

BIBLIOGRAPHY

- Agullo JC, Perez-Banon C, Crespo MB, Juan A. 2015. Puzzling out the reproductive biology of the endangered cat's head rockrose (*Helianthemum caput-felis*, Cistaceae). *Flora* **217**: 75–81.
- Alizoti PG, Kilimis K, Gallios P. 2010. Temporal and spatial variation of flowering among *Pinus nigra* Arn. clones under changing climatic conditions. *Forest Ecology and Management* **259**:786–797.
- Angadi VG, Jain H, Shankaranarayana KH. 2003. Genetic diversity between sandal populations of different provenances in India. Institute of Wood Science and Technology. Bangalore, India.
- Anonymous. 2013. *Cendana Sumba, asal mula minyak wangi* (Sumbas' sandalwood, the first origin of perfumes). *Harian Kompasiana online*. February 1st 2013. [Indonesian]
- Anonymous. 2015. Pengembangan cendana gagal (*The sandalwood improvement has failed*). Kompas 17 Juni 2015. Kupang, Nusa Tenggara Timur. [Indonesian]
- Applegate GB, Davis AGW, Annable PA. 1990. Managing sandalwood for conservation in North Queensland, Australia. USDA Forest Service. *Gen. Tech. Rep.* PSW-122.
- Arifriana R, Indrioko S, Syahbudin A. 2017. *Variasi cendana (Santalum album Linn.) berdasarkan morfologi daun dan bunga di Desa Petir, Rongkop, Gunungkidul*. (Morphological variation of sandalwood based on leaves and flowers in Petir, Rongkop, Gunungkidul). *Jurnal Ilmiah Kehutanan* **11**: 97-108. [Indonesian]
- Arroyo MTK, Muñoz MS, Henríquez C, Till-Bottraud I, Pérez F. 2006. Erratic pollination, high selfing levels and their correlates and consequences in an altitudinally widespread above-tree-line species in the high Andes of Chile. *Acta Oecologica* **30**: 248–257.
- Barrett SCH, Baker AM, Jesson LK. 2006. Mating strategies in Monocotyledons. *Monocots Newsletter II*. Department of Botany, University of Toronto. Ontario, Canada.
- Baskorowati L. 2011. Flowering intensity and flower visitors of *Santalum album* L. at *ex situ* conservation plot, Watusipat, Gunung Kidul, Yogyakarta. *Journal of Forestry Research* **8**:130–143
- Bawa KS and Hadley M. 1990. *Reproductive ecology of tropical forest plant*. UNESCO. Paris, France.
- Bere SM. 2012. *Pohon cendana di Timor nyaris punah* (Sandalwood in Timor in the beginning of extinction). *Harian Kompas online*. Tuesday, April 3rd 2012. [Indonesian]

- Bertin RI. 2008. Plant phenology and distribution in relation to recent climate change. *Journal of the Torrey Botanical Society* **135**(1): 126–146.
- Borges LA, Sobrinho MS, Lopes AV. 2009. Phenology, pollination and breeding system of the threatened tree *Caesalpinia echinata* Lam. (Fabaceae), and a review of studies on the reproductive biology in the genus. *Flora* **204**: 111-130.
- Born C, Hardy OJ, Chevalier MH, Ossari S, Atteke C, Wickings J, Hoassaert-McKey M. 2008. Small-scale spatial genetic structure in the Central African rainforest tree species *Aucoumea klaineana*: a stepwise approach to infer the impact of limited gene dispersal, population history and habitat fragmentation. *Molecular Ecology* **17**: 2041-2050.
- Bottin L, Tassin J, Nasi R, Bouvet J. 2007. Molecular, quantitative and abiotic variables for the delineation of evolutionary significant units: case of sandalwood (*Santalum austrocaledonicum* Vieillard) in New Caledonia. *Conserv Genet.* **8**:99–109.
- Brand JE. 1994. Genotypic variation in *Santalum album*. *Sandalwood Research Newsletter*. Issue 2-1994.
- Byrne M, MacDonald B, Broadhurst L, Brand J. 2003. Regional genetic differentiation in Western Australian sandalwood (*Santalum spicatum*) as revealed by nuclear RFLP analysis. *Theor Appl Genet* **107**:1208–1214, 2003.
- Carpentier A. 2002. Consequences of clonal growth for plant mating. *Evolutionary Ecology* **15**:521-530.
