ABSTRACT

EFFECT OF RICE HUSK CHARCOAL ADDITION ON THE HYDRAULIC CONDUCTIVITY OF MORTAR PIPE

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This study aimed at determining effect of rice husk (ASP) addition on the hydraulic conductivity (Ks) of mortar pipe as a means of subsurface irrigation. There are two composition of ASP mortar characterized by ratio between the volume-based cement, sand, rice husk (ASP) and water, namely 1:3:3:5 (P1) and 1:3:3:5.5 (P2). Mortar ASP was made in the shape of hollow cylinder with an outer diameter of 10 cm, an inner diameter of 7 cm and a length of 20 cm. seepage test mortar ASP using a tool such as a water-supply tube mariot mortar into the ASP. Seepage testing was conducted using a Marriot tube at 6 elevation level (head), namely 0 cm (K1), 15 cm (K2), 30 cm (K3), 45 cm (K4), 60 cm (K5), 75 cm (K6). Results showed that Ks value was 0.0035 cm/h and 0.0157 cm/hour, respectively for mortar composition P1 and P2. ASP mortar with composition P2 was recommended for subsurface irrigation due higher Ks value than the other one.

Keywords: mortar, rice husk charcoal, subsurface irrigation, hydraulic conductivity.