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DAFTAR PUSTAKA

Adiningsih, J. dan M. Sudjadi. 1993. Peranan sistem bertanam lorong (*Alley cropping*) dalam meningkatkan kesuburan tanah pada lahan kering masam. Risalah Seminar, Hasil Penelitian Tanah dan Agroklimat. Pusat Penelitian Tanah dan Agroklimat, Bogor (Tidak dipublikasikan).

Adzemi, M. A., J. Hamdan, and J. S. Sjahril. 1993. Macro nutrient removal studies on black pepper *(Piper nigrum* L.) in Sarawak. The pepper industry (problems and prospects) Universiti Pertanian Malaysia Serawak Malaysia.

Almeida, R., T. de, I. Vasconcelos and V.F. Freire. 1984. Occurence of V.A. mycorhizae in soils Ander legume trees in Ceara. Brazil. Pesquisa Agropecuaria Brasilieira 19 : 281- 282.

Amtmann, A., J. P. Hammond. P. Armengaud and P. J. White. 2006. Nutrient sensing and signalling in plants: potassium and phosphorus. Adv Bot Res 43: 209–257

Anderson, J. M., W.S. Chow and D.J. Goodchild. 1988. Thylacoid membrane organisation in sun/shade acclimation. Aust. J. Plant Physiol. 15 :11–26.

Aphalo, P. J. and T. Letho. 1997. Effects of light quality on growth and N accumulation in birch seedlings. Tree Physiology 17. 125-132

Arnon, D. I. 1949. copper enzymes in isolated chloroplasts. polyphenoxidase in beta vulgaris. Plant physiology 24 : 1-15

Augustoa, L., J. Rangera, D. Binkleyb and A. Rothe. 2002. Impact of several common tree species of European temperate forests on soil fertility. Ann. For. Sci. 59 : 233–253

Baligar, V.C., N. K. Fageria and Z. L. He. 2001. Nutrient use efficiency in plants. Commun Soil Sci Plant Anal 32: 921–950

Ballaré, C. L. 1999. Keeping up with the neighbours: phytochrome sensing and other signaling mechanisms. Trends Plant Sci. 4 : 97-102.

Barbosa, P., J. Hines, I. Kaplan, H. Martinson, A. Szczepaniec, and Z. Szendrei. 2009. Associational resistance and associa- tional susceptibility: having right or wrong neighbors. Annu Rev Ecol Evol Syst 40:1–20

Barker, A. V. and D. J. Pilbeam. 2006. Handbook of plant nutrition. Taylor and Francis. London.

Begon, M., J. L. Harper, and C. R. Townsend. 1986. Ecology. individuals. populations and communities. Oxford: Blackwell Heraut-Bron V. Robin C. Varlet-Grancher C. Afif D.

UNIVERSITAS
GADJAH MADA
TANGGAPAN MORFOFISIOLOGIS DAN PERTUMBUHAN TIGA VARIETAS LADA (Piper nigrum L.) TERHADAP INTENSITAS CAHAYA, BENTUK PUPUK NITROGEN DAN MACAM TIANG PANJAT
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Universitas Gadjah Mada, 2020 | Diunduh dari http://etd.repository.ugm.ac.id/

Bertaminia, M., K. Muthuchelianb, M. Rubinigga, R. Zorera, and R. Velascoa. 2006. Low-night temperature increased the photoinhibition of photosynthesis in grapevine (*Vitis vinifera* L. cv. Riesling) leaves. Environ. Exp. Bot. 57(1–2) : 25–31.

Black, C. C., T. M. Chen and R. H. Brown. 1969. Biochemical basis for plant competition. Weed Science 17 : 338 – 344.

Board, J. 2001. Light interception efficiency and light quality affect yield compensation of soybean at low plant population. Crop Science 40. 1285-1294.

Brenda, B. C. and R. B. Jackson. 1997. Plant competition underground. Annual Review Ecology System. 28 : 545-70

Bruno. J.F.. J. J. Stachowicz and M. D. Bertness. 2003. Inclusion of facilitation into ecological theory. Trend Ecol Evol 18:119–125.

Burridge, J.C., R.G. Lockard, and D. K. Acquaye. 1964. The level of nitrogen. phossporus. potassium. calcium and magnesium in the leaves of cacao (*Theobroma cacao* L.) as affected by shade. fertilizer. irrigation and season. Annals of Botany. 28 : 401 – 417.

Cahill, J. F. and B. B. Casper. 2000. Investigating the relationship between neighbor root biomass and belowground compe- tition: field evidence for symmetric competition below- ground. Oikos 90:311–320

Callaway, R. M. 1995. Positive interactions among plants. Bot Rev 61:306–349.

Callaway, R. M. and L. R. Walker. 1997. Competition and facilitation: a synthetic approach to interactions in plant communities.Ecology 78:1958–1965.

Canham, C. D., P. T. LePage, and K. D. Coates. 2004. A neighborhood analysis of canopy tree competition: effects of shading versus crowding. Can J Forest Res 34:778–787

Canham, C.D., M. J. Papaik, M. Uriate, W. H. McWilliams, J. C. Jenkins, and M. J. Twery. 2006. Neighborhood analyses of canopy tree competi- tion along environmental gradients in New England forests. Ecol Appl 16:540–554

Casal, J. 2012. Shade Avoidance. The *Arabidopsis* book 10: 15 -167.

Casper, B. B. and R. R. B. Jackson. 1997. Plant competition underground. Annu. Rev. Ecol. Syst. 28 : 545–570.

Casper, B. B., H. J. Schenk, and R. R. B. Jackson. 2003. Defining a plant's belowground zone of influence. Ecology 84: 2313–2321

Chan, K. X., S. Y. Phua, P. Crisp, R. McQuinn, and B. J. Pogson. 2016. Learning the languages of the chloroplast: retrograde signaling and beyond. Annual Review of Plant Biology 67: 25–53.

UNIVERSITAS GADJAH MADA
TANGGAPAN MORFOFISIOLOGIS DAN PERTUMBUHAN TIGA VARIETAS LADA (Piper nigrum L.) TERHADAP INTENSITAS CAHAYA, BENTUK PUPUK NITROGEN DAN MACAM TIANG PANJAT
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Universitas Gadjah Mada, 2020 | Diunduh dari http://etd.repository.ugm.ac.id/

Chen, B. L., H. K. Yang, Y. N. Ma, J. R. Liu, F. J. LV, J. Chen, Y.L. Meng, Y.H. Wang, and Z. G. Zhou. 2017. Effect of shading on yield. fiber quality and physiological characteristics of cotton subtending leaves on different fruiting positions. Photosynthetica 55 (2): 240 - 250.

Chambers, J. and L. Aarssen. 2009. Offspring for the next generation: most are produced by small plants within herbaceous populations. Evol Ecol 23:737–751

Chapin, F. S. 1980. The mineral nutrition of wild plants. Ann. Rev. Ecol. Syst. 11. 233 – 260.

