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DAFTAR PUSTAKA

Albano, J.P., W.B. Miller, dan M.C. Halbrooks. 1996. Iron toxicity stress causes bronze speckle, a specific physiological disorder of marigold *(Tagetes erecta* L.). J. Am. Soc. Hort. Sci. 121: 430-437.

Allen, V.G. dan D.L. Robinson. 1980. Occurrence of Al and Mn^{2+} in grass tetany cases and their effects on the solubility of Ca2+ and Mg2+ in vitro. Journal Agronomy 72: 957-960.

Alnopri, M. Taufik, D.W. Ganefianti, Prasetyo dan Mukhtasar. 2004. Modifikasi rancangan dialil untuk mendapatkan kopi arabika unggul berdasarkan aktivitas nitrat reduktase. Jurnal Akta Agrosia 7 (2): 47-51.

Andrew, C.S. dan W.H.J. Pieters. 1976. Foliar symptoms of mineral disorders in *Glycine wightii*. CSIRO Australian Div. Trop. Agron. Tech. Paper no. 18: 1-12.

Anonim. 1998. Comparison study of four magnesium fertilizers on oil palm. Agriculture Research PT SMART Corporation. One Day Seminar: The Application of Dolomit as Substitution to Kieserite in Oil Palm. PORIM Malaysia, 27 November 1998.

Anonim. 2016. Bahan Tanam PPKS. http://www.iopri.org/varietas.html. Diakses tanggal 31 Januari 2016.

Anwar, S. 2003. Toleransi morfologi dan fisiologi tanaman rumput pakan terhadap cekaman aluminium. J.Indon.Trop.Anim.Agric. 28(1): 19-26.

Balai Penelitian Tanah. 2009. Petunjuk Teknis Analisis Kimia Tanah, Tanaman, Air dan Pupuk. Balai Penelitian Tanah, Bogor.

Benette, J.P. 1945. Iron in leaves. Soil Sci 60: 91-106.

Berger, K.C. dan G.C. Gerloff. 1947. Manganese toxicity of potatoes in relation to strong soil acidity. Soil Sci. Soc. Am. Proc. 12: 310-314.

Clark, R.B. 1982. Plant response to mineral element toxicity and deficiency, pp. 71-142. In: M.N. Christiansen and C.F. Lewis (eds.), Breeding Plants for Less Favorable Environments. John Wiley & Sons, New York, NY.

Comb, J.I., Long, S.I. dan Scurlock, J. 1985. Techniques in Bioproductivity and Photosynthesis. Pergamon Press, Oxford.

Corley, R.H.V. dan Tinker, P.B. 2010. The Oil Palm. 4^{th} ed. Blackwell Science, United States of America.

De Vos, W. dan Tarvainen T. 2006. Geochemical Altas of Europe. Part 2 Interpretation of Geochemical Maps, Additional Tables, Figures, Maps and Related Publications. ISBN 951-690-960-4 (electronic version).

UNIVERSITAS
GADJAH MADA
TANGGAPAN FISIOLOGIS DAN PERTUMBUHAN BIBIT KELAPA SAWIT (Elaeis guineensis Jacq.) TERHADAP CEKAMAN MANGAN
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Universitas Gadjah Mada, 2018 | Diunduh dari http://etd.repository.ugm.ac.id/

Dienelt, M.M. dan Lawson, R.H. 1991. Chrysanthemum foliar necrosis: transmission electron microscopy of leaf lesions. Phytopathology 81: 1079-1087.

Ditjenbun. 2016. Buku Statistik Kelapa Sawit (Palm Oil) 2015-2017. <ditjenbun.pertanian.go.id/tinymcpuk/gambar/file/statistik/.../Kelapa-Sawit-2015-2017.pdf>. Diakses tanggal 31 Januari 2018.

Dube, A., R. Zbytniewski, T. Kowalkowski, E. Cukrowska, dan B. Buszewski. 2001. Adsorption and migration of heavy metals in soil. Polish Journal of Enviromental Studies, 10(1): 1-10.

Edwards, D. G. dan C.J. Asher. 1982. Tolerance of crop and pasture species to manganese toxicity. Pages 145-150 *in* A. Scaife (ed.), Proc. Ninth Intl. Plant Nutrition Colloq. 1: 22-27.

