UNIVERSITAS
GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
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Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

DAFTAR PUSTAKA

Abd-Elsalam K.A and Hashim A.F. 2013. Hidden fungi as microbial and nano-factories for anticancer agents. *Fungal Genom. Biol*. 3:e115.

Abreu, P.D., Renato, L. and Ortiz, R.A.M. 2003. HPLC Determination of Amoxicillin Comparative Bioavailability in Healthy Volunteers after a Single Dose Administration.http://www.ualberta.ca/~csps/JPPS6(2)/L.Abreu/amoxicillin htm. (diakses 20 Oktober 2015).

Adeyemi, M, M.. Hassan i, J.O. Amupitan J. H. Kirkbr, Wiersema. 2010. Chemical and biological evaluation of the stem bark of *Bobgunnia Madagascariensis* (Desv). *J. Basic Appl. Chem.* 1(6):46-51.

Agostini-Costa, T.S., Vieira, R.F., Bizzo, H.R., Silveira, D., and Gimenes M.A., 2012. *Chapter 8 : Secondary Metabolites*. pp.131-164. *In* Dhanarasu, Sasikumar (Eds) *Biochemistry, Genetics, and Molecular Biology "Chromatography and Its Applications"*.(http://www.intechopen.com/books/chromatography-and-itsapplications /secondary-metabolites). Diakses Tanggal 1 Oktober 2014.

Ahmed, F.A., Alam, N., and Khair, A. 2013. Incidence and biology of *Corynespora cassiicola* (berk. & curt.) Wei. Disease of Okra in Bangladesh. *Bangladesh J. Bot*. 42(2): 265-272

Akter, M., Khan, M.A.I., Muhsin, M.D.A, Hamid, K., Ullah, O.M., Bulbul, I.J., Firoz, A.,Uddin, B.A., Urmi, K.F. 2012. In vitro studies on antibacterial, antifungal, and cytotoxic properties of *Leucas aspera*. *Biol. and Med*. 4 (4): 183–187.

Alexopoulos. C.J, Mims, C.W., and Blackwell, M. 2013. *Introductory Mycology*, 4th edition, Wiley India (P), Ltd., Daryaganj, New Delhi.

Alexopoulus, J., C. Mims, and M. Blackwell. 1996. Introductory Mycology. John Wiley & Sons. Inc. New York

Ando, K., Nakashima, C., Park, J.Y., and Otoguro, M. 2003. Workshop on isolation methods of microbes. *Res. Dev. Cent. Biotechnol. Indonesia Inst. Sci*. 44.

Arnold, A. E. 2007. Review: Understanding the diversity of foliar endophytic fungi: progress, challenges, and frontiers. *Fungal Biol. Rev*. 2: 51-66.

Ash, G. J., Sakuanrungsirikul, B.S.S., Anschaw, E., Crump, N., Hailstones, D., Harper, J.D.I. 2010. Genetic characterization of a novel *Phomopsis* sp., a putative biocontrol agent for Carthamus lanatus. *Mycologia*. 102(1): 54–61.

UNIVERSITAS
GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
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Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Aveskamp, M.M., De Gruyter, J. and Crous, P.W. 2008. Biology and recent developments in the systematics of *Phoma*, a complex genus of major quarantine significance. *Fungal Divers*. 31:1-18.

Borokini, T. I. and Omotayo, F. O. 2012. Phytochemical and ethnobotanical study of some selected medicinal plants from Nigeria. *J. Med. Plants Res.* 6(7) :1106-1118.

Bacon, C.W. and White, J.F., 1994. *Stains, media, and procedures for analyzing endophytes*. pp.47-56. In Bacon, C.W and White, J.F. (Eds.) *Biotechnology of endophytic fungi of grasses*, CRC Press, Boca Raton.

----------. 2000. *Microbial endophytes*, Marcel Dekker Inc., New York.

Bajwa, R., Khalid, A., and Cheema, T.S. 2003. Antifungal activity of allelopathic plant extracts III: Growth response of some pathogenic fungi to aqueous extract of *Parthenium hysterophorus*. *Plant Pathol. J*. 2: 145-156.

Baligar, V.C. and Fageria, N. K. Fageria. 2007. Agronomy and physiology of tropical cover crops. *J. Plant Nutr*. 30: 1287–1339.

Barnett, H.L and Hunter.1972. *Ilustrated Genera of Imperfect Fungi*. Burger Publishing Minneapolis Minesota. 3rd edition. P: 116-117.

Barrios Gonzalez, J., Fernandez FJ and Tomasini A. 2003. Microbial secondary metabolites production and strain improvement. *Indian J. Biotechnol*. 2: 322-333.

Binggeli, P. 1996. A taxonomic, biogeographical and ecological overview of invasive woody plants. *J. Veg. Sci*. 7: 121-124.

Benson, H.J. 2001. *Microbiological application: laboratory manual in general microbiology*, 8th edition, McGraw Hills Company Inc., New York, 478p.

Berkenkamp, B. 1997. Blackpatch of forage legumes. *Can. Plant Dis. Surv*. 57-65.

Bezerra, J.D.P., Nascimento, C.C.F., Barbosa, R.D.N., da Silva, D.C.V., Svedese, V.M., Silva-Nogueira, E.B., Gomes, B.S., Paiva, L.M., Souza-Motta, C.M. 2015. Endophytic fungi from medicinal plant *Bauhinia forficata*: Diversity and biotechnological potential. *Brazilian J. Microbiol.* 46(1):49-57.

Brady, S. F., Bondi, S. M., and Clardy, J. 2001. The guanacastepenes: a highly diverse family of secondary metabolites produced by an endophytic fungus. *J. American Chem. Soc.*123(40): 9900-9901.

UNIVERSITAS GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
DIAN FITRIARNI, Rina Sri Kasiamdari, S.Si., Ph. D.; Dr. Tri Rini Nuringtyas, M.Sc.
Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Brock, T.D., and Madigan, M.T. 2003. *Biology of Microoganisms*. Sixth edition. Mexico: Prentice Hall International.

Brown, J. 1997. *Fungi With Septate Hyphae and A Dikaryophase*. In Brown, J.F and Ogle, H.J (Eds.) *Plant Pathog. and Plant Dis.* Rockvale Publication, Armidale. Australia.

Buatong, J. 2010. Endophytic Fungi Producing Antimicrobial Substances from Mangrove Plants in the South Thailand. *Prince of Songkla University*. Thailand.

Cannon, P.F., Bridge, P.D., and Monte, E. 2000. *Linking the past, present, and future of Colletotrichum systematics*. In: Prusky D, Freeman S, Dickman M, eds. *Colletotrichum: host specificity, pathology, and host-pathogen interaction*. APS Press. St Paul. Minnesota. 1-20.

Cannon, P.F., Damm, U., Johnston, P.R., and Weir, B.S. 2012. *Colletotrichum*-current status and future directions. *Stud. in Mycol*. 73:181–213.

Carlile, M. J., Watkinson, S.C., and Gooday, G. W. 1994. *The Fungi*. Academic Press, London :69.

Carrol, G.C. 1998. Fungal endophyte in stems and leaves. From latent pathogen to mutualistic symbiont. *Ecology*. 69:2-9.

Cavalieri, S.J., I.D. Rankin., R.J. Harbeck., R.S. Sautter., Y.S. McCarter., S.E. Sharp., J.H. Ortez., dan C.A. Spiegel. 2005. Manual of Antimicrobial Susceptibility Testing. USA: *American Soc. for Microbiol*.

Chapla, V. M., Zeraik, M. L., Leptokarydis, I.H., Silva, G. H., Bolzani, V.S., Young, M.C. M., Pfenning, L. H and Araújo, A.R. 2014. Antifungal Compounds Produced by *Colletotrichum gloeosporioides*, an Endophytic Fungus from *Michelia champaca*. *Molecules*. 19: 19243-19252.

Choma, I. 2005. The use of thin-layer chromatography with direct bioautography for antimicrobial analysis. *LGCG Europe.* 18(9): 1--7.

Choma, I.M. and Grzelak, E.M. 2010. *Bioautography Detection in Thin Layer Chromatography*. Elsevier. 1218 (19).

