UNIVERSITAS
GADJAH MADA
Aplikasi Probiotik PK untuk Peningkatan Kekebalan Non Spesifik Seluler Ikan Nila (Oreochromis sp.)
MUHAMAD NAUFAL DZAKY, Alim Isnansetyo
Universitas Gadjah Mada, 2019 | Diunduh dari http://etd.repository.ugm.ac.id/

DAFTAR PUSTAKA

Affandi, R. & U.M. Tang. 2002. Fisiologi Hewan Air. Universitas Riau Press, Riau.

Ahmad, R.Z., 2005. Pemanfaatan Khamir *Saccharomyces cerevisiae* untuk Ternak.Jurnal Wartazoa. 15 (1): 49-55

Ahmadi, H., Iskandar., Kurniawati., N., 2012. Pemberian Probiotik Dalam Pakan Terhadap Pertumbuhan Lele Sangkuriang (*Clarias graprienus*) Pada Pendederan II. Jurnal Ilmiah Perikanan dan Kelautan vol. 6. 3 (4) : 99-107

Amrullah. 2004. Penggunaan Imunostimulan Spirulina platensis Untuk Meningkatkan Ketahanan Tubuh Ikan Koi (*Cyprinus carpio*) Terhadap Virus Herpes [Tesis]. Bogor: Program Pascasarjana, Institut Pertanian Bogor.

Amlacher E. 1970. Textbook of fish disease. Conroy D. A., R. L. Herman (eds.) TFH Publ. Neptune. New York. 320p.

Anderson, D.P. 1974. Fish immunology. In. Diseases of fishes. Ed. S.F. Snieszko dan H.R. Axelrod. T.F.H. Publications Inc.Ltd. U.S.A. 218 p.

Anderson ,D.P. 1992. *Immunostimulants, Adjuvants,and Vaccine Cariies in Fish : Application to Aquaculture. Annual Rev.* Journal Of Fish Disease, 2 : 281-307. Pergamen Press Ltd. West Virginia. 26 hal.

Anderson, D. P. and Siwicki. 1994. *Syplified assay for measuring nonspecific defence mechanism in fish.* Fish Health section. American Fisheries Meeting. Seatle, Washington, 1-26.

Angka SL. 2005. Kajian Penyakit Motile Aeromonas Septicemia (MAS) Pada Ikan Lele Dumbo Clarias sp.: patologi, pencegahan dan pengobatannya dengan Fitofarmaka. [disertasi]. Sekolah Pascasarjana, Institut Pertanian Bogor.

Ardelli, B.F. & P.T.K. Woo. 2006. Immunocompetent Cells and Their Mediators. In: Bruno D.W. (Ed.) Fin Fish. Fish Disease and Disorder. 3(2) : 702-724.

Austin B, Stuckey LF, Robertson PAW, Effendi I, Griffith DRW (1995) *A probiotic strain of Vibrio alginolyticus effective in reducing diseases caused by Aeromonas salmonicida, Vibrio anguillarum and Vibrio ordalii*. J Fish Dis 18:93–96.

Baratawdijaja, K.G. 2004. Immunologi Dasar. Fakultas Kedokteran Universitas Indonesia, Jakarta, p: 588.

Baratawidjaja,K.G., 2006, Imunologi Dasar, Edisi 7. Balai Penerbit Fakultas Kedokteran Universitas Indonesia. Yogyakarta. hal 30-47.

Beck G. & Gail, S. Habicht. 1996. *Immunity and the Invertebrates*. Scientific American: 60-66.

UNIVERSITAS
GADJAH MADA
Aplikasi Probiotik PK untuk Peningkatan Kekebalan Non Spesifik Seluler Ikan Nila (Oreochromis sp.)
MUHAMAD NAUFAL DZAKY, Alim Isnansetyo
Universitas Gadjah Mada, 2019 | Diunduh dari http://etd.repository.ugm.ac.id/

Bittencourt, N.L.R., L.M. Molinary, D.O. Scoaris, R.B.Pedroao, C.V. Nakamura, B.A.A., Filho, and B.P.D. Filho. 2003. Haematological and biochemical values for nile tilapia *Oreochromis niloticus* cultured in semi-intensive system. Biological Sciences, 25:385-389.

Boyd, C. E., 1990. Water Quality in Ponds for Aquaculture. Auburn University. Alabama.

Buchanan, R.E dan Gibbons, N.S. 1974. "*Bergey's Manual of Determinative Bacteriology*, *Eight Edition"*. USA: The Williams & Wilkins Company. Hal. 329.

Buruina CT., Profir AG. Vizireanu C. 2014. Effect Of Probiotic Bacillus Species in Aquaculture – an Overview. The Annals of the University Dunarea de Jos of Galati Fascicle VI-Food Technology, 38(2): 9-17.

Castro, A,. Bernis C, Vigneron S.L. 2005. The anaphase-promoting complex: *A Key Factor in the Regulation of Cell Cycle*. Standford University. Oncogene 24(3): 314-25.

Champman, F.A. 2006. Culture of Hybrid Tilapia. Institute of Food and Agriculture Science. University of Florida, United States.