Epstein, E. 1961. Mineral metabolism of halophytes. pp. 345-353. In: I. H. Rorison (ed.), Ecological Aspects of the Mineral Nutrition of Plants. Blackwell Publishers, Oxford, Edinburg, UK.

Fahn. 1991. Anatomi tumbuhan. Universitas Gajah Mada Press, Yogyakarta.

Fauzi, Y., Y.E. Widyastuti., I. Satyawibawa dan R. Hartono. 2003. Kelapa Sawit. Penebar Swadaya, Jakarta.

Fauzi, Y., Y.E. Widyastuti, I. Satyawibawa, dan R. Hartono.2008. Budidaya Pemanfaatan Hasil dan Limbah Analisis Usaha dan Pemasaran Edisi Revisi. Penebar Swadaya, Jakarta.

Ferdinand. 2007. Praktis Belajar Biologi. Visindo Media Persada, Jakarta.

Ferwerda, J.D. 1977. Oil Palm in Alvim, P de T dan T.T. Kozlowski (ed.). Ecophysiology of Tropical Crops. Acad. Press. New York. pp. 351- 382.

Fikri, M.S., I. Didik, dan T.S.P. Eka. 2015. Pengaruh pemberian kompos limbah media tanam jamur pada pertumbuhan dan hasil kangkung darat. Vegetalika (4)2: 79-89.

Foy, C.D. 1973. Manganese and plants. Pages 51-76 *in* Manganese. Natl. Acad. of Sci. Natl. Res. Counc, Washington.

Foy, C.D., R.L. Chaney, dan M.C. White. 1978. The physiology of metal toxicity in plants. Annu. Rev. Plant Physiol. 29: 511-567.

Foy, C.D., R.R. Weil, dan C.A. Coradetti. 1995. Differential manganese tolerances of cotton genotypes in nutrient solution. J. Plant Nutr. 18: 685-706.

Gardner, F.P., R.B. Pearce, dan R.L. Mitchell. 1991. Physiology of Crop Plants. UI Press, Jakarta.

Gerretsen, F.C. 1950. Manganese in relation to photosynthesis. III. Uptake of oxygen by illuminated crude chloroplast suspensions. Plant Soil 2: 323-342.

UNIVERSITAS
GADJAH MADA
TANGGAPAN FISIOLOGIS DAN PERTUMBUHAN BIBIT KELAPA SAWIT (Elaeis guineensis Jacq.) TERHADAP CEKAMAN MANGAN
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Universitas Gadjah Mada, 2018 | Diunduh dari http://etd.repository.ugm.ac.id/

Guleryuz, G. dan H. Arslan. 1998. Nitrate reductase activity in *verbascum l.* (scrophulariaceae) species from the eastern mediterranean in dependence on altitude. Tr. J. of Botany 23: 89 - 96.

Hartley, C.W.S. 1977. The Oil Palm. Longman Inc. New York. 806p.

Haryanti, Sri. 2010. Distribusi Stomata Pada Daun Beberapa Spesies Tanaman Dikotil dan Monokotil. UNDIP, Semarang.

Heenan D.P. dan L.C. Campbell. 1981. Influence of potassium and manganese on growth and uptake of magnesium by soybean (*Glycine max* (L) Merr. Cv. Bragg). Plant Soil 61: 447-456.

Hindersah, Reginawanti, A. Marthin Kalay, dan B.S. Muntalif. 2004. Akumulasi Pb dan Cd pada buah tomat yang ditanam di tanah mengandung lumpur kering dan instalasi pengolahan air limbah domestik. Seminar Nasional dan Kongres Perhimpunan Ahli Teknologi Pangan Indonesia. ISBN: 979-99965-0-3. Jakarta, 17-18 Desember 2004. P: 142-145.

Horiguchi, T. 1988. Mechanism of manganese toxicity and tolerance of plants. VII. Effect of light intensity on manganese-induced chlorosis. J. Plant Nutr. 11: 235-246.

Horst, W.J. 1988. The physiology of Mn toxicity. pp. 175-188. In: R.D. Graham, R.J. Hannam, and N.C. Uren (eds.), Manganese in Soils and Plants. Kluwer Academic Publishers, Dordrecht, The Netherlands.

Hoyt, P.B. 1988. The relationship of internal bark necrosis in Delicious apples to tree characteristics and soil properties. Commun. Soil Sci. PI. Anal. 19(7-12): 1041-1048.

Hurley, L.S. dan Keen, C.L., 1987. Manganese. In: W. Mertz (Ed.), Trace elements in human and animal nutrition. Academic Press, Inc, New York, 185-223.

Jacobson, H.G.M. dan T.R. Swanback. 1932. Manganese content of certain Connecticut soils and its relation to the growth of tobacco. J. Am. Soc. Agron. 24: 237-245.

Johnson, M.O. 1917. Manganese as a cause of the depression of the assimilation of iron by pineapple plants. Ind. Eng. Chem. 9: 47-49.

Jones, R.K. dan H.J. Clay. 1976. Foliar symptoms of nutrient disorders in Townsville stylo *(Stylosanthes humilis).* CSIRO Austral. Div. Trop. Agron. Tech. Paper No. 19: 1-11.

Kabata-Pendias, A. dan H. Pendias. 2001. Trace Elements in Soils and Plants. Third Edition. CRC Press LLC. Boca Raton-Florida. 311p.

Kabata-Pendias A., 2001. Trace elements in soils and plants. CRC Press, Inc., Boca Raton, Florida, 413p.

UNIVERSITAS
GADJAH MADA
TANGGAPAN FISIOLOGIS DAN PERTUMBUHAN BIBIT KELAPA SAWIT (Elaeis guineensis Jacq.) TERHADAP CEKAMAN MANGAN
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Universitas Gadjah Mada, 2018 | Diunduh dari http://etd.repository.ugm.ac.id/

Kang, B.T. dan R.L. Fox. 1980. A methodology for evaluating the manganese tolerance of cowpea (Vigna *unguiculata)* and some preliminary results of field trials. Field Crops Res. 3: 199-210.

Kasraci, R., H. Rodriguez-Barrucco, dan M.I. Arrayo. 1996. The effect of Al and Mn on growth and mineral composition of *Casuarina equisetifolia* Forst.

Kasraei, R., C. Rodriguez-Barrueco, dan M.I. Arroyo. 1996. The effect of Al and Mn on growth and mineral composition of *Casuarina equisetifolia* Forst. C. Rodriguez-Barrueco (ed.), Fertilizer and Environment: 75-81.

Kvyatkovskii, D.F. 1988. The effect of trace element on nitrate reductase activity and chlorophyll content in maize leaves under irrigatioin. Fiziol. Biokhim. Kult. Rast. 20(1): 39-42.

Lakitan, B. 1993. Dasar–Dasar Fisiologi Tumbuhan. PT. Raja Grafindo Persada, Jakarta.

Lee, C. R. dan M.I. McDonald. 1978. Influence of soil amendments on potato growth, mineral nutrition and tuber yield and quality in very strongly acid soils. Soil Sci. Soc. Amer. J. 41: 573-577.

Lei, Y., H. Korpelainen dan C. Li. 2007. Physiological and biochemical responses to high Mn concentrations in two contrasting *Populus cathayana* populations. Chemosphere 68: 686-694.

Li. Q., Li-S. Chen, H.X. Jiang, N. Tang, L.T. Yang, Z.H. Lin, Y. Li, dan G.H. Yang. 2010. Effects of manganese-excess on CO_2 assimilation, riboluse-1.5-biphosphate carboxylase/oxygenase, carbohydrates and photosynthetic electron transport of leaves, and antioxidant systems of leaves and roots in *Citrus grandis* seedlings. BMC Plant Biology 10: 1-16.

Lubis, A.U. 1992. Kelapa Sawit (Elaeis guineensis Jacq.) di Indonesia. Pusat Penelitian Marihat – Bandar Kuala, Pematang Siantar.

Luis, Z.G., K.M.G. Bezzera dan J.E. Scherwinski-Pereira. 2010. Adaptability and leaf anatomical features in oil palm seedling produced by embryo rescue and pre germinated seeds. Brazilian Journal Plant Physiology 22: 209-215.

Macfie, S.M. dan Taylor, G.J. 1992. The effects of excess manganese on photosynthetic rate and concentration of chlorophyll in Triticum aestivum grown in solution culture. Physiologia Plantarum 85: 467-475.

Mangoensoekarjo, S. dan H. Semangun, 2003. Manajemen Agribisnis Kelapa Sawit. UGM Press, Yogyakarta.

Marcelis, L.F.M., E. Heuvelink dan J. Goudriaan. 1998. Modelling biomass production and yield of horticultural crops. Journal of Sci Hortic 74(1): 83-11.

Marschner, H. 1986. Mineral nutrition of higher plants. Academic Press, New York.

UNIVERSITAS
GADJAH MADA
TANGGAPAN FISIOLOGIS DAN PERTUMBUHAN BIBIT KELAPA SAWIT (Elaeis guineensis Jacq.) TERHADAP CEKAMAN MANGAN
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Universitas Gadjah Mada, 2018 | Diunduh dari http://etd.repository.ugm.ac.id/

Marsh, H.V., H.J. Evans dan G. Matrone. 1963. Investigations of the role of iron in chlorophyll metabolism: effect of iron deficiency on chlorophyll and heme content and on the activities of certain enzyme in leaves. Plant Physiology: 632-638.

Maryani, A.T. 2012. Pengaruh volume pemberian air terhadap pertumbuhan bibit kelapa sawit di pembibitan utama. Jurnal Agraria (1) 2: 64-74.

McLennan, S.M. dan Taylor, S.R., 1999. Earth's continental crust. In: C.P. Marshall & R.W. Fairbridge (Eds.), Encyclopedia of Geochemistry. Kluwer Academic Publishers, Dordrecht, Germany, 145-150.

Menten, J., E. Malavolta, J.C. Sabino, A.A. Veiga dan N.A. Tulmann. 1981. Virus like abnormality in the bean plant *(Phaseolus vulgaris* L.) induced by manganese toxicity. Fitopatol. Bras. 6(2): 179-185.

Millaleo, R., M. Reyes-Diaz, A.G. Ivanov, M.L. Mora dan M. Alberdi. 2010. Manganese as essential and toxic element for plants: transport, accumulation and resistance mechanism. Journal Soil Science Plant Nutrition 10: 476-494.

Millaleo, R., M. Reyes-Diaz, M. Alberdi, A.G. Ivanov, M. Krol dan N.P.A. Huner. 2013. Excess manganese differentially inhibits photosystem I versus II in *Arabidopsis thaliana*. Journal of Experimental Botany 64: 343-354.

Miller, S.S. dan D.E. Schubert. 1977. Plant manganese and soil pH associated with internal bark necrosis in apple. Proc. W.Va. Acad. Sci. 49: 97-102.

Moroni, J.S., Briggs, K.G. dan Taylor, G.J. 1991. Chlorophyll content and leaf elongation rate in wheat seedlings as a measure of manganese tolerance. Plant and Soil 136: 1-9.

Morris, H.D. dan W.H. Pierre. 1949. Minimum concentrations of manganese necessary for injury to various legumes in culture solutions. Agron. J. 41: 107-112.

Muklis. 2007. Analisis Tanah dan Tanaman. Universitas Sumatera Utara Press, Medan.

Mukhopadhyay dan Sharma. 1991. Manganese in cell metabolim of higher plants. The Botanical Review 57(2): 118-131.

Nable, R.O. dan J.F. Loneragan. 1984. Translocation of manganese in subterranean clover *(Trifolium subterraneum* L. cv Seaton Park). I. Redistribution during vegetative growth. Austral. J. Pl. Physiol. 11: 101-111.

Neil. 2002. Biologi. Penerbit Erlangga, Jakarta.

Noggle GR, Fritz GI. 1983. Introductory to plant physiology. Prentice-Hall, New Jersey.

UNIVERSITAS
GADJAH MADA
TANGGAPAN FISIOLOGIS DAN PERTUMBUHAN BIBIT KELAPA SAWIT (Elaeis guineensis Jacq.) TERHADAP CEKAMAN MANGAN
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Universitas Gadjah Mada, 2018 | Diunduh dari http://etd.repository.ugm.ac.id/

Notton, B.A. 1983. Micronutrients and nitrate reductase. Pages 219-239 *in* D. A. Robb dan W. S. Pierpoint (eds.), Metals and micronutrients: Uptake and utilization by plants. Academic Press, New York.

Nugroho, T.C, Oksana, dan E. Aryanti. 2013. Analisis sifat kimia tanah gambut yang dikonversi menjadi perkebunan kelapa sawit di kabupaten kampar. Jurnal Agroteknologi 4(1): 25-30.

Ohki, K., F.C. Boswell, M.B. Parker, L.M. Shaman dan D.O. Wilson. 1979. Critical manganese deficiency level of soybean related to leaf position. Agron. J. 71: 233-234.

Ohki, K., D.O. Wilson dan O.E. Anderson. 1981. Manganese deficiency and toxicity sensitivities of soybean cultivar. Agron. J. 72: 713-716.

Ohki, K. 1984. Manganese deficiency and toxicity effects on growth, development and nutrient composition in wheat. Agron. J. 76: 213-218.

Ostonen, I., U. Puttsepp, C. Biel, O. Alberton, M.R. Bakker, K. Lohmus, H. Majdi, D. Metcalfe, A.F. Olsthoorn, A. Pronk, E. Vanguelova, M. Weith dan I. Brunner. 2007. Specific root length as an indicator of environmental change, Plant Biosystems – An International Journal Dealing with all Aspects of Plant Biology 141: 426-442.

Pahan, I., 2006. Panduan Lengkap Kelapa Sawit. Cetakan Kelima. Penebar Swadaya, Jakarta.

Pahan, I. 2008. Panduan Lengkap Kelapa Sawit. Penebar Swadaya, Jakarta.

Petolino, J.F. dan G.B. Collins. 1985. Manganese toxicity in tobacco *(Nicotiana tabacum* L.) callus and seedlings. J. PI. Physiol. 118: 139-144.

Poeloengan, Z. 1993. Oil palm growth on high Ni soils in 1993 Porim International Palm Oil Congress. Kuala Lumpur, 20-25 September 1993.

Price, A, dan B. Courtois. 1991. Mapping QTLs Associated with Drought Resistance in Rice; Progress Problem and Prospect. Los Banos: International Rice Research Institute.

Puranik R.M. dan Srivastava H.S. 1985. Increase in nitrate reductase activity in bean leaves by light involves a regulator protein. Agric Biol Chem 49 (7): 2099-2104.

Reimann, C. dan de Caritat P., 1998. Chemical elements in the environment - Factsheets for the geochemist and environmental scientist. Springer-Verlag, Berlin-Heidelberg, 398 pp.

Restiani, R., S. Triyono, S. Tusi, dan R. Zahab. 2015. Pengaruh jenis lampu terhadap pertumbuhan dan hasil produksi tanaman selada (*Lactuca sativa L*) dalam sistem hidroponik *indoor*. Jurnal Teknik Pertanian Lampung 4 (3): 219-226.

Roswanti, P., M. Ghulamahdi, dan N. Khumaida. 2015. Respon anatomi dan fisiologi akar kedelai terhadap cekaman kekeringan. Jurnal Agronomi Indonesia 43: 186-192.

Salisbury F.B dan C.W. Ross. 1995. Fisiologi tumbuhan. Jilid 2. Penerbit ITB, Bandung.

UNIVERSITAS
GADJAH MADA
TANGGAPAN FISIOLOGIS DAN PERTUMBUHAN BIBIT KELAPA SAWIT (Elaeis guineensis Jacq.) TERHADAP CEKAMAN MANGAN
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Universitas Gadjah Mada, 2018 | Diunduh dari http://etd.repository.ugm.ac.id/

Santamaria, A.B. 2008. Manganese exposure, essentiality, toxicity. Indian Journal Med Res (128): 484-500.

Sasongko, P.E. 2010. Studi kesesuaian lahan potensial untuk tanaman kelapa sawit di kabupaten blitar. Jurnal Pertanian MAPETA (12): 1411-2817.

Scibisz, K. dan A. Sadowski. 1979. Internal bark necrosis in Stark Crimson Delicious apple trees in relation to mineral nutrition. Gartenbauwissenschaft 44: 177-181.

Setyamidjaja, D., 1991. Budidaya Kelapa Sawit. Kanisius, Yogyakarta.

Setyatmidjaja, D. 2006. Kelapa Sawit Teknik Budidaya, Panen, dan Pengolahan. Kanisius, Yogyakarta.

Shomers, I.I. dan J.W. Shive. 1942. The Iron-Manganese relation in plant metabolism. Journal Series paper of the New Jersey Agricultural Experiment Station, Rutgers University, Department of Plant Physiology. 58

Shomers, I.I. dan J.W. Shive. 1942. The iron-manganese relation in plant metabolism. Plant Physiology 17: 582-602.

Sianturi, H. S. D., 1991. Budidaya Tanaman Kelapa Sawit. USU Press, Medan.

Silva, D.M., N.D.S. Fonte, K.R.D. Souza, I. Rodrigues-Brandao, I.T. Libeck dan J.D. Alves. 2017. Relationship between manganese toxicity and waterlogging tolerance in *Zea mays* L. Cv. Saracura. Acta Scientiarum 39: 75-82.

Sitompul, S.M dan B. Guritno. 1995. Analisis Pertumbuhan Tanaman. Gadjah Mada University Press, Yogyakarta.

Sunarko. 2007. Petunjuk Praktis Budidaya dan Pengolahan Kelapa Sawit. Agromedia Pustaka, Jakarta.

Sulaeman, Suparto, dan Eviati. 2005. Analisis Kimia Tanah, Tanaman, Air, dan Pupuk. Balai Penelitian Tanah, Bogor.

Snyder, C.S. dan T.W. Bruulsema. 2002. Nutrients and environmental quality. Better Crops 86(2): 15-17.

Stevenson, F.J. 1976. Stability constants of Cu complexes with humic acids. Soil Science Society of America Journal 40: 665-672.

Tengoua, F.F., M.M. Hanafi, A.S. Idris dan S.R. Syed-Omar. 2015. Screening for optimum concentrations of boron, copper, and manganese for the growth of three-month old oil palm seedling in solution culture. Journal Tropical Agricultural Science Pertanika 38: 113-126.

UNIVERSITAS
GADJAH MADA
TANGGAPAN FISIOLOGIS DAN PERTUMBUHAN BIBIT KELAPA SAWIT (Elaeis guineensis Jacq.) TERHADAP CEKAMAN MANGAN
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Universitas Gadjah Mada, 2018 | Diunduh dari http://etd.repository.ugm.ac.id/

Terry, N., Evans, P.S. dan Thomas, D.E. 1975. Manganese toxicity effects on leaf cell multiplication and expansion and on dry matter yield of sugar beets. Crop Science 15: 205-208.

Tjionger's, M. 2009. Pentingnya menjaga keseimbangan unsur hara makro dan mikro untuk tanaman. http://www.tanindo.com/abdi12/hal1501.htm. Diakses tanggal 13 Januari 2018.

Touria El-Jaoual dan A.C. Douglas. 1998. Manganese toxicity in plants. Journal of Plant Nutrition 21(2): 353-386

Verheye, W. 2010. Growth and Production of Oil Palm. Land Use, Land Cover and Soil Sciences. Encyclopedia of Life Support System (EOLSS), UNESCO-EOLSS Publishers. Oxford, United Kingdom.

Woittiez, L.S., M.T. van Wijk, M. Slingerland, M. Van Noordwijk dan K.E. Giller. 2017. Yields gaps in oil palm: a quantitative review of contributing factors. European Journal of Agronomy 83: 57-77.

Wright, R.J., V.C, Baligar dan S.F. Wright. 1988. Estimation of plant available manganese in acidic subsoil horizons. Commun. Soil Sci. Pl. Anal. 19(6): 643-662.

Wu, S. 1994. Effect of manganese excess on the soybean plant cultivated under various growth conditions. Journal of Plant Nutrition. 17: 993-1003.

Xue, S.G., Y.X. Chen, R.D. Reeves, A.J.M. Barker, Q. Lin, dan D.R. Fernando. 2004. Manganese uptake and accumulation by the hyperaccumulator plant *Phytolacca acinosa* Roxb. (Phytolaccaceae). Environmental Pollution 131: 393-399.