

**Response of Red Rice Growth (*Oryza nivara* L.)  
on the Application of Phosphate and Potassium  
Nutrients in Soilless Cultivation**  
*Supervised by Ilham Muhklisin, S.S.T., M.Sc.*

**Siska Olyvia Anggreani**  
Study Program of Food Crop Production Technology  
Department of Agricultural Production

***ABSTRACT***

*The need for functional rice is increasing while the production is decreasing due to land conversion, so innovation in functional rice cultivation through soilless farming is needed. The purpose of this study was to assess the application of mixed liquid fertilizer (AB Mix) of P and K nutrients in soilless media in the rice vegetative stage. This experiment was designed using a completely randomized block design consisting of six treatments, namely AB Mix (control), AB Mix + 5% P, AB Mix + 10% P, AB Mix + 15% P, AB Mix + 10% P + 2,5% K, and AB Mix + 15% P + 2,5% K. The basic AB Mix level given to each plant was 300-350 ppm. This research showed that the highest number of tillers were obtained by AB Mix + 5% P, AB Mix + 15%, and AB Mix + 10% P + 2.5% K. Meanwhile, the highest numbers in plant height were obtained by AB Mix + 15% P and AB Mix + 10% P + 2.5% K. For the root length, the largest numbers were recorded in AB Mix, AB Mix + 5% P, and AB Mix + 10% P + 2.5% K. Overall, the addition of P and K tend to increase rice growth. The addition of P and K elements appears to increase cell division which causes an increase in plant height, number of tillers and root elongation due to metabolic activity associated with photosynthesis and enzyme activation.*

***Key words:*** red rice, macro-nutrients, urban farming