



UNIVERSITAS  
GADJAH MADA

Pengaruh Cekaman Alkalin dan Kekeringan Terhadap Pertumbuhan dan Kandungan SOD (Superoxide

Dismutase) Tanaman Kemangi (*Ocimum americanum* L.)

ANINDITA DELLA R R, Dwi Umi Siswanti, S.Si., M.Sc.

Universitas Gadjah Mada, 2022 | Diunduh dari <http://etd.repository.ugm.ac.id/>

## DAFTAR PUSTAKA

- Ai, N. S., and A. A. Lenak. 2014. Penggulungan daun pada tanaman monokotil saat kekurangan air. *Jurnal Bioslogos* 4(2) : 48-55.
- Anggraini, N., E. Faridah, and S. Indrioko. 2015. Pengaruh Cekaman Kekeringan Terhadap Perilaku Fisiologis dan Pertumbuhan Bibit Black Locust (*Robinia pseudoacacia*). *Jurnal Ilmu Kehutanan* 9(1) : 40-56.
- Anonim. 2012. *Basil Production*. Plant Production, Directorate Communication Services Department of Agriculture, Forestry and Fisheries. South Africa. pp : 6.
- Aziz, H., G. Murtaza, M. H. Saleem, S. Ali, M. Rizwan, U. Riaz, A. Niaz, M. H. Abualreesh, and A. Alatawi. 2021. Alleviation of Chlorpyrifos Toxicity in Maize (*Zea mays* L.) by Reducing Its Uptake and Oxidative Stress in Response to Soil-Applied Compost and Biochar Amendments. *Plants* 10(2170) : 1-15.
- Barickman, T.C., B. Adhikari, A. Sehgal, C. H. Walne, K. R. Reddy, and W. Gao. 2021. Drought and Elevated Carbon Dioxide Impact the Morphophysiological Profile of Basil (*Ocimum basilicum* L.). *Crops* 1 : 118-128.
- Buchanan, B. B., W. Gruisse and R. L. Jones. 2000. *Biochemistry & Molecular Biology of Plants*. American Society of Plant Physiologists Rockville, Maryland.
- Çakmaç, R., and A. H. Milton. 2019. Effect of Inoculation with Plant-Growth Promoting Rhizobacteria on Development Root Systems of Lemon Basil (*Ocimum x citriodorum* Vis.). *Proceedings of the 2st International Conference on Food, Agriculture and Animal Sciences (ICOFAAS 2019)*: 329-336.
- Cornelissen, J.H.C., F. Sibma, R.S.P.V. Logtestijin, R.A. Broekman, and K. Thompson. 2011. Leaf pH as a plant trait: species-driven rather than soil-driven variation. *Functional Ecology* 25: 449–455.
- Forouzandeh, M., M. Fanoudi, E. Arazmjou, and H. Tabiei. 2012. Effect of drought stress and types of fertilizers on the quantity and quality of medicinal plant Basil (*Ocimum basilicum* L.). *Indian Journal of Innovations and Developments* 1(10) : 734-737.
- Hamim, K. Ashri, Miftahudin and Triadiati. 2008. Analisis Status Air, Prolin, dan Aktivitas Enzim Antioksidan Beberapa Kedelai Toleran dan Peka Kekeringan Serta Kedelai Liar. *AGRIVITA* 30(3) : 201-209.
- Handayanto, E., N. Muddarisna, and A. Fiqri. 2017. *Pengelolaan Kesuburan Tanah*. UB Press. Malang. p : 24-26; 100-102.
- Hariana, A. 2013. *262 Tumbuhan Obat dan Khasiatnya*. Penebar Swadaya. Jakarta. p : 160.



Kalve, S., D. D. Vos, and G.T.S. Beemster. 2014. Leaf development : a cellular perspective. *Frontiers in Plant Science* 5(362) : 1-25.

Khakdan, F., J. Natsiri, M. Ranjbar, and H. Alizadeh. 2017. Water deficit stress fluctuates expression profiles of 4Cl, C3H, COMT,CVOMT and EOMT genes involved in the biosynthetic pathway of volatile phenylpropanoids alongside accumulation of methylchavicol and methyleugenol in different Iranian cultivars of basil. *Journal of Plant Physiology* 218: 74–83.

