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Crop water requirement studies of nursery stage plants of *Pogostemon heyneanus* Benth. (Lamiaceae) under different irrigation intervals

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Pogostemon heyneanus Benth. (Lamiaceae) is cultivated to extract patchouli oil which is in high demand in the pharmaceutical, perfumery, food and beverage industries. Being a herbaceous plant it is highly sensitive to soil moisture decline resulting poor vegetative growth in nursery and field stages. Proper irrigation interval can play a major role in nurseries as it increases plant water use efficiency and productivity. The experiment was conducted with four distinct treatments of irrigation intervals; three times per day, two times per day, once a day and every other day to evaluate growth, crop coefficients and crop water requirement of nursery stage plants of *P. heneanus.* The complete randomized block design was used with five replicates. All the data collected were subjected to analysis of variance and the means were separated by Duncan's Multiple Range Test at a probability level of 0.05.The plants irrigated three times per day had the maximum growth in terms of plant height, stem diameter, number of leaves, number of branches and branch length and also it recorded the highest weekly average daily crop coefficients. The differences of weekly average daily crop coefficients in-between different irrigation intervals of two times per day, once a day and every other day were gradually reduced with the time and the reduction was not significantly contrast during sixth, seventh and eighth week of the study. The highest crop water requirement (468.73 mm) was found in plants irrigated three times per day followed by irrigation interval of two times per day (361.64 mm), irrigation interval of once a day (340.53mm) and irrigation interval of every other day (313.45 mm), respectively. Among the selected irrigation intervals, the irrigation interval of three times per day where the maximum water use was found had the best growth of plants of *P. heyneanus* during its nursery stage. In terms of cost of irrigation, practicing irrigation every other day for nurseries of *P. heyneanus* could be partially justified as the next best alternative. However, the study has to be continued further on different irrigation intervals above three times per day and below every other day before recommendations are made.

Keywords: *Pogostemon heyneanus,* Irrigation interval, crop water requirement, Lamiaceae

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