
REFERENCE

REFERENCES

- Ab.Gapor, M.T. and Kato, A. (1987). Utilization of oil palm leaflets as a source of vitamin E. **Proceedings of the National Symposium on Oil Palm By-products for Agro-based Industries**, 5-6 November 1985, Kuala Lumpur, PORIM. pp.267-272.
- Abu Hassan, O. and Azizan, A.R. (1992). Feeds from oil palms. Proposal for processing and utilization of oil palm frond and oil palm trunk for beef production in feedlot system. MARDI, Serdang. pp. 7.
- Agamuthu, P. (1997). Aerobic and anaerobic biological solid waste treatment. In: **Effective Solid Waste Management**, Agamuthu and Khan N.(Eds), Econote Management, Kuala Lumpur. pp 5-29.
- Aidoo, K.E., Hendry, R. and Wood, B.J.B. (1982). Solid substrate fermentations. **Advances in Applied Microbiology**. 28:201-237.
- Allen, S.E. (1987). Analysis of vegetation and other organic materials. In: **Chemical analysis of ecological materials**. (Eds. Allen, S.E). pp. 4-61, Blackwell Scientific Publications, London.
- Alltech.
- Ander, P. and Eriksson, K.E. (1978). **Progress in Industrial Microbiology**.14:1. Cited in Crawford, R.L.(1981). Lignin degradation and transformation. John Wiley, New York pp128-137.
- Anton, A. (1992). Waste management and pollution control- a challenging problem in the sago industry. Paper presented at National Workshop on 'The Sago Industry in Sarawak', 21 February. The Ministry of Industrial Development of Sarawak and Sarawak Economic Development Corporation, Sibu, Sarawak.
- Arbige, M.V. and Pitcher, W.H. (1989). Industrial enzymology: a look towards the future. **Trends in Biotechnology**. 7: 330-335.
- Ashari, A.J., Jamaludin, K. and Ridzuan, R. (1991). Fibre properties and chemical constituents of oil palm fronds at different ages. **Proceedings of the National Seminar on Oil Palm Trunk and Other Palm Wood Utilization**. 4-5 March 1991, Kuala Lumpur. (Eds. Khoo *et al.*) Oil palm tree utilization Committee, Ministry of Primary Industries. pp.12-18.
- Bailey, M.J., Biely, P. and Poutanen, K. (1992). Interlaboratory testing of methods for assay of xylanase activity. **Journal of Biotechnology**. 23: 257-270.
- Bastawde, K.B. (1992). Xylan structure, microbial xylanases, and their mode of action. **World Journal of Microbiology and Biotechnology**.8: 353-368.

- Bau, H.M., Villaume, C., Lin, C.F., Evard, J., Quemener, B., Nicolas, J.P. and Mejean, L. (1994). Effect of a solid state fermentation using *Rhizopus oligoporus* SPT-3 on elimination of antinutritional substances and modification of biochemical constituents of defatted rapeseed meal. **Journal of Science, Food and Agriculture**. **65**: 315-322.
- Benjamin, S. and Pandey, A. (1998). Mixed-solid substrate fermentation- a novel process for enhanced lipase production by *Candida rugosa*. **Acta Biotechnology**. **18**: 315-324.
- Bergbauer, M., Eggert, C. and Kalnowski, G. (1992). Biotreatment of pulp mill bleachery effluents with the ecolomycetous fungus *Stagonospora gigaspora*. **Biotechnology Letters**. **14**:317-322.
- Berry,D.F., Tomkinson, R.A., Hetzel, G.H., Mullins, D.E. and Young, R.W. (1993). Evaluation of solid state fermentation techniques to dispose off atrazine and carbofuran. **Journal of Environmental Quality**. **22** : 366-374.
- Betts, W.B. and J.E. King. (1991). Oxidative coupling of 2,6-dimethoxyphenol by fungi and bacteria. **Mycological Research**. **95**: 526-530.
- Bhat, M.K. (2000). Cellulases and related enzymes in biotechnology. **Biotechnology Advances**. **18**:355-383.
- Biely, P. (1985). Microbial xylanolytic systems. **Trends in Biotechnology**. **3**:286-290.
- Bisaria, R., Vasudevan, P. and Bisaria, V.S. (1990). Utilization of spent agro-residues from mushroom cultivation for biogas production. **Applied Microbiology and Biotechnology**. **33**: 607-609.
- Bisaria, V.S. (1999). Bioprocessing of agro-residues to value added products. In: **Bioconversion of Waste Materials to Industrial Products**. (Eds. A.M. Martin). Blackie Academic & Professional. pp 197-246.
- Bisaria, V.S. (1991). In: **Bioconversion of Waste Materials to Industrial Products**. (Eds. A.M. Martin). Elsevier Applied Science. London. pp 187.
- Black, J.G. (1996). **Microbiology. Principles and Applications**. Third Edition. Prentice Hall. Upper Saddle River, New Jersey. pp. 144-148
- Bollag, J.M. and Leonowicz, A. (1984). Comparative studies of extracellular fungal lacasses. **Applied Environmental Microbiology**. **48**(4):849-854.
- Bollag, J.-M., Shuttleworth, K.L. and Anderson, D.H. (1988). Laccase-mediated detoxification of phenolic compounds. **Applied and Environmental Microbiology**. **54**(12): 3086-3091.

