



## DAFTAR PUSTAKA

- Abeles FB, Morgan PW, Saltveit Jr ME. 1992. *Ethylene in Plant Biology 2nd Edition*. San Diego: Academic Press.
- Adelina N. 2004. *Informasi Singkat Benih Aquilaria malaccensis Lamk*. Bandung Indonesia Forest Seed Project. Halaman 22-23.
- Aloni R. 2001. *Foliar and Axial Aspect of Vascular Differentiation: Hypotheses and Evidence*. Journal of Plant Growth Regulation 20:22-34
- Aloni R. 2007. *Phytohormonal mechanisms that control wood quality formation in young and mature trees*. In: *The Compromised Wood Workshop 2007*. K. Entwistle, P. Harris, J. Walker (Ed). The Wood Technology Research Centre, University of Canterbury, Christchurch, New Zealand, pp 1-22.
- Aloni R. 2013. *The Role of Hormones in Controlling Vascular Differentiation*. Fromm J (Ed). Cellular Aspects of Wood Formation. Plant Cells Monograph 20. Berlin. Springer
- Agrios GN. 2004. *Plant Pathology*. Ed ke-5. California: Academic Press, Inc.
- Andianto. 2010. *Ciri Anatomi Lima Jenis Kayu Penghasil Gaharu dan Dua Jenis Kerabatnya*. Bogor. Pusat Penelitian dan Pengembangan Hasil Hutan.
- Asdar M. 2006. *Karakteristik Anatomi Kayu Gaharu Daun Beringin (Gyrinops versteegii) di Gorontalo*. Jurnal Perennial 3 (1), 6-10
- Badan Standardisasi Nasional. 2011. Standar Nasional Indonesia (SNI). SNI 7631:2011. Gaharu. Jakarta. BSN.
- Balfas J. 2009. Kandungan Resin pada Kayu Gaharu Tanaman. Jurnal Penelitian Hasil Hutan vol 27(3), hal 235-244. ISSN 2442-8957.
- Balmer D, Mauch-Mani B. 2012. *Plant Hormones and Metabolites as Universal Vocabulary in Plant Defense Signaling*. Witzany, Gunther dan Baluska, Frantisek (Ed). Biocommunication of Plants. Berlin. Springer.



- Bowyer JL, Schmulsky R, Haygreen JG. 2003. *Forest Product and Wood Science: An Introduction 4<sup>th</sup> Edition*. Iowa State Press. USA
- Browse J. 2005. *Jasmonate: An Oxylipin Signal with Many Roles in Plants*. Gerald L (Ed). Plant Hormones: Vitamins and Hormones Advance in Research and Application Vol. 72. California: Elsevier Academic Press.
- Burg SP. 1973. *Ethylene in Plant Growth*. Proc, Nat. Acad. Sci. USA 70(2):591-597
- Carlquist S. 2001. *Comparative Wood Anatomy: Systematic, Ecological, and Evolutionary Aspects of Dicotyledon Wood 2<sup>nd</sup> Edition*. New York. Springer
- Carlquist S. 2013. *Interxylary Phloem: Diversity and Function*. Brittonia 65(4): 477-495
- Casey JP. 1960. *Pulp and Paper : Chemistry and Chemical Technology*. 3th ed vol 1. New York
- Dwi H, Saparinto S. 2014. *Panduan Lengkap Gaharu*. Jakarta. Penebar Swadaya.
- Funada R, Miura T, Shimizu Y, Kinase T, Nakaba S, Kubo T, Sano Y. 2008. *Gibberelin-induced Formation of Tension Wood in Angiospermae Trees*. Planta 227: 1409-1414.
- Forest Products Laboratory. 2010. *Wood Handbook: Wood as an Engineering Material*. General Technical Report FPL-GTR-190. United States: Department of Agriculture, Forest Service, Forest Products Laboratory.
- Heyne K. 1987. *Tumbuhan Berguna Indonesia*. Jilid I dan II. Terj. Badan Libang Kehutanan. Cetakan I. Koperasi karyawan Departemen Kehutanan Jakarta Pusat.
- IAWA Committee. 1989. *IAWA List of Microscopic Features for Hardwood Identification*. IAWA Journal 10: 219-332.
- Ibrahim MM. 2018. *Pengaruh Lama Perlakuan dan Konsentrasi Hormon Methyl Jasmonate Terhadap Sifat Anatomi Kayu Tumbuhan Penghasil Gaharu*



(*Aquilaria sp.*) (Skripsi). Fakultas Kehutanan. Universitas Gadjah Mada. Yogyakarta.

Isnaini Y. 2004. *Induksi Produksi Gubal Gaharu Melalui Inokulasi Cendawan dan Aplikasi Faktor Abiotik* [Tesis]. Bogor. Fakultas Pertanian, Institut Pertanian Bogor.