- Collin CL and Shykoff JA. 2003. Outcrossing rates in the gynodioecious-gynodioecious species *Dianthus sylvestris* (Caryophyllaceae). *American Journal of Botany* **90**(4): 579–585.
- Craft KJ and Ashley MV. 2007. Landscape genetic structure of bur oak (*Quercus macrocarpa*) savannas in Illinois. *Forest Ecology and Management* **239**: 13-20.
- Culley TM, Weller SG, Sakal AK, Rankin AE. 1999. Inbreeding depression and selfing rates in a self compatible, hermaphroditic species, *Scheidea membranacea* (Caryophyllaceae). *Am J Bot* **86** (7): 980-987.
- Cursach J and Rita J. Reproductive biology of *Ranunculus weyleri* (Ranunculaceae), a narrowly endemic plant from the Balearic Islands with disjunct populations. *Flora* **207**: 726–735. 2012.
- da Cruz DD, Mello MAR, Sluys MV. 2006. Phenology and floral visitors of two sympatric *Heliconia* species in the Brazilian Atlantic forest. *Flora* **201**: 519-527
- da Silva JAT, Page T, Zhang X, Kher MM, Nataraj M, Soner D, Ma G. 2016. Sandalwood: basic biology, tissue culture, and genetic transformation. *Planta* **243**: 847–887.

- Dahlgren JP, Zeipel HV, Ehrlen J. 2007. Variation in vegetative and flowering phenology in a forest herb caused by environmental heterogeneity. *American Journal of Botany* **94**(9): 1570–1576.
- Dalgleish HJ, Ott JP, Setshogo MP, Hartnett DC. 2012. Inter-specific variation in bud banks and flowering effort among semi-arid African savanna grasses. *South African Journal of Botany* **83**: 127–133.
- Dani, K.G.S, Ravikumar, P., Kumar, R.P, and Kush, A. 2011. Genetic variation within and among small isolated populations of *Santalum album*. *Biologia Plantarum* **55** (2): 323-326.
- del-Cacho M, Penuelas J, Lloret F. 2013. Reproductive output in Mediterranean shrubs under climate change experimentally induced by drought and warming. *Perspectives in Plant Ecology, Evolution and Systematics* **15**: 319– 327.
- Dinas Kehutanan Provinsi Yogyakarta (The Forestry Bureau of Yogyakarta Province). 2015. *Laporan inventory tegakan hutan di Kabupaten Gunungkidul* (A final report of the forest stands inventory in Gunungkidul). Bagian Perencanaan dan Pemetaan Hutan. KPHP Dinas Kehutanan Daerah Istimewa Yogyakarta. [Indonesian]
- Dinas Pertanian dan Tanaman Hortikultura Provinsi Yogyakarta (Agriculture and Horticulture Bureau of Yogyakarta Province). 2012 to 2015. The data of monthly rainfall in each of district in Gunungkidul. Gunungkidul, Yogyakarta. [Indonesian]
- Dreyer LL, Esler KJ, Zietsman J. 2006. Flowering phenology of South African *Oxalis*—possible indicator of climate change? *South African Journal of Botany* **72**: 150 – 156.
- Dudash MR and Fenster CB. 2001. The role of breeding system and inbreeding depression in the maintenance of an outcrossing mating strategy in *Silene virginica* (Caryophyllaceae). *Am J Bot* **88** (11): 1953-1959.
- Fernandez VA, Galetto L, Astegiano J. 2009. Influence of flower functionality and pollination system on the pollen size-pistil length relationship. *Organisms, Diversity & Evolution* **9**: 75–82. 2009.
- Frankham R, Ballou JD, Briscoe DA. 2002. *Introduction to Forest Genetics*. Cambridge University Press. Cambridge, UK.
- Garfi G, Mercati F, Fontana I, Collesano G, Pasta S, Vendramin GG, Michele R, Carimi F. 2013. Habitat features and genetic integrity of wild grapevine *Vitis vinifera* L. subsp. *sylvestris* (C.C. Gmel.) Hegi populations: A case study from Sicily. *Flora* **208**: 538–548.
- Ghazoul J. 1997. *Field studies of forest tree reproductive ecology*. ASEAN-Canada Forest Tree Seed Centre. Muak-lek, Saraburi 18180, Thailand.