Bonnarme, P., Ozdin, L., and Jeffries, J.W. (1991). **ACS Symposium Series.460:pp 200.** In: **Bioconversion of Waste Materials to Industrial Products.** (Eds. A.M. Martin). Blackie Academic & Professional. pp 147.

Bourbonnais, R. and Paice, M.G.(1990). Oxidation of non-phenolic substrates. An expanded role of laccase in lignin degradation. **FEBS Letters. 267:99-102.**

Bourbonnais, R., Paice, M.G., Freiermuth, B., Bodie, E. and Borneman, S. (1997). Reactivities of various mediators and laccases with kraft pulp and lignin model compounds. **Applied Environmental Microbiology. 63: 4627-4632.**

Bradford, M.M. (1976). A rapid and sensitive method for the quantitation of microgram quantities of protein utilizing the principle of protein-dye binding. **Analytical Biochemistry. 72: 248-254.**

Buchert, J., Oksanen, T., Pere, J., Siika-aho, M., Suurnakki, A. and Viikari, L. (1998). Applications of *Trichoderma reesei* enzymes in the pulp and paper industry. In: Harman GF, Kubicek, C.P. (Eds). **Enzymes, biological control and commercial applications. Volume 2.** London: Taylor & Francis. pp343-363.

Buswell, J.A. (1998). Paper presented at ICRO UNESCO University Malaya. Microbiology Society Malaysia Regional Training Workshop Course on 'Current Trends in Microbial Technology for a Sustainable Environment: Exploring Diversity for Novel Process, October, 1998. Kuala Lumpur, Malaysia.

Buswell, J.A. and Odier, O. (1987). Lignin biodegradation. **Critical Review of Biotechnology. 6: 1-60.**

Buswell, J.A., Cai, Y.J., Chang, S.T., Perberdy, J.F., Fu, S.Y. and Yu, H.S. (1996). Lignocellulolytic enzyme profiles of edible mushroom fungi. **World Journal of Microbiology and Biotechnology. 12: 537-542.**

Cecil, J.E., Lau ,G., Heng, S.H. and Ku, C.K. (1982). The sago starch industry: a technical profile based on a preliminary study made in Sarawak. **Report of the Tropical Product Institute, L58,iv +31pp.** (London).

Chahal, D.S. (1991). In:**Food, Feed and Fuel from Biomass** (Eds. Chahal, D.S.), Oxford, and IBH Publishing Co., New Delhi, p.59, cited in : **Bioconversion of Waste Materials to Industrial Products.** (Eds. A.M. Martin). Blackie Academic & Professional. pp 147.

Chang, S.T.(1993). Mushroom and mushroom biology. In: **Genetic and Breeding of Edible Mushrooms.** (Eds. Chang, S.T., Buswell , J.A., and Miles, P.G.) Gordon and Breach Scientific Publishers, Philadelphia, pp1-11.

Chew, T.Y. and Shim, Y.L. (1993). Management of sago processing wastes. In: **Waste Management in Malaysia: Current status and prospects for bioremediation.** A monograph prepared by the Environmental Biotechnology Research Group of the

National Working Group on Biotechnology. (Eds. Yeoh B.G. *et al.*). Ministry of Science, Technology and the Environment, Kuala Lumpur, Malaysia, pp.159-167.