Crapo, N. L. and H. J. Ketellapper. 1981. Metabolic priorities with respect to growth and mineral uptake in roots of Hordeum. Triticum and Lycopersicon. Am J Bot 68:10-16

Cui, M. and M. M. Caldwell. 1997. Shading Reduces Exploitation of Soil Nitrate and Phosphate by Agropyron desertorum and Artemisia tridentata from Soils with Patchy and Uniform Nutrient Distributions Author(s): Source: Oecologia. 109 (2) : 177-183

Davis, J. H. C. and S. Garcia. 1983: Competitive ability and growth habit of intermediate beans and maize for intercropping. Field Crops Res. 6. 59 – 75

Davis, M. A., K. J. Wrage, and P. B. Reich. 1998. Competition between tree seedlings and herbaceous vegetation: support for a theory of resource supply and demand. J Ecol 86:652–661.

Daras, U. dan Rusli. 2009. Peningkatan produktivitas tanaman lada melalui optimalisasi tinggi tajar dan volume percabangan tanaman. In: Anonimus. Inovasi mendukung gerakan kebangkitan lada putih. Pusat Penelitian dan Pengembangan Perkebunan Badan Penelitian dan Pengembangan Pertanian Departemen Pertanian. 122-126.

Daras, U., B. E. Tjahjana, dan Herwan. 2012. Status Hara Tanaman Lada Bangka Belitung. Buletin Ristri 3 (1) ; 23 – 32.

Demotes-Mainard, S., T. PeÂron, A. Corot, J. Bertheloot, and J. Le Gourriere. 2016. Plant responses to red and far-red lights. applications in horticulture. Environmental and Experimental Botany 121: 4 - 21.

Devadas, M and S. Chandini. 2000. Growth of bush pepper (*Piper nigrum* L.) plants as influenced by lightand nutrients. *J. Spices Aromatic Crops.* 920 : 105-109.

Devlin, P. F, M. J. Yanovsky, and S. A. Kay. 2003. A genomic analysis of the shade avoidance response in Arabidopsis. Plant Physiol; 133:1617-29.

Dinesh, R., V. Srinivasan, S. Hamza, V. A. Parthasarathy, and K.C. Aipe R. 2010. Physico-chemical. biochemical and microbial properties of the rhizospheric soils of tree species used as supports for black pepper cultivation in the humid tropics. Geoderma 158: 252–258

UNIVERSITAS GADJAH MADA
TANGGAPAN MORFOFISIOLOGIS DAN PERTUMBUHAN TIGA VARIETAS LADA (Piper nigrum L.) TERHADAP INTENSITAS CAHAYA, BENTUK PUPUK NITROGEN DAN MACAM TIANG PANJAT
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Universitas Gadjah Mada, 2020 | Diunduh dari http://etd.repository.ugm.ac.id/

Ding, X., Y. Jiang, T. Hao, H. Jin, H. Zhang, L. He, and J. Yu. 2016. Effects of heat shock on photosynthetic properties. antioxidant enzyme activity. and downy mildew of cucumber (*Cucumis sativus* L.). PLoS One. 11: e0152429.

Direktorat Jendral Perkebunan Indonesia. 2015. Buku statistic perkebunan lada 2014-2016. ditjenbun.pertanian.go.id/tinymcpuk/ gambar/ file/ statistik/.. ./ LADA %202014-2016.pdf. (didownload 10 Januari 2016).

Dong, C., Y. Lu, Y. Zhu, Y. Xu, and Q. Shen. 2012. Effect of homogenous and heterogenous supplay nitrat and ammonium on nitrogen uptake and distribution in tomato seddling. Plant Growth Regul 68 : 271–280.

Dong, C., D. Hu, Y. Fu, M. Wang, and H. Liu. 2014. Analysis and optimization of the effect of light and nutrient solution on wheat growth and development using an inverse system model strategy. Journal of Computers and Electronics in Agriculture 109 : 221 – 231.

Dudley, S. A. and J. Schmitt. 1995. Genetic differentiation between open and woodland Impatiens capensis populations in morpho- logical responses to simulated foliage shade. Functional Ecology 9:655–666.

Dufour, L., A. Matay, G. Talbot, and C. Duprez. 2013. Assesing light competition for cereal production n temperate agroforestry system using experimentation and crop modeling. Journal of Agronomy and Crop Science : 217 - 227

Estrada-Campuzano,G.., D. J. Miralles, and G. A. Slafer. 2008. Yield determination in triticale as affected by radiation in different development phases. Eur. Agron.J. 28 : 597 – 605.

FAO. 2013. dalam: Outlook Lada komoditas pertanian subsector perkebunan. 2015. Pusat data dan sistem informasi pertanian Sekretariat Jendral Kementerian Pertanian. epublikasi.setjen.pertanian.go.id/.../Perkebunan /Outlook%20Lada%202015/.../Outloo... (didownload 10 Januari 2016).

Falengren, G. U. and L. Kristensen. 1994. Importance of ammonium and nitrate to the performance of herb-layer species from deciduous forest in southern Sweden. Environ. exp. Bot. 34 : 31 – 38.

Forde, B.G. and D. T. Clarkson. 1999. Nitrate and ammonium nutrition of plants: physiological and molecular perspectives. Advances in Botanical Research 30 : 1–90.

Franklin, K. A. 2008. Shade avoidance. *New Phytol.* 179**.** 930–944.

Gan, Y., I. Stulen, H. V. Keulen, and P. J. C. Kuiper. 2004. Low concentrations of nitrate and ammonium stimulate nodulation and N2 fixation while inhibiting specific nodulation (nodule DW g−1 root dry weight) and specific N2 fixation (N2 fixed g−1 root dry weight) in soybeanPlant and Soil 258: 281–292.

Gautier, H., C. Varlet-Grancher, and N. Baudry. 1997. Effects of blue light on the vertical colonization of space by white clover and their consequences for dry matter distribution. Annals of Botany 80. 665-671.

UNIVERSITAS
GADJAH MADA
TANGGAPAN MORFOFISIOLOGIS DAN PERTUMBUHAN TIGA VARIETAS LADA (Piper nigrum L.) TERHADAP INTENSITAS CAHAYA, BENTUK PUPUK NITROGEN DAN MACAM TIANG PANJAT
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Universitas Gadjah Mada, 2020 | Diunduh dari http://etd.repository.ugm.ac.id/

Godoy, O., P. Castro-Diez, F. Valladares, and M. Costa-Tenorio. 2009. Different flowering phenology of alien invasive species in Spain: evidence for the use of an empty temporal niche? Plant Biology 11: 803–811.

Goldberg, D. E. and A. M. Barton. 1992. Patterns and consequences of interspecific competition in natural communities: a review of field experiments with plants. Am. Nat. 139 : 771-801.

Gommers, C. M., E. J. Visser, K. R. Stonge, L. A. Voesenek, and R. Pierik. 2013. Shade tolerance: when growing tall is not an option. *Trends Plant Sci.* 18. 65–71.

Grace, J. B. and D. Tilman. 1990. Perspectives on Plant Competition. Academic Press. San Diego. CA.

Grace, J. B and D. Tilman. 1990. Perspektive plant competition. Academic press Inc. Harcourt Brace Jovanovich. Publishers.

Greenwood, D. J., A. M. Stellacci, M. C. Meacham, M. R. Broadley, and P.J. White. 2005. Phosphorus response components of different Brassica oleracea genotypes are reproducible in different environments. Crop Sci 45: 1728–1735.

