

PROFIL DOSEN

DATA PRIBADI

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Jabatan Fungsional : Guru Besar
Pangkat/Golongan : Pembina/Tk I/IVb
Fakultas/Departemen : MIPA/Biologi
Bidang Kekhususan : 1. Microbial Biochemistry
2. Environmental Biodegradation and
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PENDIDIKAN

PENDIDIKAN UTAMA

Stratum	Tahun	Universitas/Tempat
S3	2002	Kyoto University, Japan Disertasi : A Novel Mechanism for Oxalic Acid Biosynthesis Coordinating with Energy Generating System in Wood-rooting Basidiomycetes.
S2	1995	Tuskegee University, Tuskegee, Alabama, USA
S1	1989	Universitas Andalas, Padang, Indonesia

PENDIDIKAN TAMBAHAN

Tahun	Lembaga/Tempat
2002	Kerjasama riset dalam metabolisme asam organik di Kyoto University, Kyoto, Japan (3 bulan)
1998	Kursus Bahasa Jepang di Kyoto University, Kyoto, Japan (4 bulan)
1992	Kursus di Economic Institute, Colorado University, Boulder, USA (4 bulan)
1992	Kursus Bahasa Inggris, The British Institute, Bandung (4 bulan)
1991	Kursus Bahasa Inggris, Universitas Sriwijaya, Palembang (7 bulan)

PENGALAMAN PEKERJAAN

Tahun	Jabatan
2006 – Sekarang	Sekretaris Program Magister PSL, USU
2006 – Sekarang	Kepala Laboratorium Mikrobiologi, FMIPA USU
2005 – Sekarang	Staf Ahli Rektor Bidang Akademik
1995 – 1997	Sekretaris Departemen Biologi, FMIPA USU

MATA KULIAH YANG DIASUH

1. Fisiologi Mikroba, S2 Biologi, USU
2. Ekologi Mikroba, S2 Biologi, USU
3. Bioremediasi, S2 Biologi dan S2 PSL, USU
4. Kimia Lingkungan, S2 PSL, USU
5. Mikrobiologi Lingkungan, S1 Biologi, FMIPA, USU
6. Mikrobiologi, S1 Biologi, FMIPA USU
7. Biokimia, S1 Biologi, FMIPA USU
8. Enzimologi, S1 Biologi, FMIPA USU

PUBLIKASI ILMIAH

Tahun	Judul
2006	"Bioconversion of oil palm trunk derived lignocelluloses to sugars". Developing Technology for Decomposition of Fresh Solid Wastes of Plantation under Tropical Condition, IPB Press, Bogor.

"Role of oxalate biosynthesis in growth of copper tolerant wood rooting and pathogenic fungi". Sustainable Development and Utilization of Tropical Forest Resources. Edited by Imamura et al. (pp. 148-153).

"Subcellular localization of glyoxylate cycle key enzymes involved in oxalate biosynthesis off wood-destroying basidiomycete *Fomitopsis palustris*". Microbiology, Vol. 152 : 1857-1866.

"Uji Brine-shrimp dan Pengaruh Ekstrak Metanol Daun Tumbuhan Pradep (*Psychotria stipulaceae* Wall (Familia : Rubiaceae)) Terhadap Mikroba". Jurnal Media Farmasi. Vol. 14 : 85-92.

"Potensi Pemanfaatan mikroba dalam bioremediasi : Suatu teknologi alternative untuk pelestarian lingkungan". Pidato Pengukuhan Guru Besar. Universitas Sumatera Utara, Medan. (pp. 1-23).

2005 "An Inhibitory effect of acetate added to the culture on growth of wood rotting basidiomycetes". The sixth International Wood Science Simposium. Bali, Indonesia. (pp. 405-410).

"Subcellular localization of glyoxylate cycle key enzymes involved in oxalate biosynthesis of wood-destroying basidiomycetes *Fomitopsis palustris* grown on glucose". The sixth International Wood Science Symposium, Bali Indonesia. (pp. 411-417)

"Characterization of cDNA *FPICLI* encoding isocitrate lyase from woodrotting basidiomycetes *Fomitopsis palustris*". The sixth International Wood Science Symposium. Bali Indonesia.

"Role of oxalate biosynthesis for the growth of the copper tolerant wood rotting fungi under environmental stress". The 55th Annual Meeting of the Japan Wood Research Society at Kyoto University, Kyoto. Paper Q60945 p. 135.

"Journal Impact Factor" dasar penentuan mutu jurnal ilmiah. Jurnal Perkasa. Sekolah Pascasarjana USU. Vol. 9: 35-37.