Chew, T.Y. and Shim, Y.L. (1991). Management of sago processing wastes. Paper presented at **Seminar for Disposal of Domestic, Industrial and Agricultural Wastes**, Kuching, Sarawak.

Chew, T.Y. and Shim, Y.L. (1990). A survey of sago processing wastes. Report to the Environmental Biotechnology, National Biotechnology Council, MARDI, Malaysia.

Chivukula, M. and Renganathan, V. (1995). Phenolic azo dye oxidation by laccase from *Pycnophora oryzae*. **Applied Environmental Microbiology**. **61**: 4374-4377.

Coll, P.M., Fernandez-Abalos, J.M., Villanueva, J.R., Santamaria, R. and Perez, P. (1993). Purification and characterization of a phenoloxidase (laccase) from the lignin-degrading basidiomycete PM1 (CECT 2971). **Applied and Environmental Microbiology**. **59**: 2607-2613.

Collins, P.J. and Dobson, A.D.W. (1997). Regulation of gene transcription in *Trametes versicolor*. **Applied Environmental Microbiology**. **63**: 3444-3450.

Collins, P.J., Kotterman, M.J.J., Field, J.A. and Dobson, A.D.W. (1996). Oxidation of anthracene and benzo[a]pyrene by laccase from *Trametes versicolor*. **Applied Environmental Microbiology**. **62**: 4563-4567.

Considine, P.J., Hackett, T.J. and Coughlan, M.P. (1987). **Biotechnology Letters**. **9**: p131-133, cited in **Bioconversion of Waste Materials to Industrial Products**. (Eds. A.M. Martin). Blackie Academic & Professional. pp 147.

Crawford, R.L. (1981). Lignin biodegradation and transformation. New York: John Wiley.

Deschamps, F. and Huet, M.C. (1985). **Applied Microbiology and Biotechnology**. **22**: p177, cited in **Bioconversion of Waste Materials to Industrial Products**. (Eds. A.M. Martin). Blackie Academic & Professional. pp 257.

Dinesh, N. (1994). Bioconversion of oil palm frond parenchyma tissue and palm oil sludge solids by selected fungi. **Master of Biotechnology Thesis**. University of Malaya.

Dong, W.K., Tae, S.K., Young, K.J. and Jae, K.L. (1992). Adsorption kinetics and behaviours of cellulase components on microcrystalline cellulose. **Journal of Fermentation and Bioengineering**. **73**(6): 461-466.

Eggert, C., Temp, U. and Eriksson, K.E. (1996). The lignolytic system of the white rot fungus *Pycnophora cinnabarinus* : purification and characterization of the laccase. **Microbiology**. **62**: 1151-1158.

El Haji, K., Sachdeva, V. and Tyagi, R.D. (1999). Bioconversion of waste water from the pulp and paper industry. In: **Bioconversion of Waste Materials to Industrial Products**. (Eds. A.M. Martin). Blackie Academic & Professional. pp 423-445.

Fan, L.F., Pandey, A., Vandenberghe, L.P.S. and Soccol, C.R. (1999). Effect of caffeine on *Pleurotus* sp. and bioremediation of caffeinated residues. **IX European Congress on Biotechnology**, July. 11-15; p.2664.

Fernando, T. and Aust, S.D. (1994). In: **Biological Degradation and Bioremediation of Toxic Chemicals** (Eds. Chaudry, G.R.). Dioscorides Press, Portland, OR, p.386. In : **Bioconversion of Waste Materials to Industrial Products**. (Eds. A.M. Martin). Blackie Academic & Professional. pp 147.

Fengel, D. and Wegner, G. (1984). Wood: Chemistry, Ultrastructure and Reactions, Walter de Gruyter, New York. In: **Bioconversion of Waste Materials to Industrial Products**. (Eds. A.M. Martin). Blackie Academic & Professional. pp 423-445

Field, J.A., Jong, E., Feijoo-Costa, G. and Bont, J.A.M. (1993). Screening for ligninolytic fungi applicable to the biodegradation of xenobiotics. **TIBTECH**. 11: 44-49.

