

**Growth Response of Two Functional Rice Varieties
in a Soilless Planting System with Additional
P and K in AB Mix Fertilizer**

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ABSTRACT

The importance of consuming highly nutritious rice or functional rice has become a concern for society today. However, the decline in rice fields has encouraged various innovations such as soilless farming to be implemented. Currently, there have been only a few studies on functional soilless rice farming and its fertilizer formulations. For this reason, further research regarding this topic is required. This research examines the use of two functional rice varieties under the provision of P and K nutrients in a soilless farming system. This research was designed using a completely randomized design (CRD) with two factors and four replications. The first factor was the variety, consisting of Merah A2 and Watu Dodol, while the second factor was the provision of P and K nutrients as follows: control (AB-Mix without additional P or K); 15% P and 2.5% K; 20% P and 5% K; and 10% P. Observation parameters consisted of plant height, number of tillers, leaf chlorophyll content, and root length. The results showed that there was no interaction between the two treatment factors in all parameters observed. Individually, the Watu Dodol variety showed the greatest number on plant height (86.60 cm). On the other hand, the nutrient provision of 20% P and 5% K showed the largest number of tillers (43.00 stems) while the longest root length (89.63 cm) was found in 10% P nutrient application. Providing P and K nutrients in soilless media is thought to increase enzymatic activity, photosynthesis, and nutrient absorption so that plant height, number of tillers, and root length of rice plants, increase.

Keyword: *hydroponic, black rice, red rice, urban farming, mixed liquid fertilizer.*