

## Water Management in Rice Plants of Dry Season in the Rainfed Lowland

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**Abstract :** The purpose of this study is to determine the efficiency of irrigation use on the growth and yield of two varieties of rice. Water management research on rainfed lowland rice was carried out in dry season (DS I) 2016 in an area of 10,000 m<sup>2</sup> in Bunbarat Village, Rubaru Subdistrict, Sumenep Regency. The research was randomized block design factorial with 8 treatments and repeated 3 times, ie Factor I (varieties): (a) Inpago 9, and (b) Sidenuk; factor II (irrigation): (a) Alternate Wetting and Drying, (b) intermittent, (c) submerged, and (d) inundated. The results showed that dominant weed species such as purslane (*Portulaca oleraceae* L.) and barnyard grass (*Echinochloa crusgalli*) were mostly found in rice cultivation with Alternate Wetting and Drying, intermittent and submerged irrigation treatment, while the lowest was inundated irrigation. The use of Sidenuk variety with Alternate Wetting and Drying irrigation yielded 5.7 t/ha dry grain harvest (dgh) and was not significantly different from the inundated watering using the Sidenuk variety (6.2 t/ha dgh). With Alternate Wetting and Drying irrigation technique, water use is more efficient as much as 1,503 m<sup>3</sup>/ha so as to produce 1 kg of grain, it needs 459 liters of water compared to inundated irrigation (665 liters/kg of grain). Results of analysis of rice farming Sidenuk variety with Alternate Wetting and Drying irrigation has the highest B/C ratio (2.56) so that economically feasible.

**Keywords :** water management, varieties, rice, dry season, rainfed lowland

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