Freitag, M. & Morrell, J.J. (1992). Changes in selected enzyme activities during growth of pure and mixed cultures of the white-rot decay fungus *Trametes versicolor* and the potential biocontrol fungus *Trichoderma harzianum*. **Canadian Journal of Microbiology**. 38: 317-323.

Frost, G.M. and Moss, D.A. (1987). Production of enzymes by fermentation. In: **Biotechnology Vol.7a. Enzyme Technology**. (Eds. Rehn, H.J. and Reed, G.). pp65-144. VCH Verlagsgesellschaft Weinheim, Federal Republic of Germany.

Galante, Y.M., De Conti, A., Monteverdi, R. (1998a). Application of *Trichoderma* enzymes in textile industry. In: **Enzymes, Biological Control and Commercial Applications. Volume 2**. (Eds. Harman, G.F. and Kubicek, C.P.). London: Taylor & Francis. pp311-326.

Galante, Y.M., De Conti, A., Monteverdi, R. (1998b). Application of *Trichoderma* enzymes in food and feed industries. In: **Enzymes, Biological Control and Commercial Applications. Volume 2**. (Eds. Harman, G.F. and Kubicek, C.P.). London: Taylor & Francis. pp327-342.

Gilbert, H.J. and Hazlewood, G.P. (1993). Bacterial cellulases and xylanases. **Journal of General Microbiology**. 139:187-194.

Glenn, J.K., M.A. Morgan, M.B. Mayfield, M. Kuwahara and M.H. Gold. (1983). An extracellular H_2O_2 requiring enzyme preparation involved in lignin biodegradation by the white rot Basidiomycete *Phanerochaete chrysosporium*. **Biochemical and Biophysics Communication**. 114: 1077-1083.

Gold, M.H. & Glenn, J.K. (1988). Manganese peroxidase from *Phanerochaete chrysosporium*. **Methods of Enzymology**. 161:258-264.

Gowthaman, M.K., Raghava-Rao, K.S.M.S., Ghidyal, N.P. and Karanth, N.G. (1995). **Process Biochemistry**. 30:9-15., cited in : **Bioconversion of Waste Materials to Industrial Products**. (Eds. A.M. Martin). Blackie Academic & Professional. pp 147.

Gutierrez-Correa, M. & Tendergy, R.P. (1998). Xylanase production by fungal mixed culture solid substrate fermentation on sugar cane bagasse. **Biotechnology Letters**. 20(1):45-47.

Hacking, A.J. (1986). Economic aspects of biotechnology; Cambridge University Press. pp 78.

Harkin, J.M and Obst, J.R. (1973). Syringaldazine, an effective reagent for detecting laccase and peroxidase in fungi. **Experientia**. 29(4):381-387.

Hatakka, A. (1994). Lignin-modifying enzymes from selected white rot fungi: production and role in lignin degradation. **FEMS Microbiology Review**. 13:125-135.

Heizel, E. Geiger, F., Fahmy, M. and Kut, O.M. (1992). Integrated ozonation biotreatment of pulp bleaching effluents containing chlorinated phenolic compounds. **Biotechnology Progress**. 8:67-77.

Higuchi, T. (1990). Lignin biochemistry: biosynthesis and biodegradation. **Wood Science Technology**. 24:23-63.

Horigome, T., Sakaguchi, E., Takamura, Y., Bintaro, M.H., Haryanto, B., Tandi, E.J. and Marangkey, M.P. (1991). The feeding value of pith and pith residue from sago palms. In: **Proceedings of 4th International Sago Symposium, Towards Greater Advancement of Sago Industry in the '90s**. (6-9th August 1990, Kuching, Sarawak, Malaysia): Ministry of Agriculture & Community Development.

Hublik, G and Schinner, F. (2000). Characterization and immobilization of the laccase from *Pleurotus ostreatus* and its use for continuous elimination of phenolic pollutants. **Enzyme and Microbial Technology**. 27: 330-336.

Jeffries, T.W., Choi, S. and Kirk, T.F. (1981). **Applied and Environmental Microbiology**. 42:p.290. In : **Bioconversion of Waste Materials to Industrial Products**. (Eds. A.M. Martin). Blackie Academic & Professional. pp 147.

Johannes, C., Majeherczyk, A. and Hutterman, A. (1996). Degradation of anthracene by laccase of *Trametes versicolor* in the presence of different mediator compounds. **Applied Microbiology and Biotechnology**. 46:313-317.

