

DAFTAR PUSTAKA

- Ahern, T.J. and A.M. Klibanov. 1987. Why do enzyme irreversibly inactive at high temperature. Biotec 1. *Microbial Genetic Engineering and Enzyme Technology*. Gustav Fischer. Stuttgart. New York.
- Ariffin, H., N. Abdullah, M. S. Umi Kalsom, Y. Shirai and M.A. Hassan. 2006. Production and characterization of cellulase by *Bacillus pumilus EB3*. International Journal of Engineering and Technology. Vol. 3. Pp. 47–53.
- Aunstrup, K. 997. Production, Isolation, and Economics of Extracellular Enzymes. Di dalam: Wingard, L. B. Jr., E. K. Katzir dan L. Goldstein (Eds.). Applied Biochemistry and Bioengineering Vol:2: *Enzyme Technology*. Academic Press Inc. New York.
- Beguin, P. and Aubert, J.P. 1993. The biological degradation of cellulose. *FEMS Microbiology Reviews*. **13**:25-58.
- Boyer, R.F. 1993. *Modern Experimental Biochemistry* Benjamin Cumming Publishing Company. Redwood City, California.
- Chaplin, M.F. and Bucke. 1990. *Enzyme Technology*. Cambridge University Press. Cambridge, Great Britain.
- Coughlan, M. 1985. Celluloses: Production properties and applications. *Biochem. Soc. Trans.* **13**:405-406.
- Duff, S.J.B and Murray, W.D. 1996. *Bioconversion of forest products industry waste cellulosics to fuel ethanol: a review*. Bioresour. Technol. **55**. 1–33.
- Eijnsink, G.H., Sirgit, G., Torben, V. and Bertus van de Burg. 2005. Directed Evolution of Enzyme Stability. *Biomolecular Engineering*. Elsevier Science Inc. New York. **23**:21-30.
- Flengsrud, R., V. Lindahl, and A. Tronsmo. 1994. *Characterization of production and enzyme properties of an endo- β -1,-4-glucanase from*

- Bacillus subtilis CK-2 isolated from compost soil.* Antonie Van Leeuwenhoek. Vol 6. No. 4. Pp. 319–326.
- Francis, G.E., C. Delgado and D. Fisher. 1992. PEG-modified Proteins In *Stability of Protein Pharmaceuticals Part B*. Ahern, T.J. and M. C. Manning editor. Plenum Press. New York. 246-247.
- Gaertner, H. F. and A.J. Puigserver. 1992. Increased activity and stability of poly(ethylene glycol) modified trypsin. *Enzyme Microb. Technol.* **14**. 150-155.
- Goddettee, D.W., C. Terri, F.L. Beth, L. Maria , R.M. Jonathan, P. Christian, B.R. Robert, S.Y. Shiow and C.R. Wilson. 1993. Strategy and implementation of a system for protein engineering. *J. Biotechnol.* **28**. 41-54.
- Grisham, Charles M.; and Reginald H. Garrett. 1999. *Biochemistry*. Saunders College Pub. Philadelphia. Pp. 426–7.
- Gupte, S. 1990. *Mikrobiologi Dasar*. Binarupa Aksara. Jakarta.
- Harris ELV and Angal S. 1989. *Protein Purification Methods a Practical Approach*. Oxford University. UK.
- Harris, J. M. 1992. *Polyethyleneglycol*. Plenum Press. New York
- Hernaiz, M.J., J.M.S. Montero and J.V. Sinisterra. 1999. Modification of purified lipases from *Candida rugosa* with polyethylene glycol: A systematic study. *Enzyme Microb. Technol.* **24**. 181-190.
- Ikram, Ul-haq, Muhammad Mohsin Javed, Tehmina Saleem Khan and Zafar Siddiq. 2005. *Cotton Saccharifying Activity of Cellulases Produced by Co-culture of Aspergillus niger and Trichoderma viride*. Res. J. Agric & Biol. Sci. 1(3): 241-245.
- Janecek, S. 1993. *Strategies for Obtaining Stable Enzymes*. Process Biochem. Volume 28. Pp 435-445.
- Kamelia, R., Muliawati S. dan Dessy N. 2005. *Isolasi dan Karakterisasi Protease Intraseluler Termostabil dari Bakteri Bacillus stearothermophilus*. Seminar Nasional MIPA RP1. Departemen Kimia. Institut Pertanian Bogor. Bogor.
- Kazan, D., H. Ertan and A. Erarslan. 1997. Stabilization of *Escherichia coli* Penicillin G Acylase against thermal Inactivation by cross-linking with dextran dialdehyde polymers. *Applied. Microbiol Biotechnol.* **48**: 191-197.

