Effect of Soilless Planting Media on Growth and Yield of Two Rice Varieties using Alternate Wetting-Drying Irrigation

Supervised by: Tirto Wahyu Widodo, S.P., M.P dan Ir. Damanhuri, M.P.

Sonia Budiarti
Food Crop Production Technology Study Program
Department of Agricultural Production

ABSTRACT

Indonesian rice consumption is increasing while production dwellings. Meanwhile, the increasing Indonesian population and land conversion have resulted in a decrease in the area of land and the availability of water for agriculture. Thus, it is necessary to implement agriculture that accommodates limited land and water, like soilless media and alternate wetting-drying (AWD) irrigation. This research aimed to examine the use of varieties and soilless media in rice cultivation using AWD irrigation. The experiment was conducted using a completely randomized design with two factors. Soilless media as the first factor consists of water and husks with a ratio of 1:0, 4:1, 6:1, and 8:1. Varieties as the second factor consisted of Inpari 46 and IR 64. The variables observed in this research were plant height, number of tillers, number of productive tillers, stem diameter, root length, panicle length, number of grains per panicle, and grain weight per clump. The results showed an interaction between the soilless media 1:0 and the Inpari 46 which showed the highest number of productive tillers (29.75 stems), while soilless media 6:1 and the Inpari 46 variety showed the highest yield on grain weight per clumps (34.07 g). In single factor, soilless media 4:1 statistically had the largest value for stem diameter (9.18 mm), while the Inpari 46 variety showed the highest value for plant height (88.45 cm) and the number of grains per panicle (133.07 grains). Generally, the use of soilless media 4:1 and the Inpari 46 variety showed the best result.

Keywords: *alternate wetting-drying, rice varieties, soilless media*