Kantelinen, A., Hatakka, A. and Viikari, L. (1989). Production of lignin peroxidase and laccase by *Phlebia radiata*. **Applied Microbiology and Biotechnology**. 31: 234-239.

Kastanek, F., Demmerova, K., Pazlarova, J., Burkhard, J. and Maleterova, Y. (1999). Biodegradation of polychlorinated biphenyls and volatile chlorinated hydrocarbons in contaminated soils and ground water in field conditions. **International Biodeterioration and Biodegradation**. 44:39-47.

Kawai, S., Asukai, M., Ohya, N., Okita, K., Ito, T. and Ohashi, H. (1999). Degradation of a non-phenolic β -O-4 substructure of *Coriolus versicolor* in the presence of 1-hydroxybenzotriazole. **FEMS Microbiology Letters**. 170: 51-57.

Kerem, Z., Friesem, D and Hadar, Y. (1992). Lignocellulose degradation during solid-state fermentation: *Pleurotus ostreatus* versus *Phanerochaete chrysosporium*. **Applied Environmental Microbiology**. 58: 1121-1127.

Khozirah, S. and Khoo, K.C. (1991). Introduction. In: **Oil Palm Stem Utilisation-Review of Research**. S. Khozirah, K.C. Khoo and M.A. Abdul Razak (Eds). Forest Research Institute of Malaysia. pp.1-10.

Kirk, T.K. and Farrell, R.L. (1987). Enzymatic combustion- The microbial degradation of lignin. **Annual Review of Microbiology**. 41: 465-505.

Kuan, J. (1999). **Personal Communication**.

Kumaran, S. (1996). Enzyme activities of *Pleurotus sajor-caju* during solid substrate fermentation of sago 'hampas'. **Master of Biotechnology Thesis**. University of Malaya.

Kumaran, S., Sastry, C.A. and Vikineswary, S. (1997). Laccase, cellulase and xylanase activities during growth of *Pleurotus sajor-caju* on sago 'hampas'. **World Journal of Microbiology and Biotechnology**. 13: 43-49.

Lee, I.-Y., Jung, K.-H., Lee, C.-H. and Park, Y.-H. (1999). Enhanced production of laccase in *Trametes versicolor* by the addition of ethanol. **Biotechnology Letters**. 21:965-968.

Leonowicz, A. and Grzywnowicz, K. (1981). Quantitative estimation of laccase forms in some white-rot fungi using syringaldazine as a substrate. **Enzyme and Microbial Technology**. 3: 55-58.

Leonowicz, A., J. Trojanowski, and B. Orlicz. (1978). Induction of laccase in basidiomycetes: apparent activity of the inducible and constitutive forms of the enzyme with phenolic substrates. **Acta Biochimica Polonica**. 25:369-378.

Ling, S.K. (1994). Biochemical changes associated with growth of *Pleurotus sajor-caju* on oil palm frond parenchyma tissue. **Master of Biotechnology Thesis**. University of Malaya.

Lonergan, G.T., Panow, A., Jones, C.L., Schliephake, K., Ni, J. and Mainwaring, D.E. (1995). Physiological and biodegradative behaviour of the white-rot fungus, *Pycnoporus cinnabarinus*, in a 200 litre packed-bed bioreactor. **Australasian Biotechnology**. 5: 107-111.

Maltseva, O.V., Niku-Paavola, M.L., Leotievski, A., Myasoedova, N.M. and Golovleva, L.A. (1991). Ligninolytic enzymes of the white-rot fungus *Panus tigrinus*. **Applied Biotechnology and Biochemistry**. 13:291-302.

Masaphy, S., Levanon, D. and Henis, Y. (1996). Degradation of atrazine by the lignocellulolytic fungus *Pleurotus pulmonaris* during solid state fermentation. **Bioresource Technology**. **56**: 207-214.

Miller, G.L. (1959). Use of dinitrosalicylic acid reagent for determination of reducing sugar. **Analytical Chemistry**. **31**(3): 426-428.

Millet, M.A., Baker, A.J. and Satter, L.D.(1975). **Biotechnology and Bioengineering Symposium**. **5**: 193.