Khayatnezhad, M., and R. Gholamin. 2021. The Effect of Drought Stress on the Superoxide Dismutase and Chlorophyll Content in Durum Wheat Genotypes. *Advancements in Life Sciences* 8(2) : 119-123.

Läuchli, A. and S.R. Grattan. 2012. Soil pH Extremes. *Plant Stress Physiology CAB International* 2012: 194-209.

Lestari, Y., M. Noor, and E. B. Pangaribuan. 2009. Pemberian Dolomit dan Unsur Cu, Zn Pada Cabai Merah (*Capsicum annum* L.) Di Lahan Gambut. *Prosiding Balai Penelitian Pertanian Lahan Rawa Banjarbaru* : 303-317.

Maghfoer, M. D., K. Yurlisa, N. Aini, and W. S. D. Yamika. 2019. *Sayuran Lokal Indonesia (Provinsi Jawa Timur)*. UB Press. Malang.p : 45-52.

Manurung, H., W. Kustiawan, I. W. Kusuma, and Marjenah. 2019. Pengaruh Cekaman Kekeringan terhadap Pertumbuhan dan Kadar Flavonoid Total Tumbuhan Tabat Barito (*Ficus deltoidea* Jack). *J Hort. Indonesia* 10(1) : 55-62.

Marklund, S., and G. Marklund. 1974. Involvement of the Superoxide Anion Radical in the Autoxidation of Pyrogallol and a Convenient Assay for Superoxide Dismutase. *European Journal of Biochemistry*. 47 : 469-474.

Marsha, N.D., N. Aini, and T. Sumarni. 2014. Pengaruh Frekuensi dan Volume Pemberian Air Pada Pertumbuhan Tanaman *Crotalaria mucronata* Desv. *Jurnal Produksi Tanaman* 2(8) : 673-678.

Mesa-Herrera, F., D. Quinto-Alemany, and M. Diaz. 2019. A Sensitive, Accurate, and Versatile Method for the Quantification of Superoxide Dismutase Activities in Biological Preparations. *Reactive Oxygen Species* 7(19) : 10-20.

Munawar, A. 2018. *Kesuburan Tanah dan Nutrisi Tanaman*. PT Penerbit IPB Press. Bogor. pp : 15.

Nathania, R. M., D. P. Restanto, and T. A. Siswoyo. 2015. Induksi *Polyethylene Glycol* (PEG) terhadap Karakter *Superoxide dismutase* (SOD) pada Melinjo (*Gnetum gnemon* L.). *Berkala Ilmiah PERTANIAN* : 1-5.



Nelissen, H., N. Gonzalez, and D. Inze. 2016. Leaf growth in dicots and monocots: so different yet so alike. *Current Opinion in Plant Biology* 33:72–76.

Pallardy, S. G. 2008. *Physiology of Woody Plant*. Elsevier. UK. p : 107-115.

Pantin, F., T. Simonneau, and B. Muller. 2012. Coming of leaf age: control of growth by hydraulics and metabolics during leaf ontogeny. *New Phytologist* 196: 349–366.

Preedy, V. R. 2016. *Essential Oil in Food Preservation, Flavor and Safety*. Elsevier. UK.p : 231-232.

Putra, I., Jasmi, and O. Setiawan. 2018. Pengaruh Pemberian Dolomit dan Pemupukan NPK Terhadap Pertumbuhan dan Hasil Okra (*Abelmoschus esculentus* L.). *Jurnal Agrotek Lestari* 5(2) : 47-60.

Rayes, M. L. 2017. *Morfologi dan Klasifikasi Tanah*. UB Prees. Malang. pp : 166.

Sarker, U., and S. Oba. 2018. Catalase, superoxide dismutase and ascorbate-glutathione cycle enzymes confer drought tolerance of *Amaranthus tricolor*. *Scientific Reports* 8(16496) : 1-12.

Shen, Y., J. Li, R. Gu, L. Yue, H. Wang, X. Zhan, and B. Xing. 2018. Carotenoid andsuperoxide dismutase are the most effective antioxidants participating in ROS scavenging in phenanthrene accumulated wheat leaf. *Chemosphere* 197 : 513-525.

