PENGARUH CEKAMAN ALKALIN DAN KEKERINGAN TERHADAP PERTUMBUHAN DAN KANDUNGAN SOD (Superoxide Dismutase) TANAMAN KEMANGI (*Ocimum americanum* L.)

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INTISARI

Tanaman kemangi (*Ocimum americanum*) merupakan tanaman berbau harum yang banyak dibudidayakan oleh masyarakat Indonesia karena bermanfaat dan bersifat komersial. Penelitian mengenai cekaman salinitas dan kekeringan pada tanaman kemangi yang telah dilakukan sebelumnya berpengaruh pada pertumbuhan dan perkembangan, tekanan turgor sel serta struktur anatomi tanaman kemangi. Akan tetapi, penelitian mengenai pengaruh cekaman alkalinitas dan kekeringan pada tanaman kemangi masih belum dilakukan. Oleh karena itu, penelitian ini dilakukan untuk mengetahui efek dari cekaman alkalinitas dan variasi kekeringan terhadap pertumbuhan dan kandungan *Superoxide Dismutase* (SOD) tanaman kemangi. Cekaman alkalinitas dilakukan dengan pemberian dosis dolomit (D) yang dibagi kedalam empat taraf yaitu D_1, D_2, D_3,dan D_4 (0 gr/pot, 100 gr/pot, 150 gr/pot dan 200 gr/pot) serta variasi kekeringan dibagi kedalam empat macam kapasitas lapang yaitu A_1, A_2, A_3, dan A_4 (25%, 50%, 75% dan 100%) dan dilakukan penyiraman tiga kali dalam seminggu. Parameter yang diukur adalah tinggi tanaman, panjang dan lebar daun, jumlah daun, berat basah dan kering tanaman, kandungan SOD dan parameter lingkungan. Pertumbuhan tanaman kemangi (*O. americanum*) mengalami penurunan setelah diberikan cekaman kekeringan pada tingkat kapasitas lapang 25% sedangkan kandungan SOD tanaman kemangi (*O. americanum*) yang dihasilkan dipengaruhi oleh cekaman alkalinitas dan kekeringan yang diberikan dan mengalami kenaikan sebesar 1,02% pada tingkat cekaman alkalinitas dan kekeringan tertinggi.

Kata kunci : dolomit, kekeringan, cekaman, *Ocimum americanum*, *superoxide dismutase*

EFFECTS OF ALKALINE AND DROUGHT STRESS ON GROWTH AND SOD (Superoxide dismutase) CONTENT IN BASIL PLANT (*Ocimum americanum* L.)

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ABSTRACT

Basil plant (*Ocimum americanum*) is a fragrant plant widely cultivated in Indonesian because it is useful and commercial plants. Previous research on salinity and drought stress in basil affected growth and development plant, cell turgor pressure, and the anatomical structure of the basil plant. However, research on the effect of alkalinity and drought stress in basil plants has not been carried out. Therefore, this study was conducted to determine the effect of alkaline and variations in drought stress on the growth and Superoxide Dismutase (SOD) content of basil plants. Alkalinity stress was carried out by variations of dolomite (D) doses which is divided into four levels, namely D1, D2, D3, and D4 (0 grams/pot, 100 grams/pot, 150 grams/pot, and 200 grams/pot) and variations of drought stress were divided into four types of field capacity, namely A1, A2, A3, and A4 (25%, 50%, 75%, and 100%) and watered three times a week. Parameters measured were plant height, length and width of leaves, number of leaves, fresh and dry weight, SOD content, and the environmental parameters. The growth of the basil plant (*O. americanum*) decreased after being given drought stress at a field capacity level 25%, while the SOD content of basil (*O. americanum*) produced was influenced by the treatment that given and increased by 1.02% at the highest level of alkalinity and drought stress.

Keywords : dolomite, drought, stress, *Ocimum americanum*, *superoxide dismutase*