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Sound Absorptive Behavior of Coleus forskohlii: *Plectranthus scutellarioides*

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Sound absorption properties of one of the commonly used short-lived decorative perennial plant types in Sri Lanka, Coleus forskohlii (*Plectranthus scutellarioides*), is studied. The variation of reverberation time (RT_{60}) and sound absorption coefficient (SAC - α) of the plant with the frequency of sound was obtained using the reverberation room method. The experimental setup consists of a hand-held sound analyzer (B&K 2250L), a dodecahedron Omnidirectional B&K speaker (Type 4292-L), and a power amplifier (Type 2734) consisting of an internal sound generator. Measurements were taken for plants with pots and pots alone, respectively, which were placed in the middle of the room. The room temperature and humidity were monitored throughout the experiment. The sound absorption coefficients of plants were calculated using Sabine's formulation. Measurements were taken for a set of 37, 20 and 12 pots of plants. A significant enhancement of SAC is observed due to the plants. The average SAC in the frequency range 1250 to 3150 Hz is increased from 0.166, 0.155, and 0.108 to 0.387 (56.9%), 0.329 (52.9%), and 0.299 (64.0%) due to the plants in compared to pots without plants, for the three sets of measurements with 37, 20 and 12 pots, respectively. A peak of SAC at 1250 Hz is observed in all three samples, and a hump at 2500 Hz is observed, which may be related to the morphological parameters of the plant and is under investigation at present.

Key words: *Sound barriers, reverberation time, sound absorption coefficient*

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