ABSTRACT

The Application of Drip Irrigation System on Cauliflower *(Brassica Oleracea Var. Botrytis L. Subvar. Cauliflora DC)* In a Greenhouse

By
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This research aimed to test performance of a drip irrigation system to irrigate cauliflower cultivated in a greenhouse. This research was carried out from July to November 2013 at "Sarwo Farm" Bandar Agung Kalianda, South Lampung (Geographical Position : 05°40'18,5" (SL) 105°35'24,5" (EL)) and Laboratory of Land and Water Resource Engineering Department of Agricultural Engineering, Lampung University. One Main pipe, one manifold, and four lateral pipes were from PE types with the diameter of 13 mm. Emitters as many as 315 used were regulating stick type. Two methods to deliver irrigation water were first by using a small pump; and the second by using gravitational pressure. Variables observed were emission uniformity (EU), water requirement, plant growth, and water productivity. The results showed that Emission uniformities were 64,49 % for gravitational flow and 61,46 % for pumping flow. These values were still below recommended, that is 75 % - 85 %. The minimum, maximum, and mean reference evapotranspiration (ETo) were recorded as 5,80 mm/day, 9,70 mm/day, and 7,20 mm/day. Whilst crop evapotranspiration (ETc) at the day of 41 after planted was 3.2 mm/day. Average

yield of cauliflower was 58 gram per plant, while water productivity was 0,87 gram/litter.

Keyword: Cauliflower, Crop water requirement, Drip irrigation, Emitter, Emission uniformity