Mohamad Husin, Abd.Halim, H. and Ahmad Tamizi, M. (1986). Availability and Potential Utilization of oil palm trunks and fronds, up to the year 2000. PORIM occasional paper, No.20.

Moo-Young, M., Moreira, A.R. and Tengerdy, R.P. (1983). Principles of solid substrate fermentation. In: **The Filamentous Fungi**. Volume 4. (Eds. J.E. Smith, D.R. Berry and B. Kristiansen). Edward Arnold, London. pp.117-144.

Mudgett, R.E. (1986). Solid-state fermentations. In: **Manual of Industrial Microbiology and Biotechnology**. (Eds. A.L.Demain and N.A.Soloman). American Society for Microbiology, Washington D.C. pp.66-68.

Novozyme.

Oda, Y., Adachi, K., Aita, I., Ito, M., Aso, Y. and Igarashi, H. (1991). Production and properties of laccase secreted by *Pycnoporus coccineus*. **Agricultural Biology and Chemistry**. **55**:1393-1395.

Ortega, G.M., Martinez, E.O., Gonzalez, Betancourt, D. and Otero, M.A. (1993). Enzyme activities and substrate degradation during white rot fungi growth on sugarcane straw in a solid state fermentation. **World Journal of Microbiology and Biotechnology**. **9**:210-212.

Orth, A.B., Royce, D.J. and Tien, M. (1993). Ubiquity of lignin degrading peroxidases among various wood-degrading fungi. **Applied Environmental Microbiology**. **59**:4017-4023.

Pandey, A., Soccol, C.R., and Mitchell, D. (2000). New developments in solid state fermentation: I-bioprocesses and products. **Process Biochemistry**. **35**:1153-1169.

Paridah, M.T. (1992). The potential of utilization of sago waste in the paper and wood industry. Paper presented at **Workshop on Sago Industry**, 21 February, Sibu, Sarawak, Malaysia.

Pointing, S.B. (2001). Feasibility of bioremediation using white-rot fungi, **Applied Microbiology & Biotechnology**. **57**: 20-33.

Pointing, S.B., Jones, E.B.G. and Vrijmoed, L.L.P. (2000). Optimization of laccase production by *Pycnoporus sanguineus* in submerged liquid culture. **Mycologia**. **92**: 139-144.

Pointing SB, Vrijmoed LLP & Jones EBG (1998). A qualitative assessment of lignocellulose degrading enzyme distribution in marine fungi. *Botanica Marina* 41: 293-298.

Pongsapan, P., Tangdilintin, F.K., Pantjawidjaja, S. and Situru. (1984). Penggunaan berbagai tingkat ampas sagu dalam ransum sapi peranakan ongole yang sedang tumbuh (The utilization of some levels of sago waste in rations for growing ongole grades). *Ilmu Peternakan*. 1 (5), 163-166. (Malay text with English abstract).

Poutanen, K. (1997). Enzymes: an important tool in the improvement of the quality of cereal foods. *Trends in Food Science Technology*. 8: 300-306.

Raimbault, M. and Alazard, D. (1980). Culture method to study fungal growth in solid fermentation. *European Journal of Applied Microbiology and Biotechnology*. 9:199-209.

Rajagopalan, S. and Modak, J.M. (1995). *Bioprocess Engineering*. 13:p161-169, cited in : *Bioconversion of Waste Materials to Industrial Products*. (Eds. A.M. Martin). Blackie Academic & Professional. pp 147.

Rao, S.S., Quinn, B.A., Burnison, B.K., Hayes, M.A. and Metcalfe, C.D. (1995). Assessment of the genotoxic potential of pulp mill effluent using a bacterial, fish and mammalian assays. *Chemosphere*. 31: 3553-3566.

Rayner, A.D.M. & Boddy, L. (1988). Fungal decomposition of wood. Its biology and ecology. John Wiley and Sons, Chichester, U.K.

Reddy, C.A. & D'Souza, T.M. (1994). The potential for white-rot fungi in the treatment of pollutants. *Current Opinion in Biotechnology*. 6: 320-328.

Reinhammar, B. (1984). Laccase. In: *Copper Proteins and Copper Enzymes* (Eds. Lontie, R.). pp 1-35, Boca Raton, Fla: CRC.

