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Original Article

Difference in Fresh Weight/Dry Weight of *Pennisetum Glaucum (L.) R.Br.,* Seeds in the Selected Tree Canopy Soil Related with Urban Greening in Nirmala College Campus, Coimbatore, Tamilnadu, South India

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Abstract

Over the coming decades, our cities likely face an array of associated problems, including: rising temperature, water shortages, food scarcity and increased storminess with concomitant flooding, wind damage and coastal erosion. Less favourable aspects include contribution of gardens and gardening to green house gas emission, misuse of fertilizers and pesticides and introduction of alien plant species Effective environmental planning, including urban greening, can assist greatly in improving the quality of the urban environment and the livelihoods of the people who live in urban areas. There is need to plant trees that provide multiple benefits, particularly in house compounds for providing edible pods, flowers, fruits, leaves etc. As a result of impacts associated with urban infrastructure, arborists and urban landscape managers perform remedial management actions to make urban soils more suitable plant-growing environments, remedial soil management actions include irrigation, aeration, radial trenching, mulching, and fertilization, all of which further alter the physical, chemical and biological properties and thus the nitrogen status of urban soils. In urban environments human alter these soil-forming factors by impacts associated with urban infrastructure. The aim is to improve our quality of life in an increasingly densely populated, fast-living world. People have to find back to natural and green open spaces that become more and more important for our personal development, wellbeing and recreation due to increasing urbanization. In the present study fresh weight and dry weight of *Pennisetum glaucum (L.) R.Br.,* experimented and the results were analyzed.

Keywords

Urban Greening; Tree Canopy Soil; Fresh Weight; Dry Weight; Pearl Millet.

Introduction

Cities emerge from various settings: Forests, grasslands, deserts and farmlands are consequently environmental change is highly variable. Where green material precedes urban development and there is quick reduction in vegetation and increase in exposed soil with initial clearing. Urban greening is an integrated approach to the planting, care and management of all vegetation in cities, towns, townships and informal settlements in urban and peri- urban areas. Urban green spaces play a significant role for people to have social contacts or find rest in order to achieve this inner harmony and well being. Soil contains about three times more organic carbon than vegetation and about twice as much carbon is present in the atmosphere (Batjes and Sombrook, 1997; Kumar and Nair, 2006; Dinakaran, 2008). The coming decades, our cities likely face an array of associated problems including, rising temperatures, water shortages, food scarcity and increased storminess-with continent flooding, wind damage and coastal erosion (Australian Greenhouse Office, 2006; Gleeson, 2007; Frumkin *et al.,* 2008) man activities (Sheikh and Kumar, 2010). The biomass of leaf and branch cover of each tree was calculated with the help of crown volume. Plant litter and residual quantity but also directly affected soil nutrient supply and soil properties in urban areas (Zhao and Wang, 2010). As many urban forest ecosystem services are directly related to the amount of healthy and functioning leaves, tree covers becomes a simple measure of the extent of the urban forest and consequently the magnitude of services provided by the forest. It is the management of trees for their contribution to the physiological, sociological, and

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economic well-being of urban society. Urban forestry deals with woodlands, groups of trees, and individual trees where trees bestow a great variety of benefits and problems.

Materials and Methods

Study Area

Coimbatore is a city in Tamil Nadu, South India. It is the second largest city and urban agglomeration in the Indian state of Tamil Nadu after Chennai. It is the capital city in Kongu nadu region and is often been referred to as the Manchester of south India. The city is located on the banks of the Noyyal River surrounded by the Western Ghats and is administered by the Coimbatore Municipal. Nirmala college academic campus is located in the southern parts of the Western Ghats. The total area of college campus is 20 acre. The temperature during both summer and winter varies between 28ºC to 34ºC. Soil in this area is red loamy soil which is more fertile than sandy soil. Its porosity allows high moisture retention and air circulation.