Sorousmehr, A., J. Arbabi, and M. R. Asgharipour. 2014. Effect of Drought Stress Levels and Organic Manures on Yield, Essential Oil Content and Some Morphological Characteristics of Sweet Basil (*Ocimum basilicum*). *Advances in Environmental Biology* 8(4) : 880-885.

Siswanti, D. U. 2010. Plant Response and Nitrate Reductase Activity In Vivo On Rice (*Oryza sativa* L.) Cultivars IR-64 To Biofertilizer Application and Drought. *Thesis*.

Siswanti, D. U., M. D. Anggoro, D. Rachmawati, Maryani, and V. Fatonah. 2016. Physiological response of mangrove ecosystem to the conservation of Teluk Adang Sanctuary in East Kalimantan, Indonesia. *AIP Conference Proceedings* 1744(020015) : 1-5.

Solichatun, E. Anggarwulan, and W. Mudyantini. 2005. Pengaruh Ketersediaan Air terhadap Pertumbuhan dan Kandungan Bahan Aktif Saponin Tanaman Ginseng Jawa (*Talinum paniculatum* Gaertn.). *Biofarmasi* 3(2) : 47-51.

Sopandie, D. 2013. *Fisiologi Adaptasi Tanaman Terhadap Cekaman Abiotik Pada Agroekosistem Tropika*. PT Penerbit IPB Press. Bogor. pp : 3.

Stephenie, S., Y.P. Chang, A. Gnanasekaran, N. M. Esa, and C. Gnanaraj. 2020. An insight on superoxide dismutase (SOD) from plants for mammalian health enhancement. *Jurnal of Functional Foods* 68(103917) : 1-10.

Sucayyo and S. Kasmiyati. 2018. Respon Enzim Antioksidatif *Sonchus oleraceus* Terhadap Cekaman Krom Pada Media Tanam Berbeda. *Jurnal Biologi Indonesia* 14(1) : 51-59.



**Pengaruh Cekaman Alkalin dan Kekeringan Terhadap Pertumbuhan dan Kandungan SOD  
(Superoxide Dismutase) Tanaman Kemangi (*Ocimum americanum* L.)**

ANINDITA DELLA R R, Dwi Umi Siswanti, S.Si., M.Sc.

UNIVERSITAS GADJAH MADA Universitas Gadjah Mada, 2022 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Syachrom, S. H. 2019. Kajian Beberapa Sifat Kimia Tanah Pada Tanah Sawah di Berbagai Lokasi di Kota Palembang. *SYLVA* VIII(2) : 60-65.

Utomo, M., Sudarsono, B. Rusman, T. Sabrina, J. Lumbaraja, and Wawan. 2016. *Ilmu Tanah Dasar-dasar dan Pengelolaan*. Penerbit Kencana. Jakarta. p : 106-110; 184-188.

Widodo. 2000. Pupuk yang Akrab Lingkungan. *Majalah Komoditas Edisi Khusus Tahun II*, 3-26 Januari 2000.

Widowati, W., R. Safitri, R. Rumumpuk and M. Siahaan. 2005. Penapisan Aktivitas Superoksid Dismutase pada Berbagai Tanaman. *Jurnal Kesehatan Maranatha* 5(1): 32-46.

Wierdak, R. N. 2011. Sweet Basil (*Ocimum basilicum* L.) Flowering Affected By Foliar Nitrogen Application. *Acta Agrobotanica* 64 (1): 57–64.

Wiktrop (Weed Identification and Knowledge in the Tropical and Mediterranean areas). 2021. *Ocimum americanum* L. <https://portal.wiktrop.org/species/show/220>. Diakses tanggal 9 Desember 2021 3:26 PM.

Zhang, H., X.L. Liu, R.X. Zhang, H.Y. Yuan, M.M. Wang, H.Y. Yang, H.Y. Ma, D. Liu, C.J. Jiang, and Z.W. Liang. 2017. Root Damage under Alkaline Stress Is Associated with Reactive Oxygen Species Accumulation in Rice (*Oryza sativa* L.). *Frontiers in Plant Science* 8(1580) : 1-12.