RESPONSE OF HYBRID AND INBRID RICE PLANTS TO NON-SOIL PLANTING MEDIA BASED ON FLOATING RAFTS SYSTEM

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ABSTRACT

The decline in rice production in Indonesia is mainly due to the conversion of rice fields into residential and industrial land. Therefore, agricultural innovations that accommodate limited land, especially in urban areas, such as urban farming are needed. This study examines the response of two rice varieties to non-soil cultivation systems based on floating raft hydroponic systems. This study used a completely randomized design with two factors. The first factor was the soil: water ratio of non-soil growing media consisting of (0:1), (4:1), (6:1), (8:1), and (10:1). The second factor was rice varieties, namely Mapan 05 and IR 64. The results of this study indicated an interaction between the two factors tested. The highest results of shoot fresh weight and root fresh weight were found in the interaction of Mapan 05 with water and husk media (4:1). Meanwhile the highest numbers of shoot dry weight and root dry weight were found in Mapan 05 with water and husk media (8:1). It is suspected that rice husk content in non-soil growing media increases dissolved oxygen of the media which then has a positive effect on rice growth. Comparably, Mapan 05 was statistically higher than IR 64 in plant height (96.72 cm), stem diameter (11.53 cm), and number of grains per panicle (205.58 g). As hybrid rice, Mapan 5 appears to be more adaptive to non-soil growing media conditions than inbred rice of IR 64.

***Keywords**: Floating raft, Non-soil farming, Rice*