



Growth and Yeild Performance of *Withania somnifera* (Amukkara) as Affected by Phosphorous, Potassium and Potting Media

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ABSTRACT

Amukkara is most important medicinal plant grows well in dry areas of Sri Lanka. There are two varieties of *Amukkara* as local variety and Indian variety. When quality and quantity of *Amukkara* do not meet the requirement of Sri Lankan medicinal sector, large bulk of *Amukkara* from India should be imported to cater the local demand. Due to that reason, the present study was carried out to study growth and yield performance of *Amukkara*; Indian variety in Mapalana- low country wet zone under greenhouse condition using different Phosphorous and Potassium fertilizer & potting media. The experiments were conducted according to three-factor factorial Completely Randomize Design with four replicates. Two different potting mixtures (sand: top soil: compost-1:1:1 -medium 01 and 2:1:1-medium 02) were used. Fertilizer was applied as Phosphorous (recommended rate-level 01 and 50% of the recommended level-level 02) and Potassium K40 were applied 0mg/Kg, 6mg/Kg, 12mg/Kg and 18mg/Kg starting from flowering stage and continuing at one-week interval and there were 16 treatment combinations for the experiment. Plant height, number of branches per plant and number of leaves per plant were taken as growth parameters starting from 6 weeks after planting and continued with 2-week intervals. The dry weight of tap root, fresh and dry weight of the shoots were taken as yield parameters at harvesting (18 weeks). Data were analyzed by ANOVA using SAS software. Results revealed that the best treatment combination is medium 01 (sand: top soil: compost 1:1: 1) and phosphorous level 2 (50%+ recommended phosphorous level) to get the highest plant height and highest leaf growth of *Amukkara*.

Keywords: *Growth and yeild, Phosphorous, Potassium, Potting mixture, Withania somnifera*