- Grab S and Craparo A. 2011. Advance of apple and pear tree full bloom dates in response to climate change in the south-western Cape, South Africa: 1973–2009. *Agricultural and Forest Meteorology* **151**: 406–413.

- Griffin AR and Sedgley M. 1989. *Sexual reproduction of tree crops*. Academic Press Inc. Harcourt Brace Jovanovich Pub. San Diego USA.
- Guo L, Dai J, Ranjitkar S, Xu J, Luedeling E. 2013. Response of chestnut phenology in China to climate variation and change. *Agricultural and Forest Meteorology* **180**: 164–172,
- Harbaugh DT and Baldwin BG. 2007. Phylogeny and biogeography of the Sandalwoods (*Santalum*, Santalaceae): repeated dispersals throughout the Pacific. *American Journal of Botany* **94**(6): 1028–1040. 2007.
- Harlan JR and Wet JMJ. 1971. Toward a rational classification of cultivated plants. *Taxon* **20** (4): 509–517.
- Haryono E and Suratman. 2010. Significant features of Gunung Sewu Karst as geopark site. *In Proceeding on 4th International UNESCO Conference on Geopark*. April 12-15, 2010. Langkawi, Malaysia.
- Haukka AK, Dreyer LL, Esler KJ. 2013. Effect of soil type and climatic conditions on the growth and flowering phenology of three *Oxalis* species in the Western Cape, South Africa. *South African Journal of Botany* **88**: 152–163.
- Hedhly A. 2011. Sensitivity of flowering plant gametophytes to temperature fluctuations. *Env and Exp Botany* **74**: 9–16.
- Herawan T, Na'iem M, Indrioko S, Indrianto A. 2014. Somatic embryogenesis of Sandalwood (*Santalum album* L.). *Indonesian Journal of Biotechnology*, December, 2014. **Vol. 19, No. 2**, pp.168-175.
- Herlihy CR and Eckert CG. 2005. Evolution of self-fertilization at geographical range margins? A comparison of demographic, floral, and mating system variables in central vs. peripheral populations of *Aquilegia canadensis* (Ranunculaceae). *American Journal of Botany* **92**(4): 744–751.
- Hmeljevski KV, Freitas L, Domingues R, Pereira AR, Cancio AS, Andrade AC, Machado MA, Viccini LF, Forzza RC. 2014. Conservation assessment of an extremely restricted bromeliad highlights the need for population-based conservation on granitic inselbergs of the Brazilian Atlantic Forest. *Flora* **209**: 250–259.
- Indrioko S and Ratnaningrum YWN. 2015(a). Habitat loss caused clonality, genetic diversity reduction and reproductive failure in *Santalum album*, an endangered endemic species of Indonesia. *Procedia Environmental Sciences* **V**: 613-620.
- Indrioko S and Ratnaningrum YWN. 2015(b). *Pengaruh degradasi habitat terhadap dinamika genetik dan kemampuan reproduksi cendana pada beberapa populasi di Nusa Tenggara Timur* (The effects of habitat degradation on gene dynamics and reproductive fitness in several populations of sandalwood in Nusa Tenggara Timur). Final Report on DPP Research Grant. Faculty of Forestry. Universitas Gadjah Mada. Yogyakarta, 2015.

- Isagi Y, Tateno R, Matsuki Y, Hirao A, Watanabe S, Shibata M. 2007. Genetic and reproductive consequences of forest fragmentation for population of *Magnolia obovata*. *Ecological Research* **22**: 382-389.
- IUCN. 1994. IUCN Red List Categories And Criteria: Version 2.3. IUCN Species Survival Commission. International Union for Conservation of Nature and Natural Resources. Glad, Switzerland, and Cambridge, UK.
- IUCN. 2009. IUCN Red List Categories And Criteria: Version 3.1. IUCN Species Survival Commission. International Union for Conservation of Nature and Natural Resources. Glad, Switzerland, and Cambridge, UK.
- Jones CE and Little RJ. 1983. *Handbook of experimental pollination biology*. Van Nostrand Reinhold Co. Inc. New York.
- Jump AS and Penuelas J. 2009. Environmental change and the option value of genetic diversity. *Trends on Plant Science* **14**: 51–58.
- Karron JD, Mitchell RJ, Bell JM. 2006. Multiple pollinator visits to *Mimulus ringens* (Phrymaceae) flowers increase mate number and seed set within fruits. *American Journal of Botany* **93**(9): 1306–1312.
- Kartikawati NK, Naiem M, Hardiyanto EB, Rimbawanto A. 2013. Improvement of seed orchard management based on mating system of Cajuputi trees. *Indonesian Journal of Biotechnology*, June, 2013. **Vol. 18, No. 1**, pp.26-35
- Kelleher CT, Hodkinson TR, Douglas GC, Kelly DL. 2005. Species distinction in Irish populations of *Quercus petraea* and *Q. robur*: morphological vs. molecular analysis. *Annals of Botany* **96**: 1237-1246.
- Kementerian Kehutanan RI (Ministry of Forestry, Indonesia). 2012. *Menanam kembali satu juta pohon cendana di NTT* (The replanting of one million sandalwoods in Nusa Tenggara Timur). Ministry of Forestry, Republic of Indonesia. Jakarta, Indonesia. [Indonesian]
- Kementerian Kehutanan RI dan Pemprov NTT (Ministry of Forestry Indonesia and the Province Government of NTT). 2010. *Masterplan pengembangan dan pelestarian cendana di Provinsi NTT tahun 2010 – 2030* (Masterplan on the development and restoration of sandalwood in NTT Province year 2010 – 2030). *Kementerian Kehutanan Indonesia and Pemerintah Provinsi NTT*. [Indonesian]
- Kettle CJ, Hollingsworth PM, Jaffre T, Moran B, Ennos RA. 2007. Identifying the early genetic consequences of habitat degradation in a highly threatened tropical conifer, *Araucaria nemorosa* Laubenfels. *Molecular Ecology* **16**: 3581-3591.
- Kwon JA and Morden CW. 2002. Population genetic structure of two rare tree species (*Colubrina oppositifolia* and *Alphitonia ponderosa*, Rhamnaceae) from Hawaiian dry and mesic forests using RAPDs. *Molecular Ecology* **11**: 991-1001.
- Lesica P and Kittelson PM. 2010. Precipitation and temperature affected advanced phenology in a semi-arid grassland. *Journal of Arid Environments* **74**: 1013-1017.

- Lembaga Ilmu Pengetahuan Indonesia* (LIPI; The Indonesian Sciences Bureau). 1853. The herbarium specimens of *Santalum album*. Bidang Botani dan Mikrobiologi. Pusat Penelitian Biologi. Lembaga Ilmu Pengetahuan Indonesia. Cibinong, Indonesia.
- Lhuillier E, Butaud JF, Bouvet JM. 2006. Extensive clonality and strong differentiation in the Insular Pacific tree *Santalum insulare*: implications for its conservation. *Annals of Botany* **98**: 1061–1072.
- Liberato MLR, Paoletti E, Da Camara CC. 2011. Climate changes and forests. *Forest Ecology and Management* **262**: vii–ix, 2011.
- Liengsiri C, Piewlang C, Boyle TJB. 1990. *Starch gel electrophoresis of tropical trees, a manual*. ASEAN-Canada Forest Tree Seed Centre. Muak Lek, Saraburi, Thailand.
- Ludwig F and Asseng S. Potential benefits of early vigor and changes in phenology in wheat to adapt to warmer and drier climates. *Agricultural Systems* **103**: 127–136, 2010.
- Lutz E, Schneller JJ, Holderegger R. 2000. Understanding population history for conservation purposes: population genetics of *Saxifraga aizoides* (Saxifragaceae) in the lowlands and lower mountains North of the Alps. *American Journal of Botany* **87** (4): 583–590.
- Machado IC and Sazima M. 2008. Pollination and breeding system of *Melochia tomentosa* L. (Malvaceae), a keystone floral resource in the Brazilian Caatinga. *Flora* **203**: 484–490.
- Manel S and Holderegger R. 2013. Ten years of landscape genetics. *Trends in Ecology and Evolution*. Vol **28** (10): 614–621
- McKinnel. 1993. Review on Santalum. IUFRO; Australia.
- Moreira PA, Brandao MM, Araujo NH, Oliveira DA, Fernandes GW. 2015. Genetic diversity and structure of the tree *Enterolobium contortisiliquum* (Fabaceae) associated with remnants of a seasonally dry tropical forest. *Flora* **210**: 40–46.
- Museum Biologi UGM* (The Museum of Biology UGM). 1960. The herbarium specimens of *Santalum album*. The Faculty of Biology. Universitas Gadjah Mada. Yogyakarta, Indonesia.
- Nadia TL and Machado IC. 2014. Interpopulation variation in the sexual and pollination systems of two Combretaceae species in Brazilian mangroves. *Aquatic Botany* **114**: 35–41.
- Naiem M. and Ratnaningrum YWN. 2011. *Dinamika variasi genetik dan sistem perkawinan beberapa provenan cendana serta implikasinya pada konservasi genetik*. (The dynamics of genetic variation and mating systems on several provenances of sandalwood and its implication on genetic conservation). *Luaran Hibah Penelitian Strategis Nasional Tahun Anggaran 2010* (The output of

- Research Grant *Strategi Nasional* Year 2010). *Ditjen Dikti, Depdiknas* (Directorate General of Advanced Education, Department of National Education). [Indonesian]
- Nei M. 1987. *Molecular evolutionary genetics*. Columbia University, New York, USA.
- Nugrahanto G. and Fatmawati. 2013. *Kajian tingkat kesiapan cendana di kampus BDK Kupang sebagai media pembelajaran diklat budidaya cendana*. (Review on the feasibility of sandalwood in BDK campus for research. *Balai Pendidikan dan Pelatihan Kehutanan Kupang* (Forestry Training Center Kupang). [Indonesian]
- Ortigosa AL and Gomez JM. 2009. Differences in the diversity and composition of the pollinator assemblage of two co-flowering congeneric alpine wallflowers, *Erysimum nevadense* and *E. baeticum*. *Flora* Doi:10.1016/j.flora.2009.04.005
- Owens JN, Sornsathapornkul P, Thangmitcharoen S. 2001. *Studying flowering and seed ontogeny in tropical forest trees*. ASEAN-Canada Forest Tree Seed Centre. Muaklek, Saraburi 18180, Thailand, 2001.
- Pautasso M. 2009. Geographical genetics and the conservation of forest trees. *Perspectives in Plant Ecology, Evolution and Systematics* **11**: 157-189.
- Phillips NC, Drost DT, Varga WA, Shultz LM. 2011. Demography, reproduction, and dormancy along altitudinal gradients in three intermountain *Allium* species with contrasting abundance and distribution. *Flora* **206**: 164–171.
- Poerwowidodo. 1992. *Selidik cepat analisis tanah* (Handbook on soil observation methods). Usaha Nasional, Surabaya. [Indonesian]
- Provan J, Beatty GE, Hunter AM, McDonald RA, McLaughlin E, Preston SJ, Wilson S. 2008. Restricted gene flow in fragmented population of a wind-pollinated tree. *Conservation Genetics* **9**: 1521-1532.
- Rao MN, Ganeshaiyah KN, Shaanker RU. 2007. Assessing threats and mapping sandal resources to identify genetic ‘hot-spot’ for in-situ conservation in peninsular India. *Conserv Genet* **8**: 925–935.
- Ratnaningrum YWN, Indrioko S, Faridah E, Syahbudin A. 2017. *Variasi karakter pembungaan antar varian dan ras lahan cendana sepanjang gradien geografis di Gunung Sewu*. (Variation on floral characters among variants and landscapes of sandalwood along geographical gradients in Gunung Sewu). *Jurnal Ilmiah Kehutanan* Vol. 11 No. 2 Year 2017. [Indonesian]
- Ratnaningrum YWN, Indrioko S, Faridah E, Syahbudin A. 2016. Flowering and seed production of sandalwood (*Santalum album* Linn., Santalaceae) along environmental gradients in Gunung Sewu Geopark, Indonesia. *Nusantara Bioscience* Vol. 8 No. 2, pp 180-191.
- Ratnaningrum YWN, Indrioko S, Faridah E, Syahbudin A. 2015. The effects of population size on genetic parameters and mating system of sandalwood in Gunung Sewu, Indonesia. *Indonesian Journal of Biotechnology*. Vol 20 No. 2.

- Ratnaningrum YWN and Indrioko S. 2015. Response of flowering and seed production of sandalwood (*Santalum album* linn., Santalaceae) to climate changes. *Procedia Environmental Sciences* **V**: 665-675.
- Ratnaningrum YWN and Indrioko S. 2014. Variation on genotypes and flowering characters affecting pollination mechanisms of sandalwood (*Santalum album* Linn., Santalaceae) planted on *ex-situ* gene conservation in Yogyakarta, Indonesia. *Eurasian Journal of Forest Research* **VI**: 167-179.
- Ratnaningrum YWN and Prehaten D. 2005. Pollination mechanisms and breeding systems of *Santalum album* (Santalaceae), the endemic species of Eastern parts of Indonesia that became land-race of Gunungkidul, Central Java. Proceeding on *International Seminar on Synergistic Approach to Appropriate Forestry Technology for Sustaining Rainforest Ecosystems*. The Faculty of Food and Agriculture. Universiti Putra Malaysia. Bintulu, Sarawak, Malaysia.
- Reis MS. 2005. Resource development for non-wood forest products. Appendix 4.3.1. FAO Corporate Document Repository. FAO.
- Richardson AD, Keenan TF, Migliavacca M, Ryua Y, Sonnentaga O, and Toomey M. 2013. Climate change, phenology, and phenological control of vegetation feedbacks to the climate system. *Agricultural and Forest Meteorology* **169**:156–173.
- Rimbawanto A, Widyatmoko AYPBC, Sulistyowati P. 2006. *Distribusi keragaman genetik populasi Cendana (Santalum album Linn.) berdasarkan penanda RAPD*. (The genetic diversity distribution of sandals populations based on RAPD markers). *Jurnal Penelitian Hutan Tanaman* **3(3)**. [Indonesian]
- Rughkla A, McComb JA, Jones MGK. 2006. Intra-and inter specific pollination of *Santalum spicatum* and *S. album*. *Aust J Bot.* **45(6)**: 1083-1095.
- Sabat AML, Fjellheim S, Rognli OA. 2011. The continental-oceanic climatic gradient impose clinal variation vernalization response in *Arabidopsis thaliana*. *Environmental and Experimental Botany* **78**: 109– 116.
- Schmidt T, Arens P, Smulders MJM, Billeter R, Liira J, Augenstein I, Durka W. 2009. Effects of landscape structures on genetic diversity of *Geum urbanum* L. populations in agricultural landscapes. *Flora* **204**: 549-559.
- Seido K. 1993. *Manual of isozyme analysis*. Japan International Cooperation Agency (JICA). Yokohama. 1993.
- Setyorini T, Taryono, Suyadi, Indrioko S. 2012. Paternity analysis of Tea (*Camellia sinensis* L. Kuntz) hybrids using isozyme marker. *Indonesian Journal of Biotechnology*, December, 2012, **Vol. 17, No. 1**, pp.154-162.
- Shapcott A, Rakotoarinivo M, Smith RJ, Lysakova G, Fay MF, Dransfield J. 2007. Can we bring Madagascar's critically endangered palms back from the brink? Genetics, ecology and conservation of the critically endangered palm *Beccariophoenix madagascariensis*. *Botanical Journal Linneage Society* **154**: 589-608.

- Shiping W, Changshun W, Jichuang D, Xiaoxue Z, Caiyun L, Zhenhua Z, Fandong M, Yingnian L, Guangping X, Mingyuan D. 2014. Timing and duration of phenological sequences of alpine plants along an elevation gradient on the Tibetan plateau. *Agricultural and Forest Meteorology* **189–190**: 220–228.
- Simanjuntak T. 2002. *Gunung Sewu in prehistoric times*. Gadjah Mada Univ. Press. Yogyakarta, Indonesia.
- Sindhu-Veerendra HCS and Anantha-Padmanabha HSA. 1996. The breeding system in Sandal (*Santalum album* L.). *Silvae Genetica* **45** (4): 188-190.
- Sommer R, Glazirina M, Yuldashev T, Otarov A, Ibraeva M, Martynova L, Bekenov M, Kholov B, Ibragimov N, Kobilov R, Karaev S, Sultonov M, Khasanova F, Esanbekov M, Mavlyanov D, Isaev S, Abdurahimov S, Ikramov R, Shezdyukova S, de Pauw E. 2013. Impact of climate change on wheat productivity in Central Asia. *Agriculture, Ecosystems and Environment* **178**: 78– 99.
- Suma TB and Balasundaran M. 2003. Isozyme variation in five provenances of *Santalum album* in India. *Australian Journal of Botany* **51**(3): 243 – 249.