Kasmudjo. 2016. *Produk Hasil Alami dan Budidaya: Kondisi dan Peluang*. Yogyakarta. Cakrawala Media

Kremer PJ, Kozlowski TT. 1979. *Physiology of Woody Plants*. New York. Academic Press.

Ledhyane. 2010. Analisis Ragam dan Rancangan Acak Lengkap. [http://analisis\\_ragam\\_dan\\_rancangan\\_acak\\_lengkap.pdf](http://analisis_ragam_dan_rancangan_acak_lengkap.pdf). Diunduh pada 24 Januari 2018.

Lev-Yadun S, Aloni R. 1995. *Differentiation of the Ray System in Woody Plants*. Bot Rev 61: 45-84

Mandang YI, Pandit IKN. 1997. *Seri Manual: Pedoman Identifikasi Jenis Kayu di Lapangan*. Bogor: Yayasan PROSEA dan Pusat Diklat Pegawai & SDM Kehutanan

Mandang YI, Wiyono B. 2002. *Anatomi Kayu Gaharu (*Aquilaria malaccensis* Lamk) dan Beberapa Jenis Sekerabat*. Buletin Penelitian Hasil Hutan 20(2): 107-126. Bogor.

Michiho I. 2005. *Introduction of sesquiterpenoid production by methyl jasmonate in *Aquilaria sinensis* cell suspension culture*. Essential Oil Research. <http://www.findarticles.com> (5 April 2018)

Murtaip. 2010. *Induksi senyawa gaharu melalui kombinasi senyawa kimia dan Acremonium* [Tesis]. Bogor. Fakultas Matematika dan Ilmu Pengetahuan Alam, Institut Pertanian Bogor.



Merk-Turk F. 2002. *Phytoalexin: Defence or Just Respon to Stress?* J. Cell Mol Biol 1:1-6.

Mohammed R, Jong PI, Kamziah AH. 2014. *Fungal Inoculation Induces Agarwood in Young Aquilaria malaccensis Trees in the Nursery.* Journal of Forestry Research 25(1): 201-204.

Nadarajah K, Turner JG. 2003. *The role of jasmonate in plant pathogen interaction in Arabidopsis thaliana.* Jurnal Teknologi 39 (C): 9-16

Nugroho WD, Nakaba S, Yamagishi Y, Begium S, Marsoem SN, Ko JH, Jin H, Funada R. 2013. *Gibberelin Mediates the Development of Gelatinous Fibers in the Tension Wood of Inclined Acacia Mangium Seedlings.* Annals of Botany 112: 1321-1329.

Nugroho WD, Pujiarti R. 2016. *Stimulasi Phytohormonal terhadap Aktivitas Kambium dan Pembentukan Deposit Resin pada Tumbuhan Penghasil Gaharu Aquilaria sp.* Laporan Akhir Tahun Kegiatan Penelitian Fundamental. Yogyakarta. Universitas Gadjah Mada.

Nobuchi T, Siripatanadilok S. 1991. *Preliminary Observation of Aquilaria crassna Wood Associated with the Formation of Aloewood.* Bull kyoto univ forest 63: 226-235.

Nordahlia AS, Lim SC, Anwar UMK. 2017. *Wood Anatomical Features of Aquilaria (Thymelaceae) dan Gonystylus (Gonystylaceae) in Malaysia.* Malayan nature Journal 69(1), 63-69. Malaysia

Panshin AJ, Carl de Zeeuw. 1980. *Textbook of Wood Technology Volume 1.* McGraw-Hill Book Company. New York, USA.

Prawirohatmodjo S. 2007. *Struktur dan Sifat-Sifat Kayu.* Yogyakarta: Bagian Penerbitan Fakultas Kehutanan Universitas Gadjah Mada.



Rahayu G, Situmorang J. 2006. *Menuju produksi senyawa gaharu secara lestari.*

*Laporan Penelitian Hibah Bersaing XI.* Bogor. Lembaga Penelitian  
Masyarakat. IPB

Rajput KS, Patil VS, Rao KS. 2013. *Wood Anatomy and the Development of  
Interxylary Phloem of Ipomea hederifolia Linn.* (Convolvulaceae). J  
Plant Growth Reguk 32: 654-662.

Rao MV, Davis KR. 1999. *Ozone-induced cell death occurs via two distinct  
mechanisms in Arabidopsis: the role of salicylic acid.* The Plant Journal  
17(6):603-614

Rao MV, Paliyath G, Ormrod DP. 2000. *Ultraviolet-B- and ozone-induced  
biochemical changes in antioxidant enzymes of Arabidopsis thaliana.*  
Plant Physiol 110(1):25-36

Salisbury FB, Ross CW. 1995. *Fisiologi Tumbuhan: Jilid Tiga, Perkembangan  
Tumbuhan dan Fisiologi Lingkungan Ed.4.* Bandung. Institut Teknologi  
Bandung.

Santoso E 2014. *Teknologi Bioinduksi Gaharu. Pusat Penelitian dan  
Pengembangan Konservasi dan Rehabilitasi.* Bogor. Forda Press.