Robles, A., Lucas, R., Gerardo Alvarez de Cienfuegos and Galvez, A. (2000). Phenol-oxidase (laccase) activity in strains of the hyphomycete *Chalara paradoxa* isolated from olive mill wastewater disposal ponds. *Enzyme and Microbial Technology*. 26: 484-490.

Sandhu, D.K. & Arora, D.S. (1984). Laccase production by *Polyporus sanguineus* under different nutritional and environmental conditions. *Experientia*. 41:355-356.

Schliephake, K., Lonergan, G.T., Jones, C.L. and Mainwaring, D.E. (1993). Decolorization of a pigment plant effluent by *Pycnoporus cinnabarinus* in a packed bed bioreactor. *Biotechnology Letters*. 15: 1185-1188.

Schliephake, K., Mainwaring, D.E., Lonergan, G.T., Jones, I.K. and Baker, W.L. (2000). Transformation and degradation of the diazo dye Chicago Sky Blue by a purified laccase from *Pycnoporus cinnabarinus*. *Enzyme and Microbial Technology*. 27: 100-107

Schmid, A., Dordick, J.S., Hauer, B., Kiener, A., Wubbolts, M. and Witholt, B. (2001). Industrial biocatalysis today and tomorrow. **Nature**. **409**, 258-268.

Schoemaker, H.E. and Leisola, M.S.A. (1990). Degradation of lignin by *Phanerochaete chrysosporium*. **Journal of Biotechnology**. **13**: 101-109.

Shamala, T.R. and Sreekantiah, K.R. (1986). Production of cellulases and D-xylanase by some selected fungal isolates. **Enzyme and Microbial Technology**. **8**:178-182.

Shim, Y.L. (1992). Utilisation of Sago 'Hampas' by Microfungi. **Master of Biotechnology thesis**. University of Malaya.

Shin, K.S., Oh, I.K. and Kim, C.J. (1997). Production and purification of Remazol Brilliant Blue R decolorizing peroxidase from the culture filtrate of *Pleurotus ostreatus*. **Applied Environmental Microbiology**. **63**(5): 1744-1748.

Shuttleworth, K.L. and Bollag, J.-M. (1986). Soluble and immobilized laccase as catalysts for the transformation of substituted phenols. **Enzyme and Microbial Technology**. **8**:171-177.

Sigoillot, J.C., Herpoel, I., Frasse, P., Moukha, S., Lesage-Meesen, L. and Marcel, A. (1999). Laccase production by a monokaryotic strain of *Pycnoporus cinnabarinus* derived from a dikaryotic strain. **World Journal of Microbiology and Biotechnology**. **15**: 481-484.

Soccol, C.R., Marin, B., Raimbault, M. and Lebeault, J.M. (1994). Breeding and growth of *Rhizopus* in raw cassava by solid state fermentation. **Applied Microbiology and Biotechnology**. **41**: 330-336.

Srebotnik, E. and Hammel, K.E. (2000). Degradation of nonphenolic lignin by the laccase/1-hydroxybenzotriazole system. **Journal of Biotechnology**. **81**: 179-188.

Srinivasan, C., D'Souza, T.M., Boominathan, K. and Reddy, C.A. (1995). Demonstration of laccase in the white-rot basidiomycete *Phanerochaete chrysosporium* BKM-F1767. **Applied Environmental Microbiology**. **61**: 4274-4277.

Swamy, J. and Ramsay, J.A. (1999). The evaluation of white rot fungi in the decolorization of textile dyes. **Enzyme and Microbial Technology**. **24**: 130-137.

Tendergy, R.P. (1998). Solid substrate fermentation for enzyme production. In: **Advances in Biotechnology**. (Eds. Pandey, A.) New Delhi: Educational Publishers & Distributors:13-16.

Thurston, C.F. (1994). The structure and function of fungal laccases. **Microbiology**. **140**: 19-26.

Tien, M. (1987). Properties of ligninase from *Phanerochaete chrysosporium* and their possible applications. **Critical Reviews in Microbiology**. **15**: 141-168.

Tien, M. and Kirk, T.K. (1983). Lignin-degrading enzyme from the Hymenomycete *Phanerochaete chrysosporium* Burds. **Science**. **221**: 661-663.

Tienzyme.