- Suseno OH. 1991. *Prospek pengembangan cendana* (The prospect on the improvement of sandalwood). *Jurnal Ilmiah Berita Biologi*, Special Edition: *Cendana (Santalum album* L.) *sumber daya daerah otonomi* Nusa Tenggara Timur, vol. 5 no. 5. Pusat Penelitian Biologi-LIPI. Jakarta. [Indonesian]
- Syahbudin A, Adriyanti DT, Nalvien. 2005. *Variasi morfologi cendana (Santalum album* Linn.) *pada pertanaman uji provenans di Wanagama, Gunungkidul* (Morphological variation of sandalwood planted in provenance trial in Wanagama, Gunungkidul). Final Report on DPP Research Grant. Faculty of Forestry. Universitas Gadjah Mada. Yogyakarta, 2005. [Indonesian]
- Tamla HT, Cornelius JP, Page T. 2012. Reproductive biology of three commercially valuable *Santalum* species: development of flowers and inflorescences, breeding systems, and interspecific crossability. *Euphytica* 184: 323–333.
- Torres E, Iriondo JM, Perez C. 2002. Vulnerability and determinants of reproductive success in the narrow endemic *Antirrhinum microphyllum* (Scrophulariaceae). *American Journal of Botany* **89**(7): 1171–1179.
- Torres E, Iriondo JM, and Perez C. 2003. Genetic structure of an endangered plant, *Antirrhinum microphyllum* (Scrophulariaceae): allozyme and RAPD analysis. *American Journal of Botany* **90**(1): 85–92.
- Tsaliki M and Diekmann M. 2011. Population size, pollination and reproductive success in two endangered *Genista* species. *Flora* **206**: 246–250.
- UNEP. 2007. *UNEP-WCMC Species Databases: Santalum album* Linn. United Nations Environment Program – World Conservation Monitoring Center. Cambridge, UK.
- Van-Breemen N and Buurman P. 2002. *Soil Formation*. Kluwer Academic Publishers, Dordrecht.

- Wahyudiningsih TS, Naiem M, Indrioko S, Sumardi I. 2014. Allozyme variation of the endemic and vulnerable *Dyera lowii* Hook.f. in Central Kalimantan: Implications for genetic resources conservation. *Indonesian Journal of Biotechnology*. **Vol. 19, No. 1**, pp.79-90.
- Widyatmika M. 2011. *Cendana tidak lagi semerbak di bumi Timor* (No more sandalwood fragrance in Timor). Proceeding on Seminar *Konferensi Nasional Sejarah IX*. Universitas Nusa Cendana. Kupang, Nusa Tenggara Timur. [Indonesian]
- Wanntorp and de Craene. 2009. A molecular phylogeny of Santalaceae (Santalales). *Systematic Botany* **33**: 107-116.
- Warburton CL, James EA, Fripp YJ, Trueman SJ, Wallace HM. 2000. Clonality and sexual reproductive failure in remnant populations of *Santalum lanceolatum* (Santalaceae). *Biological conservation* **Volume 96 Issue 1**.
- Weber A and Kolb A. 2013. Population size, pollination and phenotypic trait selection in *Phyteuma spicatum*. *Acta Oecologica* **47**:46-51.
- White TL, Adams WT, Neale DB. 2007. *Forest Genetics*. CABI Publishing. CAB International. Wallingford, Oxfordshire.
- Williams CF, Ruvinsky J, Scott PE and Hews DK. 2001. Pollination, breeding system, and genetic structure in two sympatric *Delphinium* (Ranunculaceae) species. *Am J Bot.* **88**:1623-1633.
- Willmer P. 2012. Ecology: pollinator–plant synchrony tested by climate change. *Current Biology* **Vol 22 No 4**.
- Wolf PG, Campbell DR, Waser NM, Sipes SD, Toler TR, and Archibald JK. 2001. Tests of pre- and postpollination barriers to hybridization between sympatric species of *Ipomopsis* (Polemoniaceae). *American Journal of Botany*. **88**(2): 213–219.
- Young AD, Boshier D, Boyle T. 2000. *Forest conservation genetics: principles and practices*. CSIRO Publishing. Collingwood, Australia.
- Zhang ZY, Chen YY, Li DZ. 2005. Detection of low genetic variation in a critically endangered Chinese pine, *Pinus squamata*, using RAPD and ISSR markers. *Biochemical Genetics* **43**: 239-249.
- Zobel B and Talbert J. 1984. *Applied forest tree improvement*. John Wiley and Sons. New York.