- Koolman, J. 2001. *Atlas Berwarna dan Teks Biokimia*. Penerbit Hipokrates. Jakarta.
- Lay, B. W. dan Sugyo,H. 1992. *Mikrobiologi*. Rajawali Pers. Jakarta. 107-112.
- Lehninger, A.L. 1982. *Dasar-Dasar Biokimia*. Erlangga. Jakarta. 369 halaman.
- Lowry, O. H., N. J., Rosebrough, A. L., Farr, and R. J. Randall. 1951. Protein measurement with the folin phenol reagent. *J. Biol. Chem.* 193-265.
- Mandels, M. 1985. Applications of cellulases. *Biochemical Society Transactions*. **13**: 414-416.
- Mandels, M., A. Raymond and R. Charles. 1976. Measurement of saccharifying cellulose. *Biotech. & Bioeng. Symp.* **6**. John Wiley & Sons Inc.
- Martoharsono, Soeharsono. 1997. *Biokimia Jilid I*. UGM Press. Yogyakarta. 91.
- Mawadza, C., F. C. Boogerd, R. Zvauya and H. W. Van Verseveld. 1996. *Influence of environmental factors on endo- β -1,4-glucanase production by Bacillus HR 68 isolated from a Zimbabwean hot spring*. Antonie Van Leeuwenhoek. Vol. 69. No. 4. Pp. 363–369.
- Mozhaev, V.V. and K. Martinek. 1984. Structur-Stability Relationship in Protein: New Approaches to Stabilizing Enzymes. *Enzyme Microb. Technol.* 50-59.
- Mozhaev, V.V., N.S. Melik-Nubarov, V.A. Siksnis and K. Martinek. 1990. Strategy for Stabilizing Enzymes. Part Two: Increasing Enzyme Stability by Selective Chemical Modication. *Biocatalysts*. **173**: 189-196.
- Muchtadi, T.R. dan Sugiono. 1992. *Ilmu Pengetahuan Bahan Pangan*. Departemen Pendidikan dan Kebudayaan. Direktorat Jenderal Tinggi Pusat Antar Universitas Pangan dan Gizi. Institut Pertanian Bogor. Bogor.
- Murashima, K., Nishimura,T., Nkamura,Y., Koga,J., Moriya, T., Sumida, N., Yaguchi,T. and Kono, T. 2002. Purification and characterization of new endo-1,4- β -glucanses from *Rhizopus orizae*. *Enzyme Microb. Technol.* **30**: 319-326.
- Murray, R.K., Granner, D.K. and Victor, R.W. 2009. *Biokimia Harper*. EGC Penerbit Buku Kedokteran. Jakarta. 68-69.
- Nubarov, N.S., V.V. Mozheav, V.A. Siksnis and K. Martinek. 1987. Enzyme Stabilization of α -Chymotrypsin by Reductive Alkylation with Glyoxylic Acid. *Biotechnol. Lett.* **9**: 725-730.