Plate 1: Study area

Plate 2: Location map

Collection of Tree Canopy Soil Samples

For the present study five different trees of different genera were selected in the college campus to find out the fresh and dry weight *Vigna radiata (L.) R. Wilczek* from the tree canopy soil. The tree canopy soil samples were collected during the year, 2013. Soil with litter formation and ground vegetation from the corners and center of the selected samples of *Butea monosperma*, (*Lamk.) Taub., Jacaranda mimosifolia, D. Don., Cassia fistula*, *Linn., Albizzia lebbeck (L), Benth., and Peltophorum pterocarpum (DC.)k. Heyne*., were collected separately in sterile bags. Barren land soil is taken from the same campus was kept as control. Soil was taken from the depth of 0-50 cm. Soil samples were packed in sterile bags, and as soon as possible returned to the laboratory and processed within 2 days.

Sample 1*:* Plate 3
Butea Monosperma, (Lamk.) Taub

Sample 2: Plate 4
Jacaranda Mimosifolia, D. Don

Sample 3: Plate 5
Cassia Fistula, Linn

Sample *4*: Plate 6
Albizzia Lebbeck, (L,)Benth

Sample 5: Plate 7
Peltophorum pterocarpum, (DC.) k.Heyne

Results and Discussion

Difference in fresh and dry weight of Pearl millet in the selected tree canopy soil were represented in Table & Chart

Difference in Fresh and Dry Weight of Pearl Millet in the Selected Tree Canopy Soil

The fresh and dry weight of Pearl millet in *Cassia fistula, Linn.,* was 6.4 and it was the highest when compared to the other samples (Chart 1).

Table 1: Difference in fresh weight / dry weight of pearl millet in the selected tree canopy soil

S. No	Sample	Difference in weight (gm)
	Control	2.8
1	*Butea monosperma*	4.2
2	*Jacaranda mimosifolia*	3.2
3	*Cassia ?stula*	6.4
4	*Albizzia lebbeck*	5.2
5	*Peltophorum pterocarpum*	3.7

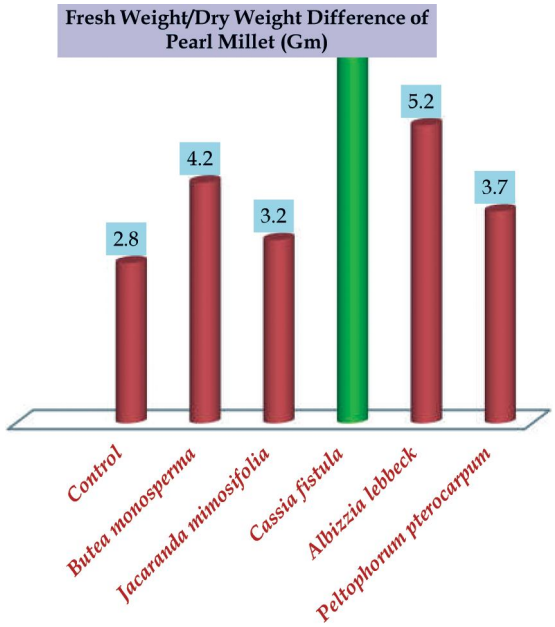

Chart 1: Difference in fresh weight / dry weight of pearl millet in the selected tree canopy soil

Appendix

Table 2: Difference in fresh weight / dry weight of pearl millet in the selected tree canopy soil List of Plates: (1-7)

Plate: 1 Study area
Plate: 2 Location map
Plate: 3 Sample 1- *Butea monosperma (Lamk.) Taub.,*
Plate: 4 Sample 2- *Jacaranda mimosifolia, D. Don.,*
Plate: 5 Sample 3- *Cassia fistula, Linn.,*
Plate: 6 Sample 4- *Albizzia lebbeck, (L,) Benth.,*
Plate: 7 Sample 5- *Peltophorum pterocarpum, (DC.) k. Heyne.,*

Chart - Difference in Fresh weight / Dry weight of Pearl millet in the selected tree canopy soil sample

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