STUDY OF NITRATE LEACHING POTENTIAL OF SOLID POTASSIUM NITRATE FERTILIZER IN COMMERCIALLY AVAILABLE COCO PEAT

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ABSTRACT

Coco peat is a good growing media component having acceptable pH, electrical conductivity and other chemical attributes. In crop planting, coco peat medium is mixed with fertilizers and nutrients according to the plant requirement. Growers of high value vegetables and orchard crops prefer to use a nitrate-based nutrient source to boost yield and quality. The objective of this experiment was to determine the fertilizer holding capacity in commercial coco peat growing medium based on raw material composition. Commercial coco peat grow bags were prepared according to the raw material composition (50:50, 60:40, 70:30, 80:20, 90:10) and those grow bags were treated with potassium nitrate 0, 5, 12.5, 25, 50, 150 g kg^{-1} representing the application rate of 0, 5, 12.5, 25, 50 and 150 g kg^{-1} respectively. Leachate was daily collected and leached potassium nitrate amount in the leachate was determined. The raw material ratios had no significant effect ($p > 0.01$) on leached amount of nitrate. However, the potassium nitrate had a significant effect ($p < 0.01$) on leached amount of nitrates. There is no interaction between raw material ratio compositions of coco peat on nitrate leaching pattern. Results of this study indicated that best potassium nitrate level, which minimize the nitrate leaching, is 22.5 g kg^{-1} (150 g kg^{-1}).

Key words: Commercial coco peat, Leaching, Raw material composition, Potassium nitrate