

Effect of P and K Provision on the Vegetative Stage of Two Functional Rice Varieties Grown on Soilless Media
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ABSTRACT

Soilless cultivation is an alternative farming system that utilizes limited planting media to increase crop yields. However, information regarding fertilization in soilless rice farming has not been studied much. This study aims to determine the response of two functional rice plants to the provision of P and K nutrients in a soilless farming system. The experiment was arranged in a completely randomized design (CRD) with two factors and four replications. The first factor was AB Mix (mixed liquid fertilizer) composition: control (without additional P and K); AB Mix + 10%P and 0,5%K; AB Mix + 15%P and 2,5%K; and lastly AB Mix + 20%P and 5% K. Each plant sample received 5 ml of basic AB Mix. The second factor was the functional rice variety consisting of Merah Bali and Watu Dodol. Research parameters include plant height, number of tillers, root length, stem diameter, and chlorophyll content. The results show that there was no interaction between rice variety and AB Mix composition in all parameters. Watu Dodol statistically had the best response on plant height of 80,18 cm. Meanwhile, AB Mix + 20%P and 5%K recorded the highest number of tillers by 21,50. Moreover, AB Mix + 10%P and 0,5%K showed the highest result in root length by 44,69 cm. It seems that the addition of P and K nutrients in soilless media can increase functional rice plant's metabolic processes related to enzymatic activity that leads to the increase of photosynthesis and cell development.

Key words: black rice, hydroponic, red rice, water media