- Page, D.S. 1989. *Prinsip-Prinsip Biokimia*. Erlangga. Jakarta. 465 halaman.
- Pelczar, M.J. and E. C. S. Chan. 1986. *Dasar-Dasar Mikrobiologi*. UI Press. Jakarta.
- Philippidis, G. P. 1991. Evaluation of The Current Status of The Cellulase Production Technology. *Biofuel Information Center*.
- Poedjiadi, A. 1994. *Dasar-dasar Biokimia*. Jakarta. UI-Press. 155, 158-160.
- Rastogi, G., A. Bhalla, A. Adhikari. 2010. *Characterization of thermostable cellulases produced by Bacillus and Geobacillus strains*. Bioresource Technology. Vol. 101. No. 22. Pp. 8798–8806.
- Radzicka A. and Wolfenden R. 1995. A proficient enzyme. *Science*. **6**. 267: 90–93.
- Reed, G. 1975. *Enzymes in Food Processing*. Academic Press. New York. 212.
- Rodwell, V.W. 1987. *Harper's Review of Biochemistry*. EGC Kedokteran. Jakarta.
- Saito, K., Kawamura, Y., and Oda, Y. 2003. Role of pectinolytic enzyme in the lactic acid fermentation of potato pulp by *Rhizopus orizae*. *J. ind. Microbiol. Biotechnol.* **30**: 440-444.
- Sariningsih, R. 2000. *Produksi Enzim Protease oleh Bacillus subtilis BAC-4*. (Skripsi). Institut Teknologi Bandung. Bandung.
- Sastrodinoto, S. 1980. *Biologi Umum I*. PT Gramedia. Jakarta.
- Schallmey, M., A. Singh and O. P. Ward. 2004. *Developments in the use of Bacillus species for industrial production*. Canadian Journal of Microbiology. Vol. 50. No. 1. Pp.1–17.
- Schelege, H.G. and K. Schmidt. 1994. *Mikrobiologi Umum*. UGM. Yogyakarta.
- Scopes, R.K. 1982. *Protein Purification*. Springer Verlag. New York.
- Sekarsari, I. D. 2003. *Seleksi Isolat Bakteri Rumen (Anaerob) Penghasil Karboksi Metil Selulase*. Institut Pertanian Bogor. Bogor.
- Singh, J., N. Batra and R. C. Sobti. 2004. *Purification and characterisation of alkaline cellulase produced by a novel isolate Bacillus sphaericus JS1*. Journal of Industrial Microbiology and Biotechnology. Vol. 31. No. 2. Pp. 51–56.

- Smith, AL. 1997. *Oxford dictionary of biochemistry and molecular biology*. Oxford University Press. Oxford.
- Stahl, S. 1999. Thermophilic microorganisms: The biological background for thermophily and thermostability of enzyme in *Thermostability of Enzymes* (Gupta , M.N. editor). Springer Verlag. New Delhi. 59-60.
- Stenberg, D. 1976. Production of Cellulase by *Trichoderma*. *Biotech. & Bioeng. Symp.*, 6. John Wiley & Sons Inc.
- Suhartono, M.T. 1989. *Enzim dan Bioteknologi*. PAU IPB. Bogor.
- Suhartono M.T, Suwanto A dan Widjaja H. 1992. *Diktat Stuktur dan Biokimiawi Protein*. PAU IPB. Bogor.
- Virdianingsih, R. 2002. *Mempelajari Stabilitas Termal dari Bacillus pumilus y1 dalam pelarut Heksana, Toluena dan Benzena*. (Skripsi). Institut Pertanian Bogor. Bogor.
- Wagen, E.S. 1984. Strategies for increasing the stability of enzymes, in *Enzyme Engineering* . The New York Academy of Sciences. New York. 1-19.
- Walsh, G. and D.R. Headon. 1994. *Protein Biotechnology*. John Willey and Sons. New York.
- Winarno, F.G. 1989. *Enzim Pangan dan Gizi*. PT. Gramedia Pustaka Utama. Jakarta. 155 halaman.
- Wirahadikusumah, M. 1989. *Biokimia: Protein, Enzim dan Asam Nukleat*. ITB. Press. Bandung. 91 halaman.
- Wiseman, A. 1985. *Handbook of Enzymes Biotechnology 2nd Ed*. Ellis Harwood Lim. Chichester.
- Yandri, A.S. 2004. *Karakterisasi dan Modifikasi Kimia α-amilase dari Bakteri Isolat Lokal Bacillus subtilis ITBCCB148*. (Disertasi). Institut Teknologi Bandung. Bandung.
- Yang, Z., D. Michael, A. Robert, X.Y. Fang and J.R. Alan . 1996. Polyethylene Glycol-Induced Stabilization of Subtilisin. *Enzyme Microb. Technol.* **18**: 82-89.
- Yunasfi. 2008. *Serangan Patogen dan Gangguan Terhadap Proses Fisiologis Pohon*. Universitas Sumatera Utara.
- Zaldivar, J. and Olsson, L. 2001. Fuel ethanol production from lignocelluloses: a challenge for metabolic engineering and process integration. *Applied Microbiology and Biotechnology*. **56**: 17-34.