Tour, U., Winterhalter, K. and Fiechter, A. (1995). Enzymes of white-rot fungi involved in lignin degradation and ecological determinants for wood decay. **Journal of Biotechnology**. **41**:1-17.

Treu, R. (1998): Macrofungi in oil palm plantations of South East Asia. The International Journal of General Mycology. **Mycologist**. Vol 12: Part 1. pp 10-14

Tuen, A.A. (1994). Effect of partially replacing commercial concentrate with sago pith meal on dry matter intake and digestion by goats. **Malaysian Applied Biology**. **22**:137-142.

Uhlrig, H. (1998). Industrial enzymes and their applications. New York: John Wiley & Sons, Inc., pp 435. In: Bhat, M.K. (2000). Cellulases and related enzymes in biotechnology. **Biotechnology Advances**. **18**:355-383.

Viikari, L., Kantelinen, A., Ratto, M. and Sundquist, J. (1991). Enzymes in pulp and paper processing. In: **Enzymes in Biomass Conversion**, ACS Symposium Series 460. (Eds. G.F. Leatham and M.E. Himmel). American Chemical Society, Washington DC. pp.12-21.

Vikineswary, S. and Shim, Y.L. (1996). Growth and starch degrading activity of *Myceliophthora thermophila* in solid substrate fermentation of sago 'hampas. **Asia Pacific Journal of Molecular Biology and Biotechnology**. **4**: 85-89.

Vimala, P., Rifat, A., Vikineswary, S., Noorlidah, A. and Parameswari, S. (2001). Optimization of laccase productivity by *Pycnoporus sanguineus* in solid substrate fermentation. 24th Symposium of the Malaysian Society for Microbiology, 9-12 September, 2001.

Visser, J., Beldman, G., Kusters-van Someren, M.A. and Voragen, A.G.J. (1992). Proceedings of an International Symposium. **Progress in Biotechnology**. **14**. Amsterdam: Elsevier. pp.990. In: Bhat M.K. (2000). Cellulases and related enzymes in biotechnology. **Biotechnology Advances**. **18**:355-383.

Wang, D.I.C., Cooney, C.L., Demain, A.L., Dunnill, P., Humphrey, A.E. and Lilly, M.D. (1979). Regulation of enzyme production. In: **Fermentation and Enzyme Technology**. pp.46-56. John Wiley & Sons, Inc. New York.

Wood, T.M. (1989). Mechanisms of cellulose degradation by enzymes from aerobic and anaerobic fungi. In: **Enzyme systems for lignocellulose degradation** (Eds. M.P. Coughlan). pp.17-35. Elsevier Applied Science, London.

Worral, J.J., Anagnost, S.E. and Zabel, R.A. (1997). Comparison of wood decay among diverse lignicolous fungi. **Mycologia**. **89**: 199-219.

Yahya, M., Mahyuddin, M.D., Alimon, A.R. and Abdullah, N. (1992). Physico-chemical characteristics of sago pith meal. In: **Towards More Efficient and Effective Animal Production Strategies. Proceedings of the 15th MSAP Annual Conference**, 26-27 May, pp. 78-82. Kuala Terengganu, Malaysia.

Yoshida, H. (1883). Chemistry of Lacquer (Urushi) Part 1. **Journal of the Chemical Society**. 43: 472-486, cited in Schubert (1965) **Lignin Biochemistry**. Academic Press, London. pp.131.

Youn, H-D., Kim, K.-J, Maeng, J.-S., Han, Y.-H., Jeong, I.-B., Jeong, G., Kang, S.-O. and Hah, Y.C. (1995). Single electron transfer by an extracellular laccase from white-rot fungus *Pleurotus ostreatus*. **Microbiology**. 141:393-398.

Zadrazil, F. (1985). Screening of fungi for lignin decomposition and conversion of straw into feed. **Angewandte Botanikal**. 59: 433-452.

Zadrazil, F., Kamra, D.N., Isikuemhen, O.S. and Schuchardt, F. (1996). Bioconversion of lignocellulose into ruminant feed with white rot fungi. **Journal of Applied Animal Research**. 10: 105-124.

Zetelaki-Horvath, K. (1984). Protein enrichment of lignocellulosic agricultural wastes by mushrooms. **Biotechnology and Bioengineering**. 26:389-395.