Grime, J. P. 2001. Plant strategies. vegetation processes. and ecosystem properties. John Wiley and Sons. LTD New York.

Grotkopp, E., M. Rejma´nek, and T. L. Rost. 2002. Toward a causal explanation of plant invasiveness: Seedling growth and lifehistory strategies of 29 pine (Pinus) species. American Naturalist 159 : 396–419.

Guo S-W, Z. Yi, G. Ying-Xu, L. Yong, and S. Qi-Rong. 2007. New Insights into the Nitrogen Form Effect on Photosynthesis and Photorespiration. Pedosphere 17(5) : 601–610.

Guckert, A. 1999. Light quality (red:far-red ratio): does it affect photosynthetic activity. net C02 assimilation. and morphology of young white clover leaves? Canadian Journal of Botany 77 : 1425-1431.

Hairiah, K., S. Ismunandar, dan E. Handayanto. 1998. Pengelolaan tanah secara biologi pada lahan kering beriklim basah melalui pendekatan holistik dan spesifik lokasi menuju sistem pertanian berkelanjutan. p. 12-28. *Dalam:* Sudaryono *et al*. (*eds*). Prosiding Seminar Nasional dan Pertemuan Tahunan Komisariat Daerah Himpunan Ilmu Tanah Indonesia Tahun 1998 (Buku 1).

Hamidy, S. 1999. Manipulasi Permukaan Tanah dan Pemupukan NPKMg pada Pertanaman Lada Perdu. Tesis. Fakultas Pasca Sarjana. Institut Pertanian Bogor. 92 hal.

Hammerton, R. D., and N. Bj¨orn, T. Elisabeth. 1998. Irradiance-induced alterations of growth and cytokinins in *Phaseolus vulgaris* seedlings. Plant Growth Reg. 25: 63–69

UNIVERSITAS
GADJAH MADA
TANGGAPAN MORFOFISIOLOGIS DAN PERTUMBUHAN TIGA VARIETAS LADA (Piper nigrum L.) TERHADAP INTENSITAS CAHAYA, BENTUK PUPUK NITROGEN DAN MACAM TIANG PANJAT
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Universitas Gadjah Mada, 2020 | Diunduh dari http://etd.repository.ugm.ac.id/

Harn, C. E., Khayat, and J. Dale. 1993. Expression dynamic of gene encoding key carbon metabolism enzyme during sing to source transition of developing leaves. Plant Cell Physiol. 34 : 1045 – 1053.

Hartiko, H., E. J. Del Rosario, and J. T. Carlos. 1982. Leaf and root nitrate reductase cctivities of coconut (*Coconut nucifera* L.) Cultivars and Hybrids. JIPI 3 (6) : 227 – 35

Hasanah, Y. Pujiharti, dan A. Sukawa. 1990. Penelitian pendahuluan mikoriza pada tanaman lada (*Piper nigrum* L.). Makalah disampaikan pada seminar bulanan sub Balittro Natar.

Haynes, R. J. 1986. Mineral nitrogen in the plant-soil system. Academic Press. INC. Harcourt Brace Jovanovich Publisher.

Heraut-Bron, V., C. Robin, C. Varlet-Grancher, D. Afif, and A. Guckert. 1999. Light quality (red:far-red ratio): does it affect photosynthetic activity. net C02 assimilation. and morphology of young white clover leaves? Canadian Journal of Botany 77. 1425-1431.

Hermans, C., J. P. Hammond, P. J. White, and N. Verbruggen. 2006. How do plants respond to nutrient shortage by biomass allocation? Trends Plant Sci 11: 610–617

Hidayat, A. dan A. Mulyani. 2002. Lahan kering untuk pertanian. In: Abdurachman *et al*. (*Ed*.). Buku Pengelolaan Lahan Kering Menuju Pertanian Produktif dan Ramah Lingkungan. Pusat Penelitian dan Pengembangan Tanah dan Agroklimat, Bogor. 1-34.

Hinsinger, P., C. Plassard, C. Tang, and B. Jaillard. 2003. Origins of root-induced pH changes in the rhizosphere and their responses to environmental constraints: a review. Plant Soil 248 : 43– 59.

Hirose, T. and M. J. A. Werger. 1995. Canopy structure and photon flux partitioning among species in a herbaceous plant community. Ecology 76 : 466 – 474

Hisamatsu, T. R, W. King, C. A. Helliwell, and M. Koshioka. 2005. The involvement of gibberellin 20-oxidase genes in phytochrome-regulated petiole elongation of Arabidopsis. Plant Physiol; 138:1106-16.

Hofman, G. dan O. V. Cleemput. 2004. Soil and plant nitrogen. International Fertilizer Industry Association. IFA Paris. 48 P.

Hogewoning,S. W., G. Trouwborst, H. Maljaars, H. Poorter, W. Vanleperen, and J. Harbinson. 2010. Blue light dose-responses of leaf photosynthesis. morphology. and chemical composition of *Cucumis sativus* grown under different combinations of red and blue light. J. Exp. Bot. 61 : 3107–3117.

Houdusse, F., A. M. Zamarreño, M. Garnica, and J. García-Mina. 2005. The importance of nitrate in ameliorating the effects of ammonium and urea nutrition on plant development: the relationships with free polyamines and plant proline contents. *Functional Plant Biology* (32) : 1057-1067.

UNIVERSITAS GADJAH MADA
TANGGAPAN MORFOFISIOLOGIS DAN PERTUMBUHAN TIGA VARIETAS LADA (Piper nigrum L.) TERHADAP INTENSITAS CAHAYA, BENTUK PUPUK NITROGEN DAN MACAM TIANG PANJAT
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Universitas Gadjah Mada, 2020 | Diunduh dari http://etd.repository.ugm.ac.id/

Jackson, R. B., and M. M. Caldwell.1992. Shading and the capture of lo- calized soil nutrients: nutrient contents. carbohydrates. and root uptake kinetics of a perennial tussock grass. Oecologia 91: 457 - 462

Janecek, S., E. Patacova, and J. Klimesova. 2014. Effect of fertilization and competition on plant biomass allocation and internal resources : Does plantago ianceolata follow the rule of economic theory. Folia Geobotanica. Volume 49. Pp : 49 – 64.

Jiang, C.D., X. Wang, H. Y. Gao, L. Shi, and W. S. Chow. 2011. Systemic regulation of leaf anatomical structure. photosynthetic performance. and high-light tolerance in sorghum. Plant Physiology 155 : 1416–1424.

Kamprath, E.J. 1970. Exchangeable A1 as a criterion for liming leached mineral soil. Soil Sci. and Amer. Proc. 34:252-254.

Keddy, P.A., K. Neilsen, E. Weiher, and R. Lawson. 2002. Relative competitive performance of 63 species of terrestrial her- baceous plants. J Veg Sci 13 : 5 – 16

Kehr, J., F. Hustiak, C. Walz, L. Willmitzer, and J. Fisahn. 1998. Transgenic plants changes in carbon allocation pattern display a shift in diurnal growth pattern. The Plant Journal 16. 497 – 503

Kohler, K. H., Marianne, and D. Gbring, H. 1980. The Influence of Light on the Cytokinin Content of *Amaranthus* Seedlings. Biol. Plant. 22 (2) : 128-134.