Chinabut S, Limsuwan C, dan Sawat PK. 1991. Histology of the walking catfish *Clarias batrachus*. Thailand: Department of Fisheries. Hal 96.

Coplin DL, Kado CI. 2001. Gram-Negatif Bacteria-*Pantoea*. Di dalam: Schaad NW. Jones JB, and Chun W, editor. *Laboratory Guide for Identification of Plant Pathogenic Bacteria*. Ed ke-3. APS Press. Minnesota.

Das BK, Nidhi RGN, Roy P, Muduli AK, Swain P, Mishra SS, Jayasankar P. 2014. Antagonistic activity of cellular components of *Bacillus subtilis* AN11 against bacterial pathogens. *Int J Curr Microbiol App Sci* 3(5): 795-809.

Dellman HD dan Brown EM. 1989. Buku Teks Histologi Veteriner. Hartono (Penerjemah). UI Press. Jakarta.

Dhingra,M. M. 1993. Probiotic in Poultry Diet Levestock Production and Management. Sania Enterprises Indore 452001. India.

Doi, Ray, H. & Martina Mc Gloughlin. 1992. Biology of Bacilli : *Applications to industry, Butterworth-Hcinemann, Boston*. Oxford, London. Singapore, Sydney Toronto. 370 pp. Wellington.

Effendi,I. 2004. *Pengantar Akuakultur*. Jakarta : Penebar Swadaya

Erika, Y. 2008. Gambaran Diferensiasi Leukosit pada Ikan Mujair (*Oreochromis mossambica*) di Daerah Ciampea Bogor. Institut Pertanian Bogor. Skripsi.

UNIVERSITAS
GADJAH MADA
Aplikasi Probiotik PK untuk Peningkatan Kekebalan Non Spesifik Seluler Ikan Nila (Oreochromis sp.)
MUHAMAD NAUFAL DZAKY, Alim Isnansetyo
Universitas Gadjah Mada, 2019 | Diunduh dari http://etd.repository.ugm.ac.id/

Ezenwaji, N.E., A. Iluno, C. Atama, C.O. Nwaigwe, & C.U. Nwaigwe. 2012. *Substitution of soyabean meal with bioactive yeast in the diet of Clarias gariepinus:* Effect on growth rate, haematological and biochemical profile. African Journal of Biotechnology. 11(91): 15802-15810.

FAO. 1991. Diagnostic, prevention, and theraphy of fish and intoxications. http://www.fao.org/. Diakses pada tanggal 20 Oktober 2018.

Feliatra. 1999. Identifikasi Bakteri Patogen (Vibrio sp) di Perairan Nongsa Batam Provinsi Riau. Jurnal Natur Indonesia II.

Fuller, R. 1987. A Review: *Probiotics in Man and Animals*. J Appl Bacteriol, 66:355-37.

Fujaya. 2004. Fisiologi Hewan Air. Rineka Cipta. Jakarta.

Green, D.H, Phil, R.W., Anthony. 1999. Applied and Environmental Microbiologi: *Characterization of Two Bacillus Probiotics*. American Society for Microbiologi. United States. Vol. 65. No.9.

Gobinath J, Ramanibai R. 2012. Effect of Probiotic Bacteria Culture on Pathogenic Bacteria From Fresh Water Fish *Oreochromis mossambicus*. Journal of Modern Biotechnology Vol. 1, No.1 :50-54.

Gómez , Geovanny D. and Jośe Luis Balćazar. 2007. A review on the interactions between gutmicrobiota and innate immunity of fish. FEMS Immunol Med Microbiol 52 (2008) 145–154.

Hapsari, A. N. 2000. Efektifitas Penambahan Probiotik Komersil Terhadap Perubahan Kualitas Air, Kelulushidupan dan Pertumbuhan Benih Ikan Nila. Universitas Diponegoro Semarang. Skripsi. Hal 1-53.

Hong HA, Duc LH, Cutting SM. 2004. The use of bacterial spore formers as probiotics. FEMS Microbiology Reviews 29: 813–835.

Ingram, G. A. 1980. The immune response of the brown trout (*Salmo trutta L.*) to injected antigens. University of Salford. Ph.D. Thesis.

Irianto, A and B. Austin. 2002. Use of probiotic to control furunculosis in Rainbow Trout *Oncorhynchus mykiss (Walbaum).* Journal of Fish Diseases 25 : 333-342.

Irianto, A. 2005. Patologi Ikan Teleostei. Gadjah Mada University Press. Yogyakarta. Hal 256.

Iribarren, D., P. Daga & M.T. Moreira, G. Feijoo. 2012. Potential Environmental Effects of Probiotics Used in Aquaculture. *Aquacult Int.* 20: 779-789.

Isnansetyo, A., H.M. Irpani, T.A. Wulansari, and N. Kasanah. 2014. Oral Administration of alginate from A Tropical Brown Seaweed, *Sargassum* sp. to Enhance Non-Spesific Defence in Walking Catfish (*Clarias* sp.). Aquacultura Indonesiana. 2:49-55.