Collins, C.H., Lyne, P. M., Grange, J. M., and Falkinham III, J. O. 2004. *Collins and Lyne's microbiological methods*, 8th edition , Arnold Publisher, London, 8: 445.

Conti, R., Cunha, I.G.B., Siqueirab, V. M., Souza-Mottab, C. M., Amorim, E.L.C., and Araújoc, J.M. 2012. Endophytic microorganisms from leaves of *Permacoce verticillata* (L.): Diversity and antimicrobial activity. *J. Appl. Sci. Pharm*. 2 (12): 017-022.

UNIVERSITAS
GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
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Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Cowan, M., M., 1999, Plant products as antimicrobial agents. *Clin. Microbiol. Rev*.12 (4):564-82

Choi, Y.W., Hyde, K.D. and Ho, W.H. (1999). Single spore isolation of fungi. *Fungal Divers*. 3: 29-38.

Chopra, I. and Roberts M. 2001.Tetracycline antibiotic : Mode action, Aplications, Moleculer and Epidemiology of bacterial resistance. *Microbiol. Rev*. 69-232.

Crueger,W & Crueger, A. 1984. *Biotechnology A Textbook of Industrial Microbiology*. Sinauer Associates. Inc Sunderland. USA. 54-57.

Cushnie, T.P.Tim. Lamb, Andrew J. Antimicrobial Activity of Flavonoids. *Intern. J. Antimic. AgentsI*. 2005;26: 343-356.

Cruz, A. C. R.D., Izabel, T.D.S.S., Leão-Ferreira., S. M., Gusmão, L. F. P. 2009. Conidial fungi from the semi-arid *Caatinga biome* of Brazil. New species and new records of *Helicosporium*. *Mycotaxon*. 110:53–64.

D'Souza, M. A., and Hiremath, K.G. 2015. Isolation and bioassay screening of medicinal plant Endophytes from Western Ghats forests, Goa, India. *Int. J. Adv. Res. Biol. Sci*. 2(8): (2015): 176–190.

Da Silva Pereira, M.O., Correa, C.M., De Sousa, J.R., and Teixeira, M.A. 1998. Contituintes quimicos do *Calopogonium mucunoides*. *Quimica Nova*. 11 (2): 196-199.

Dahlan, S. 2004. Seri Statistik: Statisik untuk Kedokteran dan Kesehatan Uji Hipotesis dengan Menggunakan SPSS Program 12 Jam. Jakarta: PT Arkans.

Dali, S., Natsir, H., Usman, H., & Ahmad, A. (2011). Antibacterial bioactivity of protein fractions of red seaweed Gelidium amansii from Cikoang water, Takalar Regency, South Sulawesi. *Majalah Farmarmasi Farmakologi*. 15(1):47-52.

Darsana, I. Besung, I. Mahatmi, H. 2012. Potensi Daun Binahong (*Anredera Cordifolia* (Tenore) Steenis) dalam Menghambat Pertumbuhan Bakteri *Escherichia coli* secara In Vitro. *Indonesia Medicus Veterinus.*

Das Chagas Oliveira Freire, F. 2005. An updated list of plant fungi from Ceará State (Brazil)- I Hypomycetes. *Revista Ciência Agronômica.* 36(3): 364-370.

UNIVERSITAS GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
DIAN FITRIARNI, Rina Sri Kasiamdari, S.Si., Ph. D.; Dr. Tri Rini Nuringtyas, M.Sc.
Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Dandu, A., Reddy, N. V., Venkateswarlu, N., Pushpalatha, B., and Vijaya, T. 2014. Molecular identification of endophytic fungi isolated from *Rhynchosia beddomei*, an endemic medicinal plant of Tirumala Hills. *Res. J. Pharm, Biol. Chem. Sci.* 5:1280-1285.

Davis, W.W., and Stout T.R., 1971. Disc plate method of microbiological antibiotic assay: I factors influencing variability and error I. *Appl Microbiol*. 22(4):659-665.

Deacon, J.W. 1997. *Modern Mycology. 3rd ed*. Blackwell Science. Berlin.

Desvaux, N.A. 1826. Type: Hab. in Guiana?. *Annales des Sciences Naturelles*. 9: 423. http://keys.trin.org.au/key-server/data/0e0f0504-0103-430d-8004-060d07080d04/media/Html/taxon/*Calopogonium_mucunoides*.htm, diakses tanggal 4 Desember 2015.

Deon, M., Scomparin, A., Tixier, A., Mattos, C.R.R., Leroy, T., Seguin, M., Roeckel-Drevet, P., dan Pujade-Renaud, V. 2012. First characterization of endophytic Corynespora cassicola isolates with variant cassiicolin genes recovere from rubber trees in Brazil. *Fungal Divers*. 54:87-99.

Du, M., Schardl, C.L., Nuckles, E. M., Vaillancourt, L. J. 2005. Using mating-type gene sequences for improved phylogenetic resolution of *Collectotrichum* species complexes. *Mycologia.* 97(3):641–658.

Demain, A.L. 1999. Pharmaceutically active secondary metabolites of microorganisms. *Appl. Microbiol. Biotechnol*. 52: 455-463.

Desire, M. H., Bernard, F. Forsah, M. R., Assang, C.T., and Denis, O.N. 2014. Enzymes and qualitative phytochemical screening of endophytic fungi isolated from *Lantana camara* Linn. Leaves. *J. Appl. Biol. Biotechnol.* 2 (6): 001-006.

Dorothy, D. A., and Kandikere R.S. 2009. Assemblage and diversity of fungal associated with mangrove wild legume *Canavalia cathartica*. *Trop. and Subtrop. Agroecosystems*. 10:225−235.

Dreyfuss, M.M., and Chapela, I. H. 1994. *Potential of fungi in the discovery of novel, low-molecular weight pharmaceuticals*. pp. 49-80. *In* Gullo, V.P. (Ed.) *The discovery of natural products with therapeutic potential*, Butterworth-Heinemann, London, United Kingdom.

Douglas, S.M. 2012. Juniper Tip Blights. *The Connecticut Agricultural Experiment Station*. 1-4.

UNIVERSITAS
GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
DIAN FITRIARNI, Rina Sri Kasiamdari, S.Si., Ph. D.; Dr. Tri Rini Nuringtyas, M.Sc.
Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Ellis M.B., and Holiday P. 1971. *Descriptions of Pathogenic Fungi and Bacteria, Corynespora cassiicola*. Commonwealth Mycological Institute. Kew. United Kingdom. 303:1-2.

Enechi, O.C., Odo', C.E., and Okafor, C. 2014. Assessment of the anti-ulcer action of the leaves of Calopo (*Calopogonium mucunoides* Desv) in Wistar rats. *J. Pharmaceut. Res.* 8(1):24-27.

Fannidi, A dan Prawiradiputra, B.R. 2010. Karakteristik dan Pemanfaatan Kalopo (*Calopogonium* sp.). *Lokakarya Nasional Tanaman Pakan Ternak*. Balai Penelitian Ternak. Bogor. 149-154.

Farr, D.F., Castleburry, L.A., Rossman, A.Y. 2002. Morphological and molecular characterization of *Phomopsis vaccinii* and additional isolates of *Phomopsis* from blueberry and cranberry in the eastern United States. *Mycologia*. 94(3): 494-504.

Fitriyah, D., Jose, C., dan Saryono. 2013. Skrining Aktivitas Antimikroba Dan Uji Fitokimia dari Kapang Endofitik Tanaman Dahlia (*Dahlia variabilis*). *J. Ind. Chem. Acta*. 3(2).

Feist, P., 2010. TLC–Retention Factor (Rf). (Online). (http : // orgchem. colorado. edu/hndbksupport / TLC/TLCrf.html, diakses pada tanggal 12 Nopember 2015)

Ferguson, I. K. and Skvarla, J. J. 1983. The Granular Interstitium in the Pollen of Subfamily Papilionoideae (Leguminosae). *American. J. Bot*. 70 (9): 1401-1408.

Fernandes, G.W., Sanchez-Azofeifa, A.S., Oki, Y., and Ball, A. R. 2011. *Endophyte diversity mediates leaf optical properties*. (http://www.isprs.org/ proceedings/2011/ISRSE-4/211104015 Final 00609.pdf). Diakses Tanggal 16 Oktober 2014.

Gandjar, I., R.A. Samson, K. van den Tweel-Vermeulen, Oetari, A dan Santoso, I. 1999. *Pengenalan kapang tropik umum*, Yayasan Obor Indonesia, Jakarta.

Gandjar, I., dan R.A. Sjamsuridzal, W., dan Oetari, A. 2006. *Mikologi dasar dan terapan*, Yayasan Obor Indonesia, Jakarta.

Gandjar, I., dan Rohman, A. 2007. *Kimia Farmasi Analisis*, Pustaka Pelajar, Yogyakarta.

Garraway, M.O. and Evans, R.C. 1984. *Fungal Nutrition and Physiology*. New York. John Wiley and Sons.

UNIVERSITAS
GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
DIAN FITRIARNI, Rina Sri Kasiamdari, S.Si., Ph. D.; Dr. Tri Rini Nuringtyas, M.Sc.
Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Garcia A., Rhoden S.A., Bernardi-Wenzel J., Orlandelli R. C., Azevedo J.L., and Pamphile J.A. 2012. Antimicrobial Activity of Crude Extracts of Endophytic Fungi Isolated from Medicinal Plant *Sapindus saponaria* L. *J. Appl. Pharmaceut. Sci.* 2 (10): 035-040.

Gerald, M. 2007. Cook Islands Biodiversity Database, Version 2007, 2. Cook Islands Natural Heritage Trust, Rarotonga. Online at http://cookislands.bishopmuseum.org. Diakses tanggal 8 Maret 2015.

Gillespie, S.H. 1995. *Medical Microbiology Illustrated*. Butterworth Heinemann. London.

Glazer, A.N., and Nikaido, H.1998. *Microbial biotechnology : fundamentals of applied microbiology*. W.H. Freeman and Company. New York.

Govindappa M., Bharath, N., Shruthi, H.B., Sadananda, T.S., and Sharanappa, P. 2011. Antimicrobial, antioxidant and *in vitro* anti-inflammatory activity and phytochemical screening of *Crotalaria pallida* Aiton. *AJPP*. 5(1): 2359-2371.

Gonçalves, F J T., Freire, F D C O., Lima, J S. 2013. Fungos Endofíticos E Seu Potencial Como Produtores De Compostos Bioativos. *Ciências Agrárias*. 15(1):71-92.

Gritter, J. R., Bobbitt, J.M., Arthur and Schwarting, E. 1991. *Pengantar Kromatografi.* 2nd. Diterjemahkan oleh Kosasih Padmawinata. Penerbit ITB. Bandung.

Guo, L., Hyde, K.D., and Liew, E.C.Y. 1998. A Method to promote sporulation in Palm Endophytic Fungi. *Fungal Divers*. 1:109-113.

Hacker. 1990. *Australian Tropical Rainforest Plants : Calopogonium mucunoides*. (http :// keys. trin. org. au / key - server/ data/ 0e0f0504 -0103 -430d- 8004-060d07080d04/ media/ Html/ taxon/ *Calopogonium_mucunoides*.htm). Diakses pada tanggal 26 Desember 2014.

Hanson, J. R. 2008. *Kimia jamur*. Royal Society of Chemistry Publishing. 21-23.

Hambleton, S., Nickerson, N.L., Seifert, K.A. 2005. Leohumicola, a new genus of heat-resistant hypomycetes. *Stud. in Mycol*. 53: 29-52.

Harborne, JB. 1987. *Metode fitokimia penuntuk cara modern menganalisis tumbuhan*, Cetakan II, Diterjemahakan oleh Padinawinata, K dan Soediro, I., Institute Pertanian Bogor, Bogor.

Harrington, T.C., and Rizzo, D.M. 1999. Defining species in the fungi. In: Worrall JJ, ed. Structure and dynamics of fungal populations. *Kluwer Acad. Press*. 43–70.

UNIVERSITAS
GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
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Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

McNeil, B,. and Harvey, L.M. 2008. *The Design and Preparation of Media for Bioprocess*. *In* McNeil, B., and Harvey, L.M., (Eds.) *Practical Fermentation Technology*., John Wiley & Sons, Ltd., England, 99-114.

Hidayati N., Fauzia S, Titi J. 2005. Potensi *Centrocema pubescence*, *Calopogonium mucunoides*, dan *Micania cordota* dalam membersihkan logam kontaminan pada limbah penambangan emas. *Pusat Penelitian Biologi, Lembaga Ilmu Pengetahuan Indonesia (LIPI)*. Bogor.

Huang Y., Wang J., Li G., Zheng Z., Su W. 2001. Antitumor and antifungal activities in endophytic fungi isolated from pharmaceutical plants *Taxus mairei*, *Cephalataxus fortunei* and *Torreya grandis*. *FEMS Immunol. Med. Microbiol*. 31:163–167.

Huang, W.Y., Cai, Y.Z., Hyde, K.D., Corke, H., and Sun, M. 2008. Biodiversity of endophytic fungi associated with 29 traditional chinese medicinal plants. *Fungal Divers.*33: 61–75.

Hussain, H., Kock, I., Al-Harrasi, A., Al-Rawahi, A., Abbas, A., Green, I.R., Shah, A., Badshah, A., Saleem, M., Draeger, S., Schulz, B., Krohn, K. 2014. Antimicrobial chemical constituents from endophytic fungus *Phoma* sp. *Asian Pacific J. Trop. Med*. 699-702.

Hellwig, V., Grothe, T., Mayer-Bartschmid, A., Endermann, R., Geschke, F. U., Henkel, T., and Stadler, M. 2002. Altersetin, a new antibiotic from cultures of endophytic *Alternaria* spp. taxonomy, fermentation, isolation, structure elucidation and biological activities. *J. Antibiot.* 55(10): 881-892.

Hendra R, Ahmad S, Sukari A, Shukor MY, Oskoueian E. Flavonoid analyses and antimicrobial activity of various parts of *Phaleria macrocarpa* (Scheff.) Boerl fruit. *Int. J. Mol. Sci*. 2011;12: 3422-3431.

Heuzé V., Tran G., and Baumont R. 2013. Calopo (*Calopogonium mucunoides*). Feedipedia.org. A programme by INRA, CIRAD, AFZ and FAO. Diakses pada 5 Nopember 2014. http://www.feedipedia.org/node/328 Last updated on September 30, 2013, 13:17.

Holt, J.G., Krieg, N.R., Sneath, P.H.A., Staley, J.T., and William, S.T. 2000. *Bergey's manual of determinative bacteriology,* 9th edition, Lippincott William & Wilkins., Philadelphia, USA. p 347-559.

Hyde, K.D., and Soytong, K. 2008. The Fungal Endophyte Dilemma. *Fungal Divers*. 33:163-173.

UNIVERSITAS GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
DIAN FITRIARNI, Rina Sri Kasiamdari, S.Si., Ph. D.; Dr. Tri Rini Nuringtyas, M.Sc.
Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Hyde, K.D., Cai, L., Cannon, P.F., Crouch, J.A., Crous, P.W., Damm, U., Goodwin, P.H., Chen, H., Johnston, P.R., Jones, E.B.G.,, Liu, Z.Y., McKenzie, E.H.C., Moriwaki, J., Noireung, P., Pennycook, S.R., Pfenning, L.H., Prihastuti, H., Sato, T., Shivas, R.G., Tan, Y.P., Taylor, P.W.J., Weir, B.S., Yang, Y.L. and Zhang, J.Z. 2009. *Colletotrichum* –names in current use. *Fungal Divers*. 39: 147-182.

Ibrahim, D., Lee, C.C., and Sheh-Hong, L. 2013. Antimicrobial Activity of Endophytic Fungi Isolated from *Swietenia macrophylla* Leaves. *Nat. Prod. Commun*. 9(2):247-250.

Ichikawa T, Date M, Ishikura T, Ozaki A (1971) Improvement of kasugamycin-producing strain by agar piece method and the prototroph method. *Folia Microbiol (Prague)*. 16:214-218

Idu, M., and Onyibe, H.I. 2007. Medicinal plant of Edo State, Nigeria. *J. Med. Plant*. 1(2):32-41.

Idris, A., Al-tahir, I., and Idris, E. 2013. Antibacterial activity of endophytic fungi extracts from the medicinal plants Kigelia africana. *Agypt. Acad. J. Biolog. Sci*. 5(1): 1-9.

Ikeda S., Okubo T., Anda M., Nakashita, H., and Yasuda, M. 2010. Community and genome based views of plant-associated bacteria: plant-bacterial interactions in soybean and rice. *Plant Cell. Physiol*. 51:1398–410.

Ingold, C.T., Dann, V., and Mcdougall, P.J. 1968. *Tripospermum camelopardus* sp.nov. *Trans. Br. Mycol. Soc.* 51(1): 51-56.

Istiantoro, Y.H. and Ganiswarna, V.H.S. 1995. Penisilin, Sefalosporin, dan Antibiotik Beta Laktam lainnya. Didalam: Farmakologi dan Terapi. Editor: Sulistia G. Ganiswarna *et al*. Gaya Baru. Jakarta. 622-631

Jayadi, S. 1991. Tanaman Makanan Ternak Tropika, *Fakultas Peternakan. Institut Pertanian Bogor,* Bogor.

Jurković, D., Vrandečić, K., Ćosić, J., Riccioni, L., Duvnjak, T. 2007. Morphological Identification of *Diaporthe/Phomopsis* sp. Isolated from *Xanthium italicum*. Primljeno 10. Listopada. Prihvaćeno 21.

Joseph, B and Priya, R. 2011. Review: Bioactive compounds from endophytes and their potential in pharmaceutical efect. *American. J. Biochem. Mol .Bio*. 1(3):291-309.

Karou, D., and Aly, S. 2005. Antibacterial activity of alkaloids from *Sida acuta*. *African Journal of Biotechnology*. 4(12): 1452- 1457.

UNIVERSITAS GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
DIAN FITRIARNI, Rina Sri Kasiamdari, S.Si., Ph. D.; Dr. Tri Rini Nuringtyas, M.Sc.
Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Katoch M., Singh, G., Sharma, S., Gupta, N., Sangwan, P.L., and Saxena, A. K. 2014. Cytotoxic and antimicrobial activities of endophytic fungi isolated from *Bacopa monnieri* (L.) Pennell (*Scrophulariaceae*). *Biomed. Cent. Complementary and Altern. Med*. 14:1-8.

Khucharoenphaisan dan Sinma 2010. B-xylanase from *Thermomyces lanuginosus* and its Biobleaching Application. *Pakistan J. Biol. Scie*. 13(11):513-526.

Kiruthiga, Rakkimuthu, and Aravinthan, K. 2014. Antibacterial activity of *Crotalaria pallida* Aiton (Fabaceae). *Indian J. Pharm. Biol. Res*. 2(1):82-85.

Kim, J.Y., Yun, Y.H., Hyun, M.W., Kim, M.H., and Kim, S.H. 2010. Identification and Characterization of *Gliocladium viride* Isolated from Mushroom Fly Infested Oak Log Beds Used for Shiitake Cultivation. *Mycobiology*. 38(1) : 7-12.

Kumar, S., Kaushik, N., and Proksch, P. 2013. Identification of antifungal principle in the solvent extract of an endophytic fungus *Chaetomium globosum* from *Withania somnifera*. *SpringerPlus*. 2:37

Kumaresan, V. and Suryanarayanan, T.S. 2002. Endophytes assemblages in young mature and senescent leaves of *Rhizophora apiculata*: Evidence for the role of endophytes in mangrove litter degradation. *Fungal Divers.* 9: 81-91.

Kuhn, D.M., and Ghonnoum, M.A. 2003. Indoor Mold, Toxigenic Fungi, and *Stachybotrys chartarum*: Infectious Disease Perspective. *Clin. Microbiol. Reviews.* 16 (1): 144-172.

Kusari, S., Hertweck, C., and Spiteller, M. 2012. Chemical ecology of endophyte fungi: origins of secondary metabolites. *Chem. Biol*. 792-298

Kusmiyati, N.W.S., dan Agustini. 2007. Uji aktivitas senyawa antibakteri dari mikroalga *Porphyridium cruentum*. *Biodiversitas*. 8 (1): 48-53.

Kusumaningtyas, E. Natasia, M., dan Darmono. 2010. Potensi metabolit kapang endofit rimpang lengkuas merah dalam menghambat pertumbuhan *Eschericia coli* dan *Staphylococcus aureus* dengan media fermentasi *Potato Dextrose Broth* (PDB) dan *Potato Dextrose Yeast* (PDY). Seminar nasional teknologi peternakan dan veteriner. Bogor.

Kavanagh, K. 2005. *Fungi*. John Wiley dan Sons, New York..

Kirk P. 2004. Index Fungorum partnership. CABI Bioscience. [http://www.indexfungorum.org]. Diakses tanggal. 3 Nopember 2015.

UNIVERSITAS GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
DIAN FITRIARNI, Rina Sri Kasiamdari, S.Si., Ph. D.; Dr. Tri Rini Nuringtyas, M.Sc.
Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Kwon, J.H., and Park, C.S. 2003. Leaf Spot of Cotton Rose Caused by *Corynespora cassiicola* in Korea. *Mycobiology*. 31(1): 57-59 (2003)

Jawetz, E., Melnick, J.L., and Adelberg, E.A.1996. *Mikrobiologi Kedokteran, Edisi XX, 128, 239, 240*. Diterjemahkan oleh Nugroho, E., dan Maulany, R.F. Penerbit Buku Kedokteran EGC. Jakarta.

Jung, D.S., Na, Y. J., & Ryu, K.H. 2002. Phylogenic Analysis of *Alternaria brassicicola* Producing Bioactive Metabolites. *The J. Microbiol*. 40(4):289-294.

Li, H. Wang, Z. Liu, Y. 2003. Review in the studies on tannins activity of cancer prevention and anticancer. *Zhong-Yao-Cai*. 26(6): 444-448.

Li, Y., Song, Y.C., Liu, J.Y., Ma, Y.M. and Tan, R.X. 2005. Anti- *Helicobacter pylori* substances from endophytic fungal cultures. *World. J. Microbiol. Biotechnol*. 21: 553–558.

Liang, H., Xing, Y., Chen, Juan., Zhang, Dawei., Guo, S., and Wang, C. 2012. Antimicrobial activities of endophytic fungi isolated from *Ophiopogon japonicus* (Liliaceae). *Biomed. Cent. Complementary and Altern. Med*. 12:238.

Liang, Y, Z., Xie, P., dan Chan, K. 2004. Quality control of herbal medicines. *J. Chromatogr*. 53–70.

Llagas, M.C.D.L., Santiago, L., and Ramos, J.D. 2014. Antibacterial Activity of Crude Ethanolic Extract and Solvent Fractions of *Ficus pseudopalma* Blanco Leaves. *APJTD*. 4(5): 367-371.

Ma, Y. M., Li, Y., Liu, J. Y., Song, Y. C., and Tan, R. X. 2004. Anti-*Helicobacter pylori* metabolites from *Rhizoctonia* sp. Cy064, an endophytic fungus in *Cynodon dactylon*. *Fitoterapia*. 75(5): 451-456.

Madigan 2000, M.T., J.M. Martinko, & J. Parker. 2000. *Brock: Biology of microorganisms*. *9th ed*. Prentice Hall, New Jersey. 991.

Magyar, D., Gönczöl, J., Révay, Á., Grillenzoni, F. and Seijo-Coello, M.D.C. 2005. Stauro- and scolecoconidia in floral and honeydew honeys. *Fungal Divers*. 20: 103-120.

Margulis, L., and Chapman, M.J. 2009. *Kingdoms and Domain : An Illustrated Guide to The Phyla of Life on Earth*. Academic Press. 864 p.