Korikanthimath, V. S. and S.J. Ankegowda. 1999. Performance of black pepper (*Piper nigrum* L. var. Panniyur 1) trained on different shade trees as live standards. J. Spices Arom. Crops 8: 97.

Koutroubas, S. D., D. S. Verasoglou, and A. Zounos. 2000. Nutrient use efficiency as a fctor determining the structure of herbaceous plant communities in lo- nutrient environments. Journa Agronomy and Crop Science 184 : 261 – 266

Krishnamurthy, K. S., V. A. Parthasarathy, K. V. Saji, and B. Krishnamoorthy. 2010. Ideotype concept in black pepper (*Piper nigrum* L.). Journal of Spices and Aromatic Crops 19 (1 and 2) : 01–13.

Krishnamurthy, K. S., S. J. Ankegowda, V. Srinivasan, and S. Hamza. 2013. Influence of Carbohydrates. Mineral Nutrients and Plant Hormones in Alternate Bearing of Black Pepper (*Piper nigrum* L.) American Journal of Plant Sciences 4 : 1960-1967.

Kronzucker, H. J., M. Y. Siddiqi, A. D. M. Glass, and G. J. D. Kirk. 1999. Nitrate-Ammonium Synergism in Rice. A Subcellular Flux Analysis. Plant Physiology 119: 1041–1045

Krop, J. M. and H. Van Laar. 1993: Modelling Crop-Weed Interactions. Cab International Publishers. Wallingford. UK.

Kunhamu, T. K., S. Aneesh, B. M. Kumar, V. Jamaldheen, A. K. Raj, and P. Niyas. 2016. Biomass production. carbon sequestration and nutrient characteristic

UNIVERSITAS
GADJAH MADA
TANGGAPAN MORFOFISIOLOGIS DAN PERTUMBUHAN TIGA VARIETAS LADA (Piper nigrum L.) TERHADAP INTENSITAS CAHAYA, BENTUK PUPUK NITROGEN DAN MACAM TIANG PANJAT
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Universitas Gadjah Mada, 2020 | Diunduh dari http://etd.repository.ugm.ac.id/

of 22-year-old support trees in black pepper (*Piper nigrum* L.) production in Kerala. India. Agroforest System Pp : 1 – 13.

Kurepin, L.V., L. J. Walton, and D. M. Reid. 2007. Interaction of red to farred light ratio and ethylene in regulating stem elongation of *Helianthus annuus*. Plant Growth Regul 51 : 53–61.

Lamb, E. G., S. W. Kembel, and J. F. Cahill. 2009. Shoot. but not root. competition reduces community diversity in experimental mesocosms. J Ecol 97:155–163

Lambers, H., F. S. Chapin, and T. L. Pons. 2008. Plant physiological ecology. Springer-verlag. New York.

Lang, H. J. and G. C. Elliot. 1991. Influence of Ammonium: Nitrate Ratio and Nitrogen Concentration on Nitrification Activity in Soilless Potting Media. J. Amer. Sot. Hort. Sci. 16(4): 642-645.

Levine, S. H. 1976. Competitive interactions in ecosystems. Am Nat 110:903–910.

Leon, J. L. V., D. B. L. Jones, L. J. Sheppard, S. M. Smart, R. Bobbink, N. B. Dise, and M. R. Ashmore. 2016. Evidence for differential effects of reduced and oxidised nitrogen deposition on vegetation independent of nitrogen load. Environmental Pollution 208 : 890 – 897

Li, J., G. Li, H. Wang, and X. W. Deng. 2011. Phytochrome signaling mechanisms. The Arabidopsis book/American Society of Plant Biologists.

Li, H. W., D. Jiang, B. Wollenweber, T. B. Dai, and W. X. Cao. 2010. Effects of shading on morphology. physiology and grain yield of winter wheat. Eur. Agron. J. 33 : 267–275.

Li, S-H., Z-H. Wang, and B. A. Stewart. 2013. Responses of Crop Plants to Ammonium and Nitrate N. Advances in Agronomy 118 : 205 – 397.

Li, Y-Z, Y-H. Pan, C-B. Sun, H-T. Dong, X-Lu. Luo, Z-Q. Wang, B. Chen, and J-L. Tang. 2010. An ordered EST catalogue and gene expression profiles of cassava (*Manihot esculenta*) at key growth stages. Plant molekuler biology 74 : 573 – 590.

Lin, K.-H., M-Y. Huang, W-D. Huang, M-H. Hs, Z-W. Yang, and C-M. Yang. 2013. The effects of red. blue. and white light-emitting diodes on the growth.development. and edible quality of hydroponically grown lettuce (Lactucasativa L. var. capitata). Sci. Hortic. 150 : 86 – 91.

Liu, W. P., G. Neumann, and B. F. Engels. 2000. Rapid effects of nitrogen form on leaf morphogenesis in tobacco. *Journal of Experimental Botany* **51 :** 227-237.

Ljung, K., G. S. Dberg, and G. Pearce. 2004. Methods of plant hormone analysis in Davies. J. Plant hormones : biosynthesis. signal transduction. action.

UNIVERSITAS
GADJAH MADA
TANGGAPAN MORFOFISIOLOGIS DAN PERTUMBUHAN TIGA VARIETAS LADA (Piper nigrum L.) TERHADAP INTENSITAS CAHAYA, BENTUK PUPUK NITROGEN DAN MACAM TIANG PANJAT
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Universitas Gadjah Mada, 2020 | Diunduh dari http://etd.repository.ugm.ac.id/

Lu, Y.X., C. J. Li, and F. S. Zhang. 2005. Transpiration. potassium uptake and flow in Tobacco as affected by nitrogen forms and nutrient levels. Ann Bot 95 : 991–998

Makino, A., T. Mae, and K. Ohira. 1983. Purification and storage of ribulose 1.5-bisphosphate carboxylase from rice leaves. Plant Cell Physiol. 24 : 1169 - 1173

Malhi, S. S., C. A. Grant, A. M. Johnston, and K.S. Gill. 2001. Nitrogen fertilization management for no-till cereal production in the Canadian Great Plains: a review. Soil & Tillage Research 60 : 101-122.

Malavasi, U. C. and M. M. Malavasi. 2001. Leaf characteristics and chloro- phyll concentration of Schyzolobium parahybum and Hymenaea stilbocarpa seedlings grown in different light regimes. Tree Physiol 21:701–703.

Macedo, A. F., M. V. Leal-Costa, E. S. Tavares, C. L. S. Lage, and M. A. Esquibel. 2011. The effect of light quality on leaf production and development of *invitro*-cultured plants of *Alternanthera brasiliana* Kuntze. Environ.Exp.Bot. 70 : 43–50.

Marschner, H., M. Haiussling, and E. George. 191. Ammonium and nitrate uptake rates and rhizosphere pH in non-mycorrhizal roots of Norway spruce *[Picea abies* (L.) Karst. Trees 5:14-21

Marschner, H. 1995. Mineral nutrition of higher plants. Elsevier Ltd.

Martinez-Garcia, J. F..Galstyan, A.Salla-Martret, M. Cifuentes-Esquivel, N. Gallemí, M. and J. Bou-Torrent. 2010. Regulatory components of shade avoidance syndrome. *Adv.Bot.Res.* 53 : 65–116.