"Peranan asam oksalat dalam degradasi lignoselulosa". Seminar Nasional Kimia II. Medan. (pp. 1-7).

2004 "Isositrat liase sebagai enzim target perancangan obat". Journal Media Farmasi. Vol. 12: 13-21.

"Profile of enzyme activity and growth of wood rotting fungi in metal ion containing media". The Fifth International Wood Science Symposium. Kyoto Japan. (pp. 281-286).

"The distribution of tropical mushrooms in sibolangit conservation forest, North Sumatra, Indonesia". The Fifth International Wood Science Symposium. Kyoto Japan. (pp. 276-280).

"Subcellular localization of isocitrate lyase in the wood rotting destroying basidiomycetes *Fomitopsis palustris*". The Fifth International Wood Science Symposium. Kyoto Japan. (p. 231)

"Bioremediation of CCA-treated wood by brown-rot fungi *Fomitopsis palustris*, *Corriophora puteana*, and *Laetiporus sulfurous*". Journal of Wood Science, Vol. 50: 182-188.

"A novel physiological aspect of wood-destroying Basidiomycetes". Proceedings of the 4th Regional coordination of wood science international symposium. St. Petersburg, Rusia. (pp. 467-468).

2003 "A new aspect of oxalic acid biosynthesis in biochemistry of basidiomycetes". Workshop and Expose of Fundamental Research Scientific Result of LIPI-JSPS Cooperation Program. (pp. 81-87).

"A possible role of unique TCA cycle in wood-rotting basidiomycetes". Intern. Res. Group on Wood Preserv. Doc. No. IRG/WP 01-10394 (Stockholm). (pp. 1-6).

"Removal of copper, chromium, and arsenic from CCA-treated wood by bioremediation with brown-rot fungi". The 53rd Annual Meeting of the Japan Wood Research Society. Sizuoka, Japan. Paper Q231045.

"Peranan asam oksalat dalam system biologi dan lingkungan". Orasi Ilmiah Dies Natalis Universitas Sumatera Utara ke-51, Universitas Sumatera Utara, Medan. (pp. 1-17).

"Kamus Mikrobiologi Modern dan Bioteknologi". Edisi Pertama. USU Press. 211 pages.

2002 "Purification and characterization of isocitrate lyase from the wood destroying basidiomycete *Fomitopsis palustris* grown on glucose". Archive Biochemistry and Biophysics, Vol. 399: 225-231.

"Purification and characterization of malate synthase from the glucose-grown wood-rotting basidiomycete *Fomitopsis palustris*". Journal of Bioscience Biotechnology and Biochemistry, Vol. 66: 576-581.

"Oxalate fermentation by wood-rotting fungi vs. normal respiration". Semirata bidang MIPA BKS-PTN Wilayah Barat Indonesia yang ke XV. Medan. (pp. 1-10).

"Chromatographic profile of isocitrate lyase during purification". Jurnal Media Farmasi, Vol. 10: 162-173.

"The importance of sulfhydryl compounds for the stability of isocitrate lyase". Journal of Sains Kimia, Vol. 6: 37-44.

"A possible role of the key enzymes of the glyoxylate and gluconeogenesis pathways for fruit body formation of the wood rotting basidiomycete *Flammulina velutipes*". Journal of Mycoscience, Vol. 43: 327-332.

"A new glucose metabolism in wood rotting fungi". The fourth International Wood Science Symposium. LIPI Jakarta. (pp. 336-340).

"Metabolic physiology of wood decay fungi: Copper tolerance, oxalic acid and biochemistry of wood decay". Wood Preservation Vol. 28: 86-97.

"Purification and characterization of malate synthase from oxalic acid-producing Basidiomycete *Fomitopsis palustris*". The 432 Kansai Agricultural, Biochemistry and Biotechnology Meeting, Kyoto, Japan. (p. 4)

2001 "A physiological role of oxalic acid biosynthesis in the wood-rotting basidiomycete *Fomitopsis palustris*". Proc. Natl. Acad. Sci. USA. Vol. 98: 1126-1130.

"New role for glyoxylate cycle enzymes in wood-rotting basidiomycetes in relation to biosynthesis of oxalic acid". Journal of Wood Science, Vol. 47: 368-373.

"A possible role of the key enzymes of the glyoxylate and TCA cycles, and gluconeogenesis pathway during fruit body formation in the wood-rotting basidiomycete *Flammulina velutipes*". Proceeding of the Korean Society of Wood Science and Technology Fall Meeting. Seoul. Korea. (pp. 92-94).