Marcia González-Teuber, Guillermo H Jiménez-Alemán, & Wilhelm Boland. 2014. Foliar endophytic fungi as potential protectors from pathogens in myrmecophytic Acacia plants. *Communicative & Integrative Biol*. 7(5):1-4

UNIVERSITAS GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
DIAN FITRIARNI, Rina Sri Kasiamdari, S.Si., Ph. D.; Dr. Tri Rini Nuringtyas, M.Sc.
Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

McGinnis, M.R. 2012. *Laboratory Handbook of Medical Mycology*. Elsevier.

Mckenzie E.H.C., Buchanan, P. K. and Johnston, P. R. 2004. Checklist of fungi on nikau palm (*Rhopalostylis sapida* and *R. baueri* var. cheesemanii), in New Zealand. *New Zealand J. Bot*. 42: 335-355.

Madduluri, Suresh. Rao, K.Babu. Sitaram, B. 2013. In Vitro Evaluation of Antibacterial Activity of Five Indegenous Plants Extract Against Five Bacterial Pathogens of Human. *Int. J. Pharm. and Pharmaceut. Scie*. 5(4): 679-684.

Matsuura, S. 1999. Growth and Colony Patterning of Filamentous Fungi. *Forma*. 14 : 315-320.

Mirzwa-Mróz, E., Wińska-Krysiak, M., Dzięciol, R., Miękus, A., 2014. Characteristics of *Aureobasidium pullulans* (de bary et löwenthal) g. Arnaud isolated from apples and pears with symptoms of sooty blotch in Poland. *Acta Sci. Pol., Hortorum Cultus.* 13(3):13-22.

Misra, R.C. and Pani, D.R. 2014. Note on *Calopogonium mucunoides* Desv (Fabaceae): A new species record for Eastern and Central India. *Proc. Nat. Acad. Sci., India, Sect. B Biol. Sci*. Springer India.

Mufidah, Rante, H., Rahim, A., Agustina, R., Pakki, E., dan Talbani, A. 2013. Aktivitas Antifungi Metabolit Sekunder Fungi Endofit yang Diisolasi dari *Mezzetia parviflora* Becc. *Majalah Farmasi dan Farmakologi.* 17(3): 69- 72.

Merlin, N., christhudas, N., Kumar, Praveen., and Agastian. 2013. Optimization Of Growth And Bioactive Metabolite Production: Fusarium Solani. *Asian J. Pharmaceut. And Clin. Res.*. 6:98-103.

Mausa, W.K., and Raizada, M.N. 2013. Review: The diversity of anti-microbial secondary metabolites produced by fungal endophytes: an interdisciplinary perspective. *FCIMB*. 4(65):1-18.

Moretti, A.N. 2009. Taxonomy of *Fusarium* genus, a Continuous Fight Between Lumpers and Splitters. *Zbornik Matice srpske za prirodne nauke / Proc. Nat. Sci, Matica Srpska Novi Sad.* 117: 7-13.

Monica, D. 2014. Isolation of endophytic fungi from *Trigonellafoenum graecum* Linn. *Intr. J. Food Sci. Technol.* 2(1): 66-73.

Nachar, N., 2008. The Mann-Whitney U: A Test for Assessing Whether Two Independent Samples Come from the Same Distribution. *Tutorials in Quantitative Methods for Psychology*. 4(1): 13-20.

UNIVERSITAS GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
DIAN FITRIARNI, Rina Sri Kasiamdari, S.Si., Ph. D.; Dr. Tri Rini Nuringtyas, M.Sc.
Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Natheer, S.E., Sekar, C., Amutharaj, P., Rahman, M.S.A., and Keroz, Khan, K.K. 2012. Evaluation of antibacterial Activity of Morinda citrifolia Vitex trifolia and Chromolaena odorata. *Afr. J. Pharmaceut. Pharm.* 6(11):783-788.

Nuria, M.C., Faizaitun, Arvin, dan Sumantri. 2009. Uji Aktivitas Antibakteri Ekstrak Etanol Daun Jarak Pagar (*Jatropha Curcas* L) Terhadap Bakteri *Staphylococcus Aureus* ATCC 25923, *Escherichia Coli* ATCC 25922, dan *Salmonella Typhi* Atcc. *Mediagro*. 5(2):26–37.

Neideen, T. and Brasel, K.2007. Understanding Statistical Tests. *J. Surg. Educ.by Elsevier*. 64(2):93-96.

Nedialkova, D. & Naidenova, M., 2005, Screening the Antimicrobisl Activity of Actinomycetes Strains Isolated from Antartica. *J. Culture Collect*. 4: 29-35

Nelson, P.E., Dignani, M.C., and Anaissie, E. J. 1994. Taxonomy, Biology, and Clinical Aspects of Fusarium Speciest. *Clin. Microbiol. Rev. American Soc. for Microbiol*. 7(4): 479-504.

Nirenberg', H., And O'Donnell, K. 1998. New *Fusarium* species and combinations within the *Gibberella fujikuroi* species complex. *Mycologia.* 90(3):434-458.

Northolt, M.D., and Bullerman, L.B., 1982. Prevention of mold growth and toxin production through control of environmental condition. *J. Food Protect*. 6: 519-526.

Okeke MI., Iroegbu CU., Eze EN., Okali AS., and Esimone CO. 2001. Evaluation extracts of the root of Landophia owerrience for antibacterial activity. *J. Ethnophamacol*. 78: 119-127.

Panda, S.K. 2012. Screening Methods In The Study Of Antimicrobial Properties Of Medicinal Plants. *Int. J. Biotechnol. Res.* 2:1-35

Paranagama, P.A., Wijeratne, E.M.K., Burn A.M., Marron, M.T., Gunatilaka, M.K. Arnold, A. E., and Gunatilaka, A. A. L. 2007. Heptaketides from *Corynespora* sp. Inhabiting the Cavern Beard Lichen, Usnea caWernosa: First Report of Metabolites of an Endolichenic Fungus. *J. Nat. Prod*. 70: 1700–1705.

Pappas, P.A., and DePuy, V.. 2004. An Overview of Non-parametric Tests in SAS ® : When, Why, and How. *Duke Clinical Research Institute Durham.* USA. 1-5.

Patil, M.P., Patil, R. H., Maheshwari, VL. 2012. A novel and sensitive agar plug assay for screening of asparaginase-producing endophytic fungi from *Aegle marmelos*. *Acta Biologica Szegediensis*. 56(2):175-177.

UNIVERSITAS
GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
DIAN FITRIARNI, Rina Sri Kasiamdari, S.Si., Ph. D.; Dr. Tri Rini Nuringtyas, M.Sc.
Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Photita, W., Lumyong, S., Lumyong, P., Mckenzie, E.H.C. and Hyde, K.D. (2004). Are some endophytes of *Musa acuminata* latent pathogens?. *Fungal Divers.* 16: 131-140.

Pitt, J.I. and A.D. Hocking, 2009. *Fungi and Food Spoilage. 3rd Edn*. Springer, USA. 519.

Petersen, P.J., Wang, T.Z., Dushin, R.G., Bradford, P.A. 2004. Comparative in vitro activities of AC98-6446, a novel semisynthetic glycopeptides derivative of the natural product mannopeptimycin alpha, and other antimicrobial agents against gram-positive clinical isolates. *Antimicrob. Agents. Chemotheraphy*. 48:739–746.

Petrini, O. 1991. *Fungal endophytes of tree leaves*. In: Andrews JH and Hirano SS, (Eds). *Microbial Ecology of Leaves*. Spring Verlag. New York. 179-197.

Poongothai G., and Shubashini K. Sripathi. 2013. Review: On insulinomimetic pinitol from plants. *Int. J. Pharma. Bio Sci*. 4(2): 992 – 1009.

Pokhrel, C.P., and Ohga, S. 2007. Submerged culture conditions for mycelial yield and polysaccharides production by *Lyophyllum decastes*. *Food Chem.* 105: 641-646.

Pongpaichit, S., Nikom, J., Rungjindamai, N., Sakayaroj, J., Hutadilok-Towatana, N.P., Rukachisirikul, V., and Kirtikara, K. 2007. Biological activities of extracts from endophyte fungi isolated from *Garcinia* plants. *FEMS Immunol. Med. Microbiol*. 51: 517-525.

Phowtong, P., Jantrapanukorn, B., Thongmee, A., and Suntornthiticharoen, P. 2013. Screening of antimicrobial activities of the endophytic fungi isolated from *Sesbania grandiflora* (L.) Pers. *J. Agr. Sci. Technol*. 15: 1513-1522.

Pimentel, I. C., Glienke-Blanco, C., Gabardo, J., Stuart, R. M., and Azevedo, J. L. 2006. Identification and Colonization of Endophytic Fungi from Soybean (*Glycine max (L.) Merril*) under Different Environmental Conditions. *Brazilian Archives Of Biol. Technol. An Intern. J*. 49(5): 705-711.

Pelczar M.J., dan Chan .E.C.S. 2005. *Dasar-dasar Mikrobiologi*. *In* Hadioetomo RS, Imas T., Tjitrosomo S.S., dan Angka S.L. (Eds) *Elements of Microbiology*. UI Press. Jakarta.

Perdomo, H., Sutton, D.A., Garcia, D., Forthergill, A. W., Cano, J., Summerbell, R.C., Rinaldi, M.G., Guarro, J. 2011. Spectum of Clinically Relevant Acremonium Species in The United States. *J. Clin. Microbiol*. 243-256.

UNIVERSITAS
GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
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Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Petre M., Peng M.X., Mao L.X. 2005.The influence of culture conditions on fungal pellets formation by submerged fermentation of *Cordyceps sinensis* (*Paecilomyces hepiali*)- Cs 4. *Acta Edulis Fungi.* 12: 345-353.

Pradeep, F.S., Begam, M.S., Palaniswamy, M., and Pradeep, B.V. 2013. Influence of Culture Media on Growth and Pigment Production by *Fusarium moniliforme* KUMBF1201 Isolated from Paddy Field Soil. *World Appl. Scie. J.* 22 (1): 70-77.

Prihanto, A.A. 2012. Perbandingan aktivitas antibakteri *Penicillium notatum* ATCC28089 Dengan *Penicillium* sp. R1M yang Diisolasi dari Mangrove *Sonneratia caseolaris*. *PHP*. 15(1).

Promputtha, I., Jeewon, R., Lumyong, S., McKenzie, E.H.C., and Hyde, K.D. 2005. Ribosomal DNA fingerprinting in the identification of non sporulating endophytes from *Magnolia liliifera* (Magnoliaceae). *Fungal Divers*. 20:167-186.

Qui, M., Xie, R., Shi, Y., Zhang, H., Chen, H. 2010. Isolation and identification of two flavonoid-producing endophytic fungi from *Ginkgo biloba* L. *Ann. Microbiol*. 60 : 143-150.

Rahman MA., Ahsna, T., and Islam, S.2010. Antibacterial and antifungal properties of methanol extract from the stem of *Argyreia argentea,* Bang. *J. Pharmacol*. 5: 41-44.

Ramesha, A., Sunita, V.H., and Srinivas, C. 2013. Antimicrobial activity of secondary metabolites from endophytic fungi isolated from *Nerium oleander* L. *Int. J. Pharm. Bio. Sci*. 4(1): (B) 683-693.

Ramesha, A., and Srinivas, C. 2014. Antimicrobial activity and phytochemical analysis of crude extracts of endophytic fungi isolated from *Plumeria acuminata* L. and *Plumeria obtusifolia* L. *Europe J. Exp. Biol*. 4(2):35-43.

Raviraja NS, Maria GL, and Sridhar KR. 2006. Antimicrobial evulation of endophytic fungi inhabiting medicinal plants of the Western Ghats of India. *England Life Sci*. 6515-6520.

Russel A.D. and Chopra I.1990. *Understanding Antibacterial Action and Resistance*. Ellis Hooword. New York. 68-72.

Redko- F., Clavin, M.D., Weber D., Anke T., and. Martino V. 2006. Search for active metabolites of *Erythrina crista-galli* and its endophyte *Phomopsis* sp. *Molecular Medicinal Chem*. 10:24-26

UNIVERSITAS GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
DIAN FITRIARNI, Rina Sri Kasiamdari, S.Si., Ph. D.; Dr. Tri Rini Nuringtyas, M.Sc.
Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Reed, D.W. 2007. *Horticulture Science and Practice: Applied Physiology of Horticultural Crop*. (http : // generalhorticulture. tamu. edu/ lectsupl/ anatomy/ anatomy. html). Diakses pada tanggal 25 Desember 2014.

Révay, A., and Gönczöl, J. 2011. Canopy fungi ("terrestrial aquatic Hyphomycetes") from twigs of living evergreen and deciduous trees in Hungary. *Nova Hedwigia*. 92:303–316

Reyes-Estebanez, M., Herrera-Parra, E., Cristóbal-Alejo, J, Heredia- Abarca. G., Canto-Canché, B., Medina-Baizabal, I., and Gamboa-Angulo, M. 2011. Antimicrobial and nematicidal screening of anamorphic fungi isolated from plant debris of tropical areas in Mexico. *African J. Microbio. Res*. 5(9):1083-1089.

Robinson, T. 1995. *Kandungan Senyawa Organik Tumbuhan Tinggi*. Diterjemahkan oleh Kosasih Padmawinata. ITB. Bandung.

Rodrigues, A. A. C., and Menezes, M. 2006. Identification and pathogenic Characterization of endophytic *fusarium* Species from Cowpea seeds. *Anais da Academia Pernambucana de Ciência Agronômica*. 3:203-215.

Rodriguez, R. J., Arnold, J. F., White Jr, A. E. and Redman, R. S. 2008. Review Fungal endophytes: diversity and functional roles. *New Phytol*. 1-17.

Roza, L.V., Chanda, A., & Linz, J.E. 2011. Compartmentalization and molecular traffic in secondary metabolism: a new undestanding of established cellular processes. *Fungal Genet. Biol*. 48: 35–48.

Ryan, K. J. & C. J. Ray. 2004. *Sherris medical microbiology: an introduction to infectious diseases*, 4th edition, The McGraw Hills Companies, Inc., New York, 937p.

Rydberg, J. 2004. *Solvent Extraction Principles and Practice*, 2nd edition , CRC, New York, 750p.

Saha, S., Dhanasekaran, D., Chandraleka, S., and Panneerselvam, A. 2009. Synthesis, characterization and antimicrobial activity of cobalt metal complex against multi drug resistant bacterial and fungal pathogens. *Facta Universitatis.*7(1): 73 – 80.

Salleh, B., Safinat, a., Julia, L., and Teo, C.H. 1996. Brown spot caused by *Curvularia* spp., a new disease of asparagus. *Biotropia*. 9: 26 - 37

Saithong, P., Panthavee, W.,Stonsaovapak, S., and Congfa, L. 2010. Isolation and primary identification of endophytic fungi from *Cephalotaxus mannii* trees. *Maejo Int. J. Sci. Technol*. 4(03):446-453.

Salle, A.J. 1954. *Fundamental principles of bacteriology*, 4th edition , McGraw-Hill Book Company, Inc., New York, 782p.

UNIVERSITAS
GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
DIAN FITRIARNI, Rina Sri Kasiamdari, S.Si., Ph. D.; Dr. Tri Rini Nuringtyas, M.Sc.
Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Saleh, B., Safina, A., Julia, L., and Teo, C.H. 1996. Brown spot caused by Curvularia spp., a new disease of Asparagus. *Biotropia*. 9:26-37.

Santos, IP, Silva, LCN, Silva, MV, Araújo, JM, Cavalcanti, MS and Lima, VLM (2015) Antibacterial activity of endophytic fungi from leaves of *Indigofera suffruticosa* Miller (Fabaceae). *Front. Microbiol*. 6:350.

Santos, C, Paterson, R.R., Venâncio, A., and Lima, N. 2010. Filamentous fungal characterizations by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry. *J. Appl. Microbiol*. 108(2):375–85.

Sarker S.D., Latif Z., and Gray A.I. 2006. Natural products isolation. In: Sarker SD, Latif Z, & Gray AI, editors. Natural Products Isolation. 2nd ed. Totowa (New Jersey). *Humana Press Inc*.18: 6-10.

Saryono. 2010. *Metodologi Penelitian Kesehatan Penuntun Praktis Bagi Pemula*. Mitra Cendikia Press. Jogjakarta.

Sauza, M.A.D' and Hiremath, K.G. 2015. Isolation and bioassay screening of medicinal plant Endophytes from Western Ghats forests, Goa, India. *Int. J. Adv. Res. Biol.Sci*. 2(8):176–190.

Scott, J.A., Untereiner, W.A., Ewaze, J.O., Wong, B., Doyle, D. 2007. *Baudoinia*, a new genus to accomodate *Torula compniacensis*. *Mycologia*. 99(4): 592-601.

Schaible, G.A., & Strobel, G.A., Mends, M.T., Geary, B., Sears, J. 2014. Characterization of an Endophytic *Gloeosporium* sp. and Its Novel Bioactivity with "Synergistans". *Microbiol. Ecol*.

Schulz, B., Boyle, C., and Draeger, S. 2002. "Endophytic fungi: a source of biologically active secondary metabolites". *Mycol Res*. 106: 996-1004.

Schulz, B., and Boyle, C. 2005. The endophyte continumm. *Mycol. Res*. 109:661-686.

Shenoy, B.D., Jeewon, R., and Hyde, K.D. 2007. Impact of DNA sequence-data on the taxonomy of anamorphic fungi. *Fungal Divers*.26: 1-54.

Sihombing A., Fatonah, S., and Silviana F. 2012. Pengaruh alelopati *Calopogonium mucunoides* Desv.terhadap perkecambahan dan pertumbuhan anakan gulma *Asystasia gangetica* (L.) T. Anderson. *J. Biospecies*. 5 (2): 5 – 11.

Silva, M.R.O., Almeida, A.C., Arruda, F.V.F., and Gusmão, N. 2011. Endophytic fungi from brazilian mangrove plant *Laguncularia racemosa* (L.) Gaertn. (Combretaceae): their antimicrobial potential. *Science against Microbial Pathogen: Comm. Curr. Res. Technol. Adv*. 2:1260-1266.

UNIVERSITAS GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
DIAN FITRIARNI, Rina Sri Kasiamdari, S.Si., Ph. D.; Dr. Tri Rini Nuringtyas, M.Sc.
Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Sugiyama, J. 1987. *Pleomorphic Fungi:The Diversity and Its Taxonomic Implications*. Kodansha Ltd. Tokyo. 324.

Sun, J., Guo, L., Zhang, W., Ping, W., and Chi, D. 2008. Diversity and ecological distribution of endophyte fungi associated with medicinal plants. *Sci. China Ser C-Life Sci*. 51(8): 751-759.

Suryanarayanana T.S., Thirunavukkarasub N., Govindarajulub M.B., Sassec F., Jansend R., and Murali T.S. 2009. Fungal endophytes and bioprospecting. *Fungal Biol. Rev*. 23(2): 9-19.

Suthep, W., Nongluksna, S., Wattana , P., Nuntawan , T., Kanawat, D., Nijsiri , R., and Vithaya, M. 2014. Endophytic fungi with antimicrobial, anti-cancer and anti-malaria activities isolated from thai medicinal plants. *World J. Microbiol. Biotechnol*. 20: 265-272.

Sutton. 1980. The Coelomycetes. *Commonwealth Mycological Institute, Kew, Surrey, England*. 522–537.

Selim, KA, El-Beih, A.A, AbdEl-Rahman, TM, and El-Diwany, AI. 2012. Biology of endophytic fungi. *Curr. Res. Environ. Appl. Mycol*. 2(1):31–82.

Selvi, B. K., and Balagengatharathilagam, P. 2014. Isolation and screening of endophytic fungi from medicinal plants of Virudhunagar District for antimicrobial activity. *Int. J. Scie. Nat.* 5(1): 147-155.

Sedlář J., Sedlářová M., and Flusser J. 2009. *Image Processing Methods For Determination Of Downy Mildews From Light Microscopy Images*. *In*: Kulpa K, Kaska W.(Eds) *Signal Processing Symposium Proceedings*, Warsaw University of Technology, Warsaw.

Senna, S., and Sridhar, K.R. 2004. Endophytic fungal diversity of 2 sand dune wild legumes from the southwest coast of India. *Canadian J. Microbiol*. 50: 1015–1021.

Soladoye M. O., Ikotun T., Chukwuma E. C., Ariwaodo J. O., Ibhanesebor G. A., Agbo-Adediran O. A., and Owolabi S. M. 2014. Our plants, our heritage: preliminary survey of some medicinal plant species of Southwestern University Nigeria Campus, Ogun State, Nigeria. *Ann. Biol. Res*. 4 (12):27-34.

Schardl, C.L. and Phillips, T.D. 1997. Protective grass endophytes: Where are they from and where are they going?. *Plant. Disease*. 81(5): 430-438.

Schulz, B., Drager, U.W.S., and Aust, HJ. 1993. Endophytes from herbaceous plants and shrubs: effectiveness of surface sterilization methods. *Mycol. Res*. 97: 1447-1450.

UNIVERSITAS
GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
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Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Schwarz, M., Köpcke, B., Weber, R., Sterner, O. and Anke, H. 2004. 3-Hydroxypropionic acid as a nematicidal principle in endophytic fungi. *Phytochemistry*. 65(15): 2239-2245.

Shearer, J.F. 2001. Recovery of Endophytic Fungi from *Myriophyllum spicatum*. *US Army Eng. Res. & Dev. Cent*. US.

Shankar, N.B., and Shashikala, J. 2010. Diversity and structure of fungal endophytes in some climbers and grass species of Malnad Region, Western Ghats, Southern India. *Mycosphere*. 1:265-274.

Sherma, J. & Fried, B. 2003. *Handbook of thin-layer chromatography*, 3rd edition, Marcel Dekker, Inc., New York, 997p.

Skerman, P.J. 1977. *Tropical Forage Legumes*, Food and Agriculture Organization of The United Nations, Rome, 609p.

Stierle, A., Strobel, G. A., and Stierle, D. 1993. Taxol and taxane production by *Taxomyces andreanae*, an endophytic fungus of pacific yew. *Science*. 260(5105) : 214-216.

Striegel, M.F., dan Hill, J. 1996. *Thin-Layer Chromatography for Binding Media Analysis*. The J. Paul Getty Trust. The United State of America.

Stevenson, G.B. 1970. *The biology of Fungi, Bacteria, and Virus*. 2nd edition. Edward Arnold Publisher. London. 48-49.

Stone, J.K., Polishook J.D., and White J.F. 2004. *Endophytic Fungi. In: Biodiversity of Fungi. Inventory and Monitoring Methods. In* Mueller G.M., Bills G.F., Foster M.S.(Eds) Elsevier Academic Press, San Diego, United State of America. 241-270.

Strobel, G.A. 2004. Natural products from endophytic microorganism. *J. Nat. Prod*. 67:257-268.

Strobel, G., and Daisy, B. 2003. Bioprospecting for microbial endophytes and their natural products. *Microbiol. Mol. Biol. Rev*. 674: 491–502.

Tan, X.R., and Zou, W. X.. 2001. Endophytes: A rich source of functional metabolites. *Nat. Prod. Rep.* 18:448-459.

Tarman, K., Lindequist, U., Wende, K., Porzel, A., Arnold, N., & Wessjohann, L. A. 2011. Isolation of a new natural product and cytotoxic and antimicrobial activities of extracts from fungi of Indonesian marine habitats. *Marine Drugs*. 9(3) :294-306.

Taylor, J.W. 2011. One Fungus, One Name: DNA and fungal nomenclature twenty years after PCR. *IMA Fungus.* 2(2): 113–120.

UNIVERSITAS GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
DIAN FITRIARNI, Rina Sri Kasiamdari, S.Si., Ph. D.; Dr. Tri Rini Nuringtyas, M.Sc.
Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Tenguria, R.K., and Firodiya, A. 2013. Diversity of endophytic fungi in leaves of *Glycine max* (L.) Merr. from central region of Madhya Pradesh. *World J. Pharm. Pharm. Sci.* 2 :5928-5934.

Tikoo, A, Shakri, R., Conolly, L., Hirokawa, Y., Shishido, T., Bowers, B., Ye, L., Kohama, K., Simpson, R. J., and Maruta, H. 2000. Treatment of ras-induced cancers by the factin-bundling drug MKT-077. *Cancer J.* 6(3): 162-168.

Teles, H.L., Teles, J.S., Silva, G.H., Gamboa, I.C., Bolzani, V.S., Pereira, J.O., Costa-Neto, C. 2005. Benzopyrans from *Curvularia* sp., an endophytic fungus associated with *Ocotea corymbosa* (Lauraceae). *Phytochemistry*. 66(19):2363-7.

Tong, W.Y., Darah, I., and Latiffah, Z. 2011. Antimicrobial activities of endophytic fungal isolates from medicinal herb *Orthosiphon stamineus* Benth. *J. of Med. Plants*. 5(5): 831-836.

Touchstone, J.C. 1992. *Practice of Thin Layer Chromatography*. 3rd. John Wiley & Sons. Canada.

Tredway, L.P., and Burpee, L.L. 2001. *Rhizoctonia* diseases of turfgrass. *The plant health instructor*.

Tuppad, D.S., and Shishupala, S. 2014. Evaluation of endophytic fungi from *Butea monosperma* for antimicrobial and enzyme activity. *J. of Medicinal Plants Studies*. 2(4): 38-45.

Umashankar, T., Govindappa, M. and Ramachandra, Y.L. 2014. In vitro antioxidant and antimicrobial activity of partially purified coumarins from fungal endophytes of *Crotalaria pallida*. *Int. J. Curr. Microbiol. Appl. Sci.* 3(8):58-72.

Venkatesan G, Suryanarayanan S. 2013. Fungi associated with the leaves of some hydrophyte plants. *Int. J. Curr. Res. Dev*.1 (1): 53-69.

Von Arx, A.JA. 1970. A revision of the fungi classified as *Gloeosporium*. *Bibliotheca. Mycologica.* 24:1–203.

Waller, F., Achatz, B., Baltruschat, H., Fodor, J., Becker, K., Fischer, M., Heier, T., Hückelhoven, R., Neumann, C., Ditervon, W., Franken, P. and Kogel, K.H.2005. The endophytic fungus *Piriformospora indica* reprograms barley to saltstress tolerance, disease resistance, and higher yield. *Proceedings of the National Academy of Sciences of the United States of America*. 102(38):13386-13391.

Wagner, H. and Bladt, S. 1996. *Plant Drug Analysis: A thin layer chromatography atlas*. 2nd edition, Springer-Verlag, New York, 384 p.

UNIVERSITAS GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
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Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Wang, Y., and Dai, C.C. 2011. Endophytes: a potential resource for biosynthesis, biotransformation and biodegradation. *Ann. Microbiol*. 61: 207–215.

Wang, Y.N., Shao, C.L., Zheng, C.J., Chen, Y.Y., and Wang, C.Y. 2011. Diversity and Antibacterial Activities of Fungi Derived from the *Gorgonian Echinogorgia rebekka* from the South China Sea. *Mar. Drugs.* 9: 1379-1390.

Watanabe, T. 2002. *Pictorial atlas of soil and seed fungi; morphologies of cultured fungi and key to species. 2nd ed*. CRC Press. United State of America.

White, R.E. 2009. *Principles and practices of soil science.*Wiley-Blackwell. 384

Wu, J., Cheung, P.C.K., Wong, K., and Huang, N. 2004. Studies on submerged fermentation of *Pleurotus tuber-regium* (Fr.) Singer. Part 2: effect of carbon-to-nitrogen ratio of the culture medium on the content and composition of the mycelial dietary fibre. *Food Chemist.* 85: 101-105.

Weishampel, P. and Bedford, B. 2006. Wetland dicots and monocots differ in colonization by arbuscular mycorrhizal fungi and dark septate endophytes. *Mycorrhiza*. 16(7): 495-502.

Woodson, RE., Jr., Schery, R.W., Dwyer, J.D., D'Arcy, W. G., Dillon M.O., White, P.S., Poston, M.E., Frantz, P.R., Windler, D.R., McLaughlin, L; Schubert, B. G., Maxwell, R.H., Dunn, D.B., and Lackey, J.A. 1980. Flora of Panama. Part V. Family 83. Leguminosae. Subfamily Papilionoideae (Conclusion). *Ann. Missouri Bot. Gard*. 67(3): 523-818.

Xiaoling, C., Xiaoli, L., Shining, Z., Junping, G., Shuiping, W., Xiaoming, L., Zhigang, S., and Yongcheng, L. 2010. Cytotoxic and topoisomerase I inhibitory activities from extracts of endophytic fungi isolated from mangrove plants in Zhuhai, China. *J. Ecol. Nat. Environ*. 2(2):017-024.

Xu, Z., Harrington, T.C., Gleason, M.L., and Batzer, J.C. 2010. Phylogenetic placement of plant pathogenic *Sclerotium* species among teleomorph genera. *Mycologia*. 102(2):337–346

Yadav, M., Yadav A., Kumar S., Sharma D., and Yadav, J.P. 2014. Evaluation of in vitro antimicrobial potential of endophytic fungi isolated from *Eugenia jambolana* Lam. *Int. J. Pharmaceut. Pharm. Sci*. 6(5): 208-211.

Yang, S.M., Dowler, W. M. And Johnson, D.R. Comparison of methods for selecting fungi pathogenic to leafy spurge. *Plant Dis*. 75(12):1201-1203.

Yang, X., Strobel, G.A., Stierle, A., Hess, W.M., Lee, J. and Clardy, J. 1994. A fungal endophyte-tree relationship; *Phoma* sp. in *Taxus wallichiana*. *Plant. Sci.* 102:1-9.

UNIVERSITAS
GADJAH MADA
IDENTIFIKASI FUNGI ENDOFIT DAN GOLONGAN SENYAWA BIOAKTIF TANAMAN Calopogonium mucunoides SEBAGAI ANTIBAKTERI Escherichia coli DAN Staphylococcus aureus
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Universitas Gadjah Mada, 2015 | Diunduh dari http://etd.repository.ugm.ac.id/

Yu, H., L. Zhang, L. Li, C. Zheng, L. Guo, W. Li, P. Sun, & L. Qin. 2010. Recent development and future prospects of antimicrobial metabolites produced by endophytes. *Microbiol*. *Res*. 165(6): 437-449.

Zablotowicz, R. M., Hoagland, R. E., and Wagner, S. C.1996. *Effect of Saponin on The Growth and Activity of Rizophere Bacteria*. *In* Naidu, A. S. (ed). *Natural Food Microbial Systems*. CRC Press. USA.

Zalar, P., Gostinčar, C., de Hoof, G.S., Uršič, V., Sudhadham, M., and Gunde-Cimerman, N. 2008. Redefinition of *Aureobasidium pullulans* and its varieties. *Stud. in Mycol*. 61: 21–38.

Zeilinger, S., Francisco-Martín, J., García-Estrada, C. 2015. Biosintesis dan Genetika Molekuler dari jamur sekunder Metabolit, Volume 2. *Springer*. 86-88.

Zhang, H.W., Song, Y.C., Tan, R.X. 2006. Biology and chemistry of endophytes. *Nat. Prod. Rep*. 23: 753–771.

Zhao, L., Zhou, J., Wang, T., Shan, L., Zhong, X., Liu and X, Gao. 2010. Endophytic fungi for producing bioactive compounds originally from their host plants. *Curr. Res. Technol. Edu. Topics in Appl. Microbiol. Microbiological Biotechnol*. 2: 567-576.

Zhou, Y., Zhang, Y., Li, J., Meng, X., Zhao, J., He, W., and Zhou, L. 2011. Antibacterila and antioxidant activities of the endophytic fungi from medicinal herb Trillium tschonoskii. *African J. Microbiol. Res.* 5(27): 4971-4921.

Zuber, A., Kowalczyk, M., Sekula, A., Mleczko, P., and Kupiec, T. 2011. Method used in species identification of hallucinogenic and other poisonuous mushrooms in forensic investigations. *Prob. Foren. Sci*. 86:151–161.