Santoso E, Agustini L, Sitepu IR, Turjaman M. 2007. *Efektivitas Pembentukan  
Gaharu Dan Komposisi Senyawa Resin Gaharu Pada Aquilaria sp.*  
Bogor. Jurnal Penelitian Hutan dan Konservasi Alam. Vol. IV No. 6 :  
543-551.

Shirsat AH, Gatehouse JA, Robinson NJ. 1999. *Plant Biochemistry and  
Molekular.* Second edition. Chichester : John Wiley and Sons.

Siran SA. 2011. *Perkembangan Pemanfaatan Gaharu.* Siran SA dan Turjaman M  
(eds). Pengembangan Teknologi Produksi Gaharu Berbasis  
Pemberdayaan Masyarakat Sekitar Hutan. Bogor. Pusat Penelitian dan  
Pengembangan Hutan dan Konservasi Alam. Pp 1-29.



- Shmulsky R, Jones PD. 2011. *Forest Products and Wood Science: An Introduction Sixth Edition*. Iowa: Blackwell Publishing.
- Sumadiwangsa S, Zulnely. 1999. *Catatan Mengenai Gaharu di Kalimantan Timur dan Nusa Tenggara Barat*. Info Hasil Hutan 5(2):80-90.
- Sumarna Y. 2012. *Budidaya Jenis Pohon Penghasil Gaharu*. Bogor: Badan Penelitian dan Pengembangan Kehutanan Pusat Litbang Produktivitas Hutan .
- Susilo A, Titi K, Erdy S. 2014. *Status Taksonomi dan Populasi Jenis-jenis Aquilaria dan Gyrinops*. Pusat Penelitian dan Pengembangan Konservasi dan Rehabilitasi. Bogor. Badan Penelitian dan Pengembangan Kehutanan.
- Susmianto A, Maman T, Pujo S. 2014. *Rekam Jejak Gaharu Inokulasi Teknologi Badan Litbang Kehutanan*. Bogor. Forda Press
- Tarigan K. 2004. *Profil Pengusahaan (Budidaya) Gaharu*. Jakarta. Departemen Kehutanan Pusat Bina Penyuluhan Kehutanan.
- Triadriati T, Diana AC, Miftahudin. 2016. *Induksi Pembentukan Gaharu Menggunakan Berbagai Media Tanam dan Cendawan Acremonium sp. dan Fusarium sp. Pada Aquilaria crassna*. Jurnal Sumberdaya Hayati 2(1):1-6
- Overmyer K, Tuominen H, Kettunen R, Betz C, Langebartels C, Kangasjärvi J. 2000. *Ozone-sensitive arabidopsis rcd1 mutant reveals opposite roles for ethylene and jasmonate signaling pathways in regulating superoxide-dependent cell death*. Plant Cell 12(10): 49-62
- Walker D, Taylor RW, Mulrooney RP. 1997. *Diagnosing Field Crop Problems*. [terhubung berkala]. <http://ag.udel.edu/extension>. (5 April 2018)
- Wahyudi. 2013. *Buku Pegangan Hasil Hutan Bukan Kayu*. Yogyakarta: Pohon Cahaya.
- Winarsih A., Puspita F, Khoiri MA. 2011. *Pengaruh Stressing Terhadap Percepatan Pembentukan Gubal Gaharu Pada Tanaman Gaharu*



UNIVERSITAS  
GADJAH MADA

PENGARUH LAMA PERLAKUAN DAN KONSENTRASI HORMON ETHYLENE TERHADAP SIFAT  
ANATOMI KAYU *Aquilaria sp*  
CHAROLINA RIANA C, Dr. Widhyanto Dwi Nugroho, S.Hut., M.Agr.Sc.

Universitas Gadjah Mada, 2018 | Diunduh dari <http://etd.repository.ugm.ac.id/>

(*Aquilaria malaccensis*, Lamk). Skripsi. Fakultas Pertanian. Universitas Riau.

Wyn LT, Anak NA. 2010. Wood for Trees: A Review of Agarwood (*Gaharu*) Trade in Malaysia. Selangor TRAFFIC Southeast Asia

Yamamoto F, Kozlowski TT. 1987. Effect of Ethrel on Growth and Stem Anatomy of *Pinus halepensis* Seedlings. IAWA Bull n.s. 8: 11-19

Yamamoto F, Angeles S, Kozlowski TT. 1987. Effect of Ethrel on Stem Anatomy of *Ulmus americana* Seedlings. IAWA Bull n.s. 8: 3-9

Yuan QS. 1995. *Aquilaria species : in vitro culture and production of eaglewood (agarwood)*. Di dalam: Bajaj YPS, editor. Biotechnol Agric Forest 33. Volume ke-15. New York: Springer. Hlm: 36-46

Zhang J, Nieminen K, Serra JAA, Helariutta Y. 2014. The Formation of Wood and Its Control. Current Opinion in Plant Biology 17:56-63