ANALISIS NERACA AIR LAHAN DENGAN PEMANEN AIR HUJAN PADA KEBUN LENGKENG (*Dimocarpus longan*) DI KEBUN BUAH NAWUNGAN, DESA SELOPAMIORO, KECAMATAN IMOGIRI, KABUPATEN BANTUL, YOGYAKARTA.

ABSTRAK

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Lengkeng merupakan salah satu tanaman dengan peningkatan luas lahan yang signifikan di Indonesia**.** Tanaman lengkeng memerlukan perawatan yang memadai dari hulu hingga hilir prosesnya, khususnya irigasi untuk memenuhi kebutuhan air selama pertumbuhan tanaman. Rorak adalah salah satu upaya konservasi tanah dan air yang juga digunakan untuk menampung cadangan air irigasi. Tujuan dari penelitian ini untuk menentukan pengaruh rorak pada neraca air lahan dan menghitung kebutuhan air irigasi pada kebun lengkeng di Kebun Buah Nawungan, Desa Selopamioro, Kecamatan Imogiri, Kabupaten Bantul, DIY. Konsep peneltian ini menggunakan pendekatan neraca air pada lahan. Bahan penelitian ini adalah data iklim meliputi data curah hujan, kelembaban, radiasi sinar matahari, tekanan atmosfer, dan kecepatan angin, data posisi rorak, serta peta batas kebun lengkeng. Evapotranspirasi aktual dihitung dengan persamaan *Penman Monteith*, kemudian dikalikan dengan koefisien tanaman tanaman lengkeng untuk menghitung evapotranspirasi tanaman. Kebutuhan air irigasi didapatkan dari persamaan neraca air lahan. Penelitian ini menemukan bahwa evapotranspirasi aktual lengkeng di Kebun Nawungan adalah 5,2 mm/hari, dan evapotranspirasi tanaman lengkeng 1,52 mm/hari. Terdapat tiga buah rorak pada kebun lengkeng yag terletak di bagian hulu, tengah, dan hilir (1,2, dan 3) yang memiliki kapasitas volume masing-masing sebesar 96.886, 55.800, dan 72.964 liter. Ketiga rorak tersebut mengalami defisit pada bulan Juni hingga November sehingga membutuhkan penambahan air irigasi 3.689.871liter/tahun. Rorak 1, 2, dan 3 berperan memenuhi kebutuhan air irigasi kebun lengkeng masing-masing selama 67, 39, dan 11 hari atau 43,37% dari total kebutuhan air irigasi di lahan budidaya lengkeng.

Kata kunci: Lengkeng, Neraca Air, Irigasi, Kebutuhan Air Irigasi, Kebutuhan Air Tanaman, Rorak.

ANALYSIS OF WATER BALANCE IN LONGAN (*Dimocarpus longan*) FARMING LAND WITH RAIN HARVESTER OF NAWUNGAN ORCHARD, SELOPAMIORO, IMOGIRI SUB DISTRICT, BANTUL, YOGYAKARTA

ABSTRACT

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Longan is a fruit tree that has significant land enhancment in Indonesia. Longan needs a comprehensive maintenance, especially in fulfilling its water requirement. “Rorak” or rain harvester is a land conservation effort which can store water for irrigation. This research was conducted to determine the influence of water harvester on water balance and to calculate irrigation requirement in longan land, Nawungan Orchard, Selopamioro Village, Imogiri Sub-district, Bantul District, Special region of Yogyakarta Conceptual design of this research used water balance approached. The research material consisted of coordinates of research location, rain water harvester, and longan land boundaries, daily climate factors data includes data of rainfall, humidity, net solar radiation, atmospheric pressure, and wind speed. The evapotranspiration reference was calculated using *Penman Monteith* formulation, wich was then used to find plant evapotranspiration using longan coefficient. Irrigation water needs determined from water balance formulation for a year. From the formulation, the average of reference evapotranspiration in a year was 5,2 mm/day, and the average of plant evapotranspiration in a year was 1,52 mm/day. There were three rain water harvesters in longan land that located at the top, middle,; and the bottom of the land (first, second, and third) with each capacity 96.886, 55.800, dan 72.964 liters. All of them need 3.689.871 liters water addition for a year because of the water crysis during June to November. The first, second, and third rain water harvester have a role to fulfill the irrigation water requirements for 67, 39, and 11 days, or 43,37 % from the total the irrigation water requirements.

Keywords: Longan, Water Balance, Water Conservation, Irrigation, Rain Harvester, Irrigation Water Requirements.