UNIVERSITAS
GADJAH MADA
Aplikasi Probiotik PK untuk Peningkatan Kekebalan Non Spesifik Seluler Ikan Nila (Oreochromis sp.)
MUHAMAD NAUFAL DZAKY, Alim Isnansetyo
Universitas Gadjah Mada, 2019 | Diunduh dari http://etd.repository.ugm.ac.id/

Isnansetyo, A., A. Fikriyah, N. Kasanah, Murwantoko. 2015. Non-specific immune potentiating activity of fucoidan from a tropical brown algae (*Phaeophyceae*), *Sargassum cristaefolium* in tilapia (*Oreochromis niloticus*). Aquacult Int.

Jensen, M., Sing,P., Batten,W., Greenberg D. P., Ambinder R. F,. 1997. Isolation of Epstein-Barr Virus (EBF)-Specific Cytotoxic T-Lymphocytes that Lyse Reed Sternberg Cells: *Implications for Immune Mediated Theraphy of EBF+ Hodgkin's Disease*. Blood Journal. American Society of Hematology.

Kresno, S.B. 2001. Imunologi : Diagnosis dan Prosedur Laboratorium. Edisi Ketiga. Fakultas Kedokteran. Universitas Indonesia. Jakarta. 437 hlm.

Kepmen KKP. 2012. Keputusan Menteri Kelautan dan Perikanan Republik Indonesia Nomor Kep.47/Men/2012 tentang Pelepasan Ikan Nila Merah Nilasa. Kementrian Kelautan dan Perikanan. Jakarta.

Kordi, M.G.H. dan A.B. Tancung. 2007. Pengelolaan Kualitas Air. PT Rineka Cipta, Jakarta.

Madigan, M.T. 2005. Anoxygenic phototrophic bacteria from extreme environments. In: Govindjee, Beatty, J.T., Gest, H. and J.F. Allen (eds), Discoveries in Photosynthesis, vol. 20 of Advances in Photosynthesis, pp. 969-983.

Mazza P. 1994. The use of *Bacillus subtilis* as an antidiarrhoeal microorganism. *Boll Chim Farm.* 133: 3-18.

Meyer, G. 2011. Immunology Chapter One: Innate (Nonspesific) Immunity. *Microbiology and Immunology Online Textbook.* USC School of Medicine. http:/pathmicro.med.c.edu/ghaffar/innate.htm. Diakses pada 12 Juli 2018.

Misra C.K, Das BK, Mukherjee SC, Pattnaik P. 2006. Effect Of Longterm Administration Of Dietary B-Glucan On Immunity, Growth And Resistance Of Labeo Rohita Fingerlings. Aquac 255 : 82-92.

Mudjiman, A., 2001. Makanan Ikan. Penebar Swadaya. Jakarta.

Nurcahyo. 2001. Immunologi Parasiter. Pascasarjana UGM. UGM Press.Yogyakarta.

Oliva, A. and Teles. 2012. Nutrition and health of aquaculture fish. Journal of Fish Diseases. 35: 83–108.

Pellitero, P.A., Palenzuela, and A.S. Bobadilla. 2008. Histopathology and cellular responsein *Enteromyxum leei* (*Myxozoa*) infections of *Diplodus puntazzo* (Teleostei). Parasitology Internationak. 57:110-120.

Pelczar, M.J., E.C.S. CHAN, & N.R. Krieg. 1976. Microbiology. Me Graw Hill Book Company. New York : 896 pp.

Putra, A N. 2010. Kajian Probiotik, Prebiotik, dan Sinbiotik Untuk Meningkatkan Kinerja Pertumbuhan Ikan Nila (*Oreochromis niloticus*). Tesis. IPB Bogor. 109 hlm.

UNIVERSITAS
GADJAH MADA
Aplikasi Probiotik PK untuk Peningkatan Kekebalan Non Spesifik Seluler Ikan Nila (Oreochromis sp.)
MUHAMAD NAUFAL DZAKY, Alim Isnansetyo
Universitas Gadjah Mada, 2019 | Diunduh dari http://etd.repository.ugm.ac.id/

Ramnik S. 2003. Haematology for students and practitioners. 5th edition. Jaypee Brothers. New Delhi.

Rauta, R. P., B. Nayak & S. Das. 2012. Immune System and Immune Responses in Fish and their role in comparative immunity study: a model for higher organisms. Immunology Letters.148: 23– 33.

Rajagukguk, B. B., Lumenta, C., dan Mokolensang, J.F., 2017. Pemanfaatan ragi (*Saccharomyces cerevisiae*) pada Formulasi Pakan Meningkatkan Pertumbuhan Ikan Nila (*Oreochromis niloticus*). Budidaya Perairan. 5 (3): 44-49.

Robertsen, B. 2006.The interferon system of teleost fish. Fish and Shellfish Immunology. 20: 172–191.

Rombout JH, Huttenhuis HBT, Picchietti S, Scapigliati S .2005. Phylogeny and ontogeny of fish leucocites. Fish and Shellfish Immunology 19, 441–455.

Rheinheimer. 1980. Aquatic Microbiology, A. willey Inter Science Publication Chichester: 225 pp.

Rustadi. 2009. Pengendalian Eutrofