum grown at an irradiance of 1000 umol s^{-1} m^{-2} had more but smaller leaves than those grown at an irradiance of 420 umol s^{-1} m^{-2}.(Poole *et al.,*1992) determined that Epipremnum aureum cv. Golden pothos shown better growth at 24 u mol than 12 u mol. They also observed that plant utilized more water at 24 u mol than 12 u mol.

MATERIALS AND METHODS

An experiment entitled " Where to place (Epipremnum aureum) indoor"was conducted at Shah House Nowshera Cantt during the year 2015(July-September).Cuttings of the Pothos (Epipremnum aureum) cv. Golden Queen were planted in clay pots which were saturated for 24 hours. Three cuttings were planted in each pot. The pots were filled with silt from Kabul River. Five pots were placed in each window namely Eastern, Western, Northern and Southern .The pots were placed at one foot interval from the window. All cultural practices were kept uniform. For statistical analysis Randomized complete Design was used. The data were collected on the following parameters.

1-Plant Height (cm).
2-Number of leaves per plant.
3-Leaf size (cm^2).
4- Stem diameter (cm)
5-Root length(cm).

RESULTS AND DISCUSSION

PLANT HEIGHT (CM):

The data recorded on plant height is given in Table-I.The analysis of variance shows that various sides namely Eastern, Western, Northern and Southern sides have significant effect on plant height. It is clear from the table -1 ,that maximum plant height (5.720 cm) was observed in plants grown in southern side, whereas minimum plant height (2.51cm) was observed in plants grown toward Eastern window. This may be due to geographical location of study receive more light in southern aspect as compared to other aspect and it is evaluated by Ahmad *et al.,* (2003).and light plays a vital role in plant height Daniel *et al.,* (2003)

NUMBER OF LEAVES PER PLANT

The data pertaining to the number of leaves per plant is presented in Table-1.The analysis of variance shows that the four sides under study are significantly different regarding number of leaves per plant. The table shows that

maximum number of leaves per plant (2.42) was recorded in plants grown in southern window, while minimum number of leaves per plant(0.60) were noted in plants grown in Eastern windows. This might be due to the facts that light requirement was satisfied in Southern windows and also the light duration was more, this shows the conformity with the results of Ahmed *et al.,* (2013) and light plays major role in increasing number of leaves which was best reviewed by Ashraf *et al.,* (2013).

LEAF SIZE (cm^2)

The data regarding the leaf size is given in Table-1.The data showed that maximum leaf size (17.15cm^2) was recorded in South window followed by Northern (11.65cm^2) ,western (9.822cm^2) and Eastern (3.173cm^2) windows. The analysis of variance shows that Northern, Southern and Western windows have non- significant effect on leaf size, while the effect of eastern window is significantly different from North and South. This might be due to optimum growth in Southern window, and this fact has investigated by Maren *et al.,*(2015) and leaf sized increased in more light reported by Milla *et al.,* (2007).

STEM DIAMETER (cm)

The data regarding stem diameter is given in table-1. Mean table shows that maximum stem diameter (0.47 cm)was observed in plants grown in Southern windows followed by Northern (0.29 cm),Western (0.27 cm) and Eastern (0.21 cm). This maximum stem diameter resulted in the overall vigorous growth due to maximum flow of both photosynthate, water and nutrients from the leaves and soil respectively. This might be due to the fact that southern aspects receives optimum light and this result shows conformity of results of Zubair *et al*.,(2013).and Bereau *et al.,* (2000) reported that stem growth is vigorous in optimum light

ROOT LENGTH (cm)

The data recorded on root length is given in table-1. Mean table revealed that maximum root length (12.67 cm) was recorded in plants grown in southern window, followed by Northern (7.510 cm), western (7.020 cm) and Eastern (3.566 cm). When the aerial growth is maximum, the root length will also be maximum for searching more water and nutrients for maintaining the aerial growth.This might be due to optimum growth in Southern window, and this fact has investigated by Maren *et al.,*(2015) and Ghosh *et al.,*(2015) reported that light promotes the root growth.

From the present research it is concluded that the overall growth characteristics were best in plants grown towards southern window and hence recommended for placing Pothos (Eprpremnum aureum) indoor.

Table -1

Effect of various sides on plant Height, NO. of leaves per plant, Leaf size, stem diameter and root length.

Sides	Plant Height (cm)	No. of leaves per plant	Leaf size (cm^2)	Stem diameter (cm)	Root length (cm)
East	2.510 B	0.600 B	3.173 B	0.2140 B	3.566 B
West	5.020 A	1.160 B	9.822 (AB)	0.2700 B	7.020 B
North	5.460 A	1.00 B	11.65 A	0.2960 B	7.510 B
South	5.720 A	2.420 A	17.15 A	0.4720 A	12.67 A
	LSD=2.321	LSD=0.615	LSD=8.462	LSD= 0.100	LSD=4.218

Conclusion

It is concluded that " Southern Window is the best window for growth of Pothos" on the basis of the research project.

Recommendation

On the basis of this research southern window is recommended for growth of money plant because most of the growth parameters shows better results in southern side, than other sides.

LITERATURE CITED

Ahmed M, Anjum MA, Mohib R, Naz M, Khan MR, Hussain S.2013. Characterization of indigenous barberry germplasm in Pakistan: variability in morphological characteristics and nutritional composition Fruits, Cirad/EDP Sciences, vol. 68, p. 409–422

Ashraf M, Harris PJC.2013. Photosynthesis under stressful environments: An overview Photosynthetica . 51 (2): 163-190,

Bereau M, Barigah TS, Louisanna E, Garbaye J.2000. Effects of endomycorrhizal development and light regimes on the growth of Dicorynia guianensis Amshoff seedlings Ann. For. Sci. 57 (2000) 725–733

Conover, CA, Poole RT.1992. Water utilization of six foliage plants under two interior light intensities. Journal of Environmental Horticulture. 10 (2):111-113

Falster DS, Westo M.2003. Plant height and evolutionary gamesRENDS in Ecology and Evolution Vol.18 No.7 July

Ghosh KP, Kumar T, Maiti Tk.2015. Production and Metabolism of Indole Acetic Acid in Root Nodules and Symbiont (Rhizobium undicola) Isolated from Root Nodule of Aquatic Medicinal Legume Neptunia oleracea Lour. Journal of Botany. Volume 2015 (2015), Article ID 575067, 11 pages

Maren IE, Karki S, Prajapati C, Yadav RK, Shrestha BB.2015.Facing north or south: Does slope aspect impact forest stand characteristics and soil properties in a semiarid trans-Himalayan valley?. Journal of Arid Enviroments Vol, 121 October 2015, Pages 112–123

Milla R, Reich PB.(2007). The scaling of leaf area and mass: the cost of light interception increases with leaf size Volume: 274 Issue: 1622

Wang YT. 1987. Effect of warm medium, light intensity, BA, and parent leaf on propagation of golden Pothos. Hort.Sc.22 (4) : 597-599.

Wang YT.1990. Growth substance, light, fertilizer and misting regulate propagation and growth of golden Pothos. Hort.Science.25 (12):1602-1604

Zubair A, Khan FA, Khan MU.2013. Elements of Monsoon Circulation a
nd its Behavior Impact over Pakistan European Academic Research , Vol. I, Issue 5/ Augurt,2013