

# **PENGARUH *TOTAL DISSOLVED SOLIDS* TERHADAP PERTUMBUHAN BIBIT LIDAH BUAYA PADA SISTEM HIDROPONIK (*DEEP FLOW TECHNIQUE*)**

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## **Abstract**

Lidah buaya adalah tanaman obat-obatan sukulen yang terkenal yang mengandung banyak senyawa kimia bermanfaat. Saat ini dengan semakin terbatasnya lahan pertanian diperlukan sistem pertanian alternatif yaitu pertanian tanpa tanah dengan cara hidroponik sistem *Deep Flow Technique*. Tujuan penelitian ini adalah untuk mengetahui pengaruh *Total Dissolved Solids* (TDS) larutan AB Mix terhadap pertumbuhan bibit lidah buaya dan menentukan TDS terbaik untuk pembibitan tanaman lidah buaya. Penelitian dilaksanakan di laboratorium agroteknologi dan rumah kaca Fakultas Agroindustri, Universitas Mercu Buana Yogyakarta pada ketinggian tempat 87,50 mdpl pada bulan November sampai dengan Februari 2018. Eksperimen disusun dalam rancangan acak kelompok lengkap dengan empat aras perlakuan berupa 1000 ppm, 1500 ppm, 2000 ppm dan kontrol (media padat terdiri dari tanah dan pupuk kandang). Parameter yang diamati meliputi pertambahan tinggi, pertambahan jumlah daun, lingkaran daun, pertambahan bobot tanaman, bobot daun dan bobot segar akar. Seluruh variabel pengamatan dianalisa menggunakan uji sidik ragam dan lalu *Duncan's Multiple Range Test*. Hasil menunjukkan bahwa pengaruh TDS (*Total Dissolved Solids*) pada variasi konsentrasi 1000 ppm, 1500 ppm dan 2000 ppm terhadap pertumbuhan bibit lidah buaya belum menunjukkan perbedaan yang signifikan TDS (*Total Dissolved Solids*) 2000 ppm menghasilkan pertumbuhan bibit lidah buaya yang lebih tinggi dibandingkan dengan pertumbuhan pada TDS 1000 ppm dan 1500 ppm, namun masih lebih rendah dibandingkan dengan pertumbuhan dalam media campuran tanah dan pupuk kandang 1:1.

Kata kunci : Lidah buaya, *Total Dissolved Solids*, Hidroponik, DFT.

# **THE EFFECT OF TOTAL DISSOLVED SOLIDS ON THE GROWTH OF ALOE VERA SEEDLINGS IN DEEP FLOW TECHNIQUES HYDROPONIC SYSTEM**

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## **ABSTRACT**

*. Aloe vera is a well-recognized succulent medicinal plant which contains numerous beneficial chemical compounds. Currently with the increasingly limited agricultural land required alternative farming system that is farming soilless farming among which is Deep Flow Technique (DFT) hydroponic system. The aims of the research were to study the effect of total dissolved solids (TDS) of AB Mix solution on Aloe vera seedling growth and determine the optimum TDS for its nurseries. The research was conducted in agronomy laboratory and green house of Faculty of Agroindustry , University of Mercu Buana Yogyakarta at the altitude of the place 87,50 mdpl during November – February 2018. The experiment was arranged in a Randomized Complete Block Design comprising of 4 treatment levels, of which were 1000 ppm, 1500 ppm, 2000 ppm and control (solid medium using soil and manure). The observed parameters were: (i) the increase of plant height, and number as well as diameter of leaves, (ii) the increase of weight of plant, leaves and roots. All observation variables were all analyzed by Analysis of Variance, and then if there were signifincant difference, the continued with Duncan's Multiple Range Test. The results of the research showed that there were significant effect of TDS of 1000 ppm, 1500 ppm. and 2000 ppm on the growth of Aloe vera seedling. Compared to TDS of 1000 ppm and 1500 ppm, TDS of 2000 ppm give the higher growth , although still lower compared to on mixture media soil and manure 1:1.*

**Keywords :** *Aloe vera, Total Dissolved Solids, Hydroponics, DFT.*