"Carbon metabolism during growth and development of mycelium and fruit body in the white-rot fungus *Flamulina velutipes*". The 45th Annual Meeting of the Mycological Society of Japan, Tokyo, Japan. (p. 46).

"Purification and characterization of isocitrate lyase from a wood-rotting basidiomycete *Fomitopsis palustris* grown in a glucose-rich medium Annual Meeting of Japan Society for Bioscience, Biotechnology and Agrochemistry". Ritsumeikan University, Kyoto, Japan. (p. 61)

"A New mechanism for carbon metabolism coupling with oxalate biosynthesis in wood-rotting fungi". The 1st Conference on Fungal Genetics and Molecular Biology. Tokyo University, Tokyo, Japan. (p. 24)

"Purification and character of isocitrate lyase from wood-rotting fungus *Fomitopsis palustris*". The Sixth Annual Meeting of Japan Wood research Society, Tokyo University, Tokyo, Japan. (p. 442).

"A New concept of oxalic acid biosynthesis in physiology of copper-tolerant fungi. Intern. Res. Group on Wood Preserv". Doc. No. IRG/WP 01-10394 (Stockholm). (pp. 1-8).

2000 "Distribution of isocitrate lyase and malate synthase among wood-rotting fungi". Proceedings of The third International Wood Science Symposium, Kyoto, Japan. (pp. 380-385).

"Occurrence of glyoxylate cycle enzymes in wood-rotting basidiomycetes growing on glucose media". The 44th Annual Meeting of the Mycological Society of Japan at Kinki University, Nara, Japan.

"A possible role of glyoxylate cycle in fruit body morphogenesis of edible mushrooms". The 44th Annual Meeting of the Mycological Society of Japan at Kinki University, Nara, Japan. (p. 307).

"Biochemical analysis of organic acid metabolism of symbiotic and saprophytic basidiomycetes occurring in forest ecosystems". Science for Sustainable Utilization of Forest Resources in the Tropics. Published by the International Committee of Academic Exchange, Wood Research Institute Kyoto University. (pp. 62-62).

"Production of pulp and paper by using biological methods from tropical wood resources". Science for Sustainable Utilization of Forest Resource in the Tropics. Published by the International Committee of Academic of Academic Exchange, Wood Research Institute Kyoto University. (pp. 29-33).

1999 "Bioconversion of oil palm trunk derived lignocelluloses to sugars". Menara Perkebunan, Vol. 67: 37-44.

"Intramolecular electron transfer in glyoxylate dehydrogenase from brown-rot fungus *Tyromyces palustris*". The 49th Annual Meeting of the Japan Wood Research Society at Tokyo University of Agriculture, Tokyo, Japan. (p. 606).

1997 "Purifikasi penisilin asilase dari *Bacillus*". Prosiding seminar PPI Malaysia. Penang, Malaysia. (pp. 270-277).

"Solid-state fermentation processes for lignin degrading enzyme production by *Phanerochaete chrysosporium* on rice husks as substrate". Proceedings of the First Colloquium on Lignocellulose at University Sains Malaysia.

"The role of agitation on the production of lignin peroxidase and manganese peroxidase by *Phanerochaete chrysosporium*". Proceedings of the First Colloquium on Lignocellulose at University Sains Malaysia, Penang.

1995 "The effect of temperature on DNA supercoiling in a *gyrB* mutant in *Salmonella typhimurium*". Journal of Cellular Biochemistry 19A. (p. 103)

"Superkoiling DNA pada *Salmonella thypimurium gyrB* mutant". Prosiding Seminar Ilmiah LUSTRUM VI FMIPA USU, Medan. (pp. 83-97).

ORGANISASI PROFESI

Tahun	Organisasi
2002 – Sekarang	Anggota Indonesian Microbiological Society
1999 – 2005	Anggota Japan Wood Research Society
1998 – Sekarang	Anggota Japan Mycological Society

1998 – Sekarang	Anggota Core University Program LIPI-JSPS (Japan)
1995 – 1996	Anggota American Phytopathological Society
1994 – 1995	Anggota American Society for Microbiology
1994 – 1995	Anggota National Geographic of the USA

PENGHARGAAN

Tahun	Nama Penghargaan
2003	The Outstanding Scientist of the Indonesian Institute of Science (LIPI) – Japan Society for the Promotion of Science (JSPS) Cooperation Program (Memperoleh pin emas LIPI)
1998	Monbusho Fellowship dari Pemerintah Jepang
1996	Outstanding Lecture of the University of Sumatera Utara
1993	USAID Fellowship dari Pemerintah USA