Mathai, C. K. 1983. Growth and yield analysis in black pepper varieties (*Piper nigrum* L.) under different light conditions. Ph.D Thesis. Division of Crop Physiology-University of Agricultural Sciences. Bangalore.

Mathai, C.K. and B. P. Nair. 1990. Biomass production levels in relation to economic yield in black pepper varieties. J Plantation Crops 18 : 125-128.

Mathew, P. G., P. A. Wahid, and S. G. Nair. 1995. Soil fertility and nutrient requirement in relation to productivity in black pepper (*Piper nigrum* L.). J. Plantn. Crops 23 : 109 - 115.

Mathew, T. M. B. Kumar, and S. K. V. Babu. 1996. Evaluation of some live standards for black pepper. J. Plantn. Crops 24 : 86-91.

Mathew, J. and E. V. Nybe. 2002. Integrated nutrient management for sustainable production in black pepper. Proceedings of the 15th Plantation Crops Symposium Placrosym XV. December 10-13. 2002. Mysore. India : 381-382

McNellis, T. W. and X-W. Deng. 1995. Light control of seedling morphogenetic pattern. Plant Cell 7 : 1749-1761.

UNIVERSITAS
GADJAH MADA
TANGGAPAN MORFOFISIOLOGIS DAN PERTUMBUHAN TIGA VARIETAS LADA (Piper nigrum L.) TERHADAP INTENSITAS CAHAYA, BENTUK PUPUK NITROGEN DAN MACAM TIANG PANJAT
ISSUKINDARSYAH, Dr. Ir. Endang Sulistyaningsih, M.Sc., Prof. Dr. Ir. Didik Indradewa, Dip. Agr. Sc., Eka Tarwaca S
Universitas Gadjah Mada, 2020 | Diunduh dari http://etd.repository.ugm.ac.id/

Mia, M. A. B. 2015. Nutrition of crop plants. Nova publisher. New York.

Miao, Y-F., Z-H. Wang, and S-X Li. 2015. Relation of nitrate N accumulation indryland soil with wheat response to N fertilizer. Field Crops Res. 170. 119–130.

Mengel, K. and E. A. Kirkby. 2001. Principles of Plant Nutrition (5th edition). Kluwer. Dordrecht. The Netherlands.

Merigout. P., I. Gaudon-Quillere, X. Briand and F. Daniel-Vedele. 2008. Urea Use Efficiency of Hydroponically Grown Maize and Wheat. Journal of plant nutrition 31(1-3) : 427-443.

Müller, R., L. Nilsson, and L. K. Nielsen. 2005. Interaction between phosphate starvation signalling and hexokinase-independent sugar sensing in Arabidopsis leaves. Physiol Plant 124: 81–90

Mulyani, A., Hikmatullah, dan H. Subagyo. 2004. Karakteristik dan potensi tanah masam lahan kering di Indonesia. In: Prosiding Simposium Nasional Pendayagunaan Tanah Masam. Pusat Penelitian dan Pengembangan Tanah dan Agroklimat, Bogor. 1-32.

Mulyani, A., A. Rahman dan A. Dairiah. 2009. Penyebaran lahan masam, potensi dan ketersediannya untuk pengembangan pertanian. In: Anonymous. Fosfat alam: pemanfaatan fosfat alam yang digunakan langsung sebagai pupuk sumber P. Balai Penelitian Tanah. Badan Penelitian dan Pengembangan Pertanian. Bogor. 24-45.

Murtilaksono, K dan S. Anwar. 2004. Potensi, Kendala, dan Strategi Pemanfaatan Lahan Kering dan Kering Masam untuk Pertanian (Padi, Jagung, Kedele), Peternakan, dan Perkebunan dengan Menggunakan Teknologi Tepat Guna dan Spesifik Lokasi. In: Prosiding seminar nasional lahan suboptimal tahun 2014. Palembang 26-27 Septmber 2014. 17-28.

Naoya, F., F. Mitsuko, O. Yoshitaka, S. Sadanori, N. Shigeo, and E. Hiroshi. 2008. Directional blue light irradiation triggers epidermal cell elongation of abaxial side resulting in inhibition of leaf epinasty in geranium under red light condition. J. Hort. Sci. 115: 176–182.

Newman, E. I. 1973. Competition and diversity in herbaceous vegetation. Nature 244 : 310.

Nhut, D. T., T. Takamura, H. Watanabe, K. Okamoto, and M. Tanaka. 2003. Responses of strawberry plantlets cultured *in vitro* under super bright red and blue light-emitting diodes (LEDs). Plant Cell Tissue Organ Cult. 73: 43-52.

Niels, P., R. Anten, Eric J. von W., M. Pawlowski and H. Huber. 2009. Interactive Effects of Spectral Shading and Mechanical Stress on the Expression and Costs of Shade Avoidance. The American Naturalist . 173. No. 2 : 241-255

UNIVERSITAS
GADJAH MADA
TANGGAPAN MORFOFISIOLOGIS DAN PERTUMBUHAN TIGA VARIETAS LADA (Piper nigrum L.) TERHADAP INTENSITAS CAHAYA, BENTUK PUPUK NITROGEN DAN MACAM TIANG PANJAT
ISSUKINDARSYAH, Dr. Ir. Endang Sulistyaningsih, M.Sc., Prof. Dr. Ir. Didik Indradewa, Dip. Agr. Sc., Eka Tarwaca S
Universitas Gadjah Mada, 2020 | Diunduh dari http://etd.repository.ugm.ac.id/

Niinemets, Ü., O. Kull, and J.D. Tenhunen. 1998. An analysis of light effects on foliar morphology. physiology. and light interception in temperate deciduous woody species of contrasting shade tolerance. Tree Physiol. 18 : 681- 696.

Nirmalawati, A., K. Hairiah, L.A. Soehono, dan A.E. Mosier. 1996. Effect of incorporating crop residues on nitrogen fixation of groundnut. Agrivita 19(4):165-171.

Novoplansky, A. 2009. Picking battles wisely: plant behaviour under competition. Plant Cell Environ 32:726-741.

Nuryani, Y. 1996. Klasifiasi dan karakteristik tanaman lada (Piper nigrum L.). dalam : Monograf tanaman lada : 33 – 46.

Nuryani, Y. dan R. Zaubin. 2009. Varietas Lada Prospektif Untuk Agribisnis Lada di Babel. Dalam : Inovasi Mendukung Gerakan Kebangkitan Lada Putih. Badan Litbang Pertanian ; 58 – 66.

Nwofia, G. E., C. Kelechukwu, and B. K. Nwofia. 2013. Nutritional composition of some *Piper nigrum* L. accessions from Nigeria. Int. J. Med. Arom. Plants 3 (2) : 247 – 254.

Olsrud, M. and A. Michelsen. 2009. Effects of shading on photosynthesis. plant organic nitrogen uptake. and root fungal colonization in a subarctic mire ecosystem. Botany 87:463–474

Pahlich, E. and K. W. Joy. 1971. Glutamete dehydrogenase fraom pea roots: purification and properties of the enzyme. Canadian Journal of Biochemestry 49: 127-140

Pan, S., H. Liu, Z. Mo, B. Patterson, M. Duan, H. Tian, S. Hu, and X. Tang. 2016. Effect of nitrogen and shading on root morphologies. nutrient accumulation. and photoshyntetic parameters in different rice genotypes. Scientific Reports 6 : 1 – 13.

Partelli, F. L. 2009. Nutrition of black pepper (Piper nigrum L)- a Brazilian experience. Journal of Spices and Aromatic Crops (2) : 73 – 83.

Parthasarathy, V. A., S. Nair, and J. K. George. 2007. Black pepper : Botany and horticulture. Hort. Rev. 33 : 173 – 266.

Parthasarathy, V. A., B. Sasikumar, R. R. Nair, and J. K. George. 2007. Black pepper: Botany and Horticulture. Hort. Rev. 33 : 173-266.

Patterson, D. T. 1982. Shading responses of purple and yellow nutsedges (*Cyperus rotundus* and *C. esculentus*). Weed Science 30 **:** 25-30.

Peraturan Menteri Pertanian nomor 10/ permentan/ OT.140/ 1/ 2013. ditjenbun. pertanian.go.id/.../Permentan_10_thn_2013_ttg_Pemb_Kebun_Induk_Lad. Didownload pada tanggal 10 November 2016.

Peter, K. V., V. Srinivasan, and S. Hamza. 2000. Nutrient management in spices. Fertilizer News 45 : 13 – 28.

UNIVERSITAS
GADJAH MADA
TANGGAPAN MORFOFISIOLOGIS DAN PERTUMBUHAN TIGA VARIETAS LADA (Piper nigrum L.) TERHADAP INTENSITAS CAHAYA, BENTUK PUPUK NITROGEN DAN MACAM TIANG PANJAT
ISSUKINDARSYAH, Dr. Ir. Endang Sulistyaningsih, M.Sc., Prof. Dr. Ir. Didik Indradewa, Dip. Agr. Sc., Eka Tarwaca S
Universitas Gadjah Mada, 2020 | Diunduh dari http://etd.repository.ugm.ad.id/

Potvin, C. and P. Dutilleul. 2009. Neighborhood effects and size- asymmetric competition in a tree plantation varying in diversity. Ecology 90:321–327

Purwanto, B.H dan R. Sutanto. 1997. Pencirian gugus fungsionil hasil dekomposisi bahan organik dan peranannya terhadap ketersediaan P pada Ultisol. Prosiding Seminar Suberdaya Lahan (Buku I). Puslitanak, Bogor. p. 505-517.

Rahayu, Y. S., P. Walch-Liu, G. Neumann, V. Romheld, N. V. Wiren, and F. Bangerth. 2005. Root-derived cytokinins as long-distance signals for NO_3^--induced stimulation of leaf growth. Journal of Experimental Botany 56 No. 414 : 1143–1152.

Ravindran, P. N., K. N. Babu, B. Sasikumar, and K. S. Krisnhnammurthy. 2006. Botany and crop improvement of black pepper. In : Ravindran. P. N. Black pepper. Harwood academic publishers : 23 – 142.

Ravindran, P.N. 2000. Black pepper: Piper nigrum. Series: Medical and Aromatic Plants –Industrial Profiles. Center for Medicinal Plants Research. Kerala. India. ISBN: 9057024535. Publisher Availability: In Stock CRC Press : 1-526.

Ren, B., H. Cui, J. J. Camberato, S. Dong, P. Liu, B. Zhao, and J. Zhang. 2016. Effects of shading on the photosynthetic characteristics and mesophyll cell ultrastructure of summer maize. Sci. Nat.103 : 67.

Rollwagen, B. A. and R. J. Zasoski. 1988. Nitrogen source effects on rhizosphere pH and nutrient accumulation by Pacific Northwest conifers. Plant and Soil 105: 79-86

Rosman, R., P. Wahid, dan R. Zaubin. 1996. Aspek Pemeliharaan dan Budidaya Lada. Dalam : Monograf Tanaman Lada ; 67 – 75.

Rozendaal, D. V. Hurtado, and L. Poorter. 2006. Plasticity in leaf traits of 38 tropical tree species in response to light; relationships with light demand and adult stature. Funct Ecol 20 : 207–216

Ruan, J., J. Gerendas, R. Hardter, and B. Sattelmacher. 2007. Effect of Nitrogen Form and Root-zone pH on Growth and Nitrogen Uptake of Tea (*Camellia sinensis*) Plants. Annals of Botany 99: 301–310.

Ruffel, S., A. Gojon, and L. Lejay. 2014. Signal interactions in the regulation of root nitrat uptake. *Journal of Experimental Botany* 65 (19) : 5509 – 5517.

Ruhnayat, A. 2011. Respon tanaman lada perdu terhadap pemupukan NPK pada jenis tanah Inceptisols dan Ultisols. Buletin Littro. 22 (1) : 23 - 32.

Sadanandan, A. K. 2006. Agronomy and nutrition of black pepper. In : Ravindran. P. N. Black pepper. Harwood academic publisher. 163 – 223.

UNIVERSITAS
GADJAH MADA
TANGGAPAN MORFOFISIOLOGIS DAN PERTUMBUHAN TIGA VARIETAS LADA (Piper nigrum L.) TERHADAP INTENSITAS CAHAYA, BENTUK PUPUK NITROGEN DAN MACAM TIANG PANJAT
ISSUKINDARSYAH, Dr. Ir. Endang Sulistyaningsih, M.Sc., Prof. Dr. Ir. Didik Indradewa, Dip. Agr. Sc., Eka Tarwaca S
Universitas Gadjah Mada, 2020 | Diunduh dari http://etd.repository.ugm.ac.id/

Sadanandan, A. K., B. S. Bhargava, and S. Hamza. 1996. Leaf nutrient norms for black pepper (*Piper nigrum* L) using DRIS. Journal of Plantation Crops (Suppl) 24 : 53 - 59.

Salsac, L., S. Chaillou, J. F. Morot-Gaudry, C. Lesaint, and E. Jolivet. 1987. Nitrate and ammonium nutrition in plants. Plant Physiol. Biochem 25 : 805–812.

Schlichting, C. D. and H. Smith. 2002. Phenotypic plasticity: linking molecular mechanisms with evolutionary outcomes. Evolutionary Ecology 16: 189 – 211.

Schmitt, J., S. A. Dudley, and M. Pigliucci.1999. Manipulative approaches to testing adaptive plasticity: phyto- chrome-mediated shade-avoidance responses in plants. Am Nat 154 : S43 – S54

Schwinning, S. and J. Weiner.1998. Mechanisms determining the degree of size asymmetry in competition among plants. Oecologia 113:447–455

Setijono, S. 1996. Effect of crop residues and lime materials on soil aluminium and phosphorus availability on high activity clay (HAC) acid mineral soil. Agrivita 19(4):153-157.

Silvertown, J. and D. Charlesworth. 2001. Introduction to Plant Population Biology. 4th edn. Blackwell Science. Oxford.

Sims, D. A., R. L. E. Gebauer, and R. W. Pearcy. 1994. Scaling sun and shade photosynthetic acclimation of Alocasia macrorrhiza to wholeplant performance—II. Simulation of carbon balance and growth at different photon flux densities. Plant. Cell and Environment 17: 889–900.

Sivaraman, K., K. Kandiannan, K. V. Peter, and C. K. Thankamani. 1999. Agronomy of black pepper (*Piper nigrum* L.)- a review. J. Spices Aromatic Crops (8) : 1 – 18.

Smiley, R. W. 1974. Rhizosphere pH as Influenced by Plants, Soils, and Nitrogen Fertilizers. Soil Sci. Soc. Amer. Proc. 38: 795-799.

Smith, H. 1982. Light quality.photoperception.and plant strategy. Annu. Rev. Plant Physiol. 33 : 481–518.

Sodek, L. and W.J. Silva. 1977. Glutamate synthase: A possible role in nitrogen metabolism of the developing maize endosperm. Plant Physiol. 60: 602-605.

Srinivasan, V., S. Hamza, R. Dinesh, and V. A. Parthasarathy. 2007. Nutrient management in black pepper (Piper nigrum L.). Black pepper nutrition-CABI article.com. Didownload tanggal 3 Maret 2016.

Srivastava, S. and U. N. Dwivedi. 2003. Modulation of key nitrogen assimilating enzyme bt NAA and in vitro culture in *Cuscuta reflexa*. Plant physiology and biochemistry 41 : 65-71

UNIVERSITAS
GADJAH MADA
TANGGAPAN MORFOFISIOLOGIS DAN PERTUMBUHAN TIGA VARIETAS LADA (Piper nigrum L.) TERHADAP INTENSITAS CAHAYA, BENTUK PUPUK NITROGEN DAN MACAM TIANG PANJAT
ISSUKINDARSYAH, Dr. Ir. Endang Sulistyaningsih, M.Sc., Prof. Dr. Ir. Didik Indradewa, Dip. Agr. Sc., Eka Tarwaca S
Universitas Gadjah Mada, 2020 | Diunduh dari http://etd.repository.ugm.ac.id/

Srivastava, A. K. and S. Singh. 2003. Foliar fertilization in citrus – a review. Agric Rev 24(4) : 250 – 264.

Stocklin, J. 1997. Competition and the compensatory regulation of fruit and seed set in the perennial herb *Epilobium dodonaei* (Onagraceae). American Journal of Botany 84 : 763-768.

Stuefer, J.F., J. B. Van Hulzen, and H. J. During. 2002. A genotypic trade-off between the number and size of clonal offspring in the stoloniferous herb Potentilla reptans. J Evol Biol 15 : 880 – 884

Suprapto dan A. Yani. 2008. Teknologi Budidaya Lada. Agro Inovasi Balai Besar Pengkajian dan Pengembangan Teknologi Pertanian Badan Penelitian dan Pengembangan Pertanian.

Suryanto dan Suroso. 2004. Teknik budidaya lada integrasi beternak kambing. Prosiding Temu teknis nasional tenaga fungsional pertanian. Pusat Penelitian dan Pengembangan Peternakan : 147 – 152.

Syakir, M. 1994. Pengaruh naungan. unsur hara P dan Mg terhadap iklim mikro. indeks pertumbuhan dan laju tumbuh tanaman lada. Buletin Litro IX 2.

Syakir, M. 2008. Ragam Teknologi Budidaya Lada. Perkembangan Teknologi Tanaman Rempah dan Obat XX (1): 13-24.

Tan, X. W., H. Ikeda, and M. Oda. 2000. Effects of nickel concentration in the nutrient solution on with urea or nitrate as the sole nitrogen source. Sci Hort. 84 : 265 – 273.

Taylor, D. R., L. W. Aarssen, and C. Loehle. 1990. On the relationship between r/K selection and environmental carrying capacity: a new habitat template for plant life history strategies. Oikos 58:239-250.

Teng, S., J. Keurentjes, L. Bentsink, M. Koornneef, and S. Smeekens. 2005. Sucrose-specific induction of anthocyanin biosynthesis in Arabidopsis requires the MYB75/PAP1 gene. Plant Physiol 139: 1840 – 1852

Terashima, I., T. Fujita, T. Inoue, W. S. Chow, and R. Oguchi. 2009. Green light drives leaf photosynthesis more efficiently than red light in strong white light: Revisiting the enigmatic question of why leaves are green. Plant Cell Physiol. 50 (4) : 684 – 697.

Thangaselvabal, T., C. G. L. Justin, and M. Leelamathi. 2008. Black pepper (*Piper nigrum* L.) The king of spices-Areview. Agric. Rev. 29 (2) : 89 – 98.

Tjahjana, B. E., U. Daras, dan N. Heryana. 2012. Formulasi pupuk lada berimbang di Lampung. Buletin Restri 3 (3) : 239 – 244.

Tilman, D. 1988. Plant Strategies and the Dynamics and Structure of Plant Communities. Princeton University Press. Princeton. NJ

UNIVERSITAS GADJAH MADA
TANGGAPAN MORFOFISIOLOGIS DAN PERTUMBUHAN TIGA VARIETAS LADA (Piper nigrum L.) TERHADAP INTENSITAS CAHAYA, BENTUK PUPUK NITROGEN DAN MACAM TIANG PANJAT
ISSUKINDARSYAH, Dr. Ir. Endang Sulistyaningsih, M.Sc., Prof. Dr. Ir. Didik Indradewa, Dip. Agr. Sc., Eka Tarwaca S
Universitas Gadjah Mada, 2020 | Diunduh dari http://etd.repository.ugm.ac.id/

Tilman, D.1990. Mechanisms of plant competition for nutrients: The elements of predictive theory of competition: In: J. Grace and D. Tilman (eds). Perspectiveson Plant Competition. pp. 117-141. Academic Press. New York.

Tilman, D. and D. Wedin.1991. Plant traits and resource reduction for five grasses growing on a nitrogen gradient. Ecology 72 : 685 – 700.

Tisdale, S.L., W.L. Nelson and J.D. Beaton. 1985. Soil Fertility and Fertilizers. New York. p. 751.

Toledo-Aceves, T. and M. D. Swaine. 2008. Above- and below-ground competition between the liana Acacia kamerunensis and tree saplings in contrasting light environments. Plant Ecol. 196 : 233–244.

Treberg, M. A. and R. Turkington. 2010. Facilitation in an unpro- ductive boreal forest understorey community. J Veg Sci 21: 761 – 771.

Tsukaya, H. 2005. Leaf shape: genetic controls and environmental factors. Int. J. Dev. Biol. 49: 547–555.

Usman, R. Zaubin dan P. Wahid. 1996. Aspek pemeliharaan tanaman lada. Dalam: Anonimous. Monograf tanaman lada.Balai Penelitian Tanaman Rempah dan Obat. 85-92.

Vaast, P., R. J. Zasoski, and C. S. Bledsoe. 1998. Effects of solution pH, temperature, nitrate/ammonium ratios, and iInhibitors on ammonium and nitrate uptake by arabica coffee in short-term solution culture. J. Plan. Nutr. 21 (7): 1551-1564.

Valladares, F. and U. E. Niinemets. 2008. Shade Tolerance. a key plant feature of complex nature and consequences. Annual Review of Ecology. Evolution. and Systematics 39: 237 - 257.

Waard, P. W. F. 1964. Pepper cultivation in Sarawak. *World Crops* 16: 24-34.

Waard, P. W. F. 1969. Foliar diagnosis. nutrition and yield stability of black pepper *(Piper nigrum* L.). Communication No. 58. Royal Tropical Institute. Amsterdam.

Wade, M.K., M. Al-Jabri, dan M. Sudjadi. 1986. The effect of liming on soybean yield and soil acidity parameters of three Red-Yellow Podsolic soils of West Sumatra. Pemb. Pen. Tanah dan Pupuk (6):1-8.

Wahid, P. 1984. Pengaruh naungan dan pemupukan terhadap pertumbuhan dan produksi tanaman lada. Desertasi Doktor Fakultas Pasca Sarjana Institut Pertanian. Bogor.

Wahid, P. dan U. Suparman. 1986. Teknik budidaya untuk Meningkatkan Produktivitas Tanaman Lada. Balai Penelitian Tanaman Rempah dan Obat. Bogor.

Wahid, P. 1987. Pengaruh pemupukan dan pemangkasan tajar hidup terhadap produksi tanaman lada. Pemb. Littri. XII (3 – 4 Januari – Juni 1987).

UNIVERSITAS
GADJAH MADA
TANGGAPAN MORFOFISIOLOGIS DAN PERTUMBUHAN TIGA VARIETAS LADA (Piper nigrum L.) TERHADAP INTENSITAS CAHAYA, BENTUK PUPUK NITROGEN DAN MACAM TIANG PANJAT
ISSUKINDARSYAH, Dr. Ir. Endang Sulistyaningsih, M.Sc., Prof. Dr. Ir. Didik Indradewa, Dip. Agr. Sc., Eka Tarwaca S
Universitas Gadjah Mada, 2020 | Diunduh dari http://etd.repository.ugm.ac.id/

Wahid, P., R. Zaubin, dan Y. Nuryani. 1990. Pengaruh pemupukan terhadap hasil lada di Bangka. Pembr.Littri. 16 (2): 43-49.

Wahid, P. 1996. Identifikasi tanaman lada. Dalam: Monograf tanaman lada 1. Badan Penelitian dan Pengembangan Pertanian. Balai Penelitian Tanaman Rempah dan Obat. Bogor : 27 – 32

Wahid, P. 2006. Management of pepper in Indonesia. *In* : Ravindran. P. N. Black Pepper. Harwood Academic Publisher : 225 – 237.

Wang, Z. H., Y-F. Miao. and S-X.Li. 2016. Wheat responses to ammonium and nitrate N applied at differentsown and input times Field Crops Research 199 : 10 – 20.

Wang, E. L., Q. Yu, D. R. Wu, and J. Xia. 2008. Climate. agricultural production and hydrological balance in the North China Plain. Int. J. Climatol. 28 : 1959–1970.

Weiner, J. 1990. Asymmetric competition in plant popula- tions. Trends Ecol. Evol. 5 : 360-364.

Wheeler, R. M.**,** C. L. Mackowiak, and J. C. Sager. 1991. Soybean stem growth under high-pressure sodium with supplemental blue lighting. Agron J 83 : 903-906.

Wilson, J. B. 1988. Shoot competition and root competition. J Appi Ecol 25 : 279-296.

Wójcik, P. 2004. Uptake Of Mineral Nutrients From Foliar Fertilization. Journal of Fruit and Ornamental Plant Research 12 : 201-217

Wong, T. H. and A. D. Paulus. 1993. Evaluation of live supports for black pepper. The pepper industry (problems and prospects) Universiti Pertanian Malaysia Serawak Malaysia.

Yamazaki, J. and Y. Shinomiya. 2013. Effect of partial shading on the photosynthetic apparatus and photosystem stoichiometri in sunflower leave. Photosynthetica 51 : 3 -12.

Yap, A. C. 2012a. Determination of Nutrient Uptake characteristic of Black Pepper (*Piper nigrum* L.). Journal of Agricultural Science and Technology B 2 : 1091 – 1099.

Yap, A. C. 2012b. Impact of different fertilization methods on the soil, uield and growth performance of black pepper (*Piper nigrum* L.). Malasysian Journal of Soil Science 16 : 71 – 87.

Yap, A. C. 2015. Determination of the efficiency and efficacy of biochemical fertilizer on the soil, yield and growth performance of black pepper (*Piper nigrum* L.). Journal of Anvences in Agriculture 4 (3) : 460 – 468.

UNIVERSITAS
GADJAH MADA
TANGGAPAN MORFOFISIOLOGIS DAN PERTUMBUHAN TIGA VARIETAS LADA (Piper nigrum L.) TERHADAP INTENSITAS CAHAYA, BENTUK PUPUK NITROGEN DAN MACAM TIANG PANJAT
ISSUKINDARSYAH, Dr. Ir. Endang Sulistyaningsih, M.Sc., Prof. Dr. Ir. Didik Indradewa, Dip. Agr. Sc., Eka Tarwaca S
Universitas Gadjah Mada, 2020 | Diunduh dari http://etd.repository.ugm.ac.id/

Yudianto, A, Rizali, A, Munif, D, Setiadi, and I, Qoyim, 2014, Enviromental factor affecting productivity of two Indonesian varieties of black pepper (*Piper nigrum* L,), Agrivita 36 (3) : 278 – 284,

Zamora, D. S., S. Jose, P. K. R. Nair, J. W. Jones, B. J. Brecke, and J. L. Ramsey. 2008. Interspesific competiton in a pecan-cotton alley-cropping system in southern United States : Is light the limiting factor In : S. Jose and A. M. Gordon: 81 - 95. Toward agroforestry design : An ecological approach, Springer, New York : 312.

Zaubin, R., Y. Nuryani dan P. Wahid. 1990. Penggunaan berbagai jenis panjatan untuk tanaman lada di Bangka. Pembr Littri 15 (4) : 137 – 141.

Zaubin, R,, P Wahid dan Y, Nuryani, 1990, Pengaruh pemupukan N,P dan K terhadap pertumbuhan dan hasil lada di Bangka, Pembr Littri 16(1) : 5-9,

Zaubin, R, dan P, Yufdi. 1996. Jenis Tegakan dan Produktivitas Tanaman Lada. Balai Penelitian Tanaman Obat dan Aromatika. Departemen Pertanian. Bogor.

Zaubin, R. 2002. Penggunaan tegakan hidup pada tanaman lada. Hasil-hasil Penelitian Tanaman Rempah dan Obat Mendukung Otonomi Daerah 14 (2): 1-12.

Zdarska M, Tereza D, Zuzana G, Markéta P, Siarhei D, and Jan H. 2015. Illuminating light, cytokinin, and ethylene signalling crosstalk in plant development. J. of Exp. Both. 66 (16): 4913–4931.

Zhao D., K. R. Reddy and V, G. Kakani, 2004. Leaf and canopy photosynthetic characteristics of cotton (Gossypium hirsutum) under elevated CO2 concentration and UV-B radiation. J. Plant Physiol. 161: 581-590.

Zhao, D and D. M. Oosterhuis. 1998. Influence of shade on mineral nutrient status of field grown-cotton. Journal of Plant Nutrition 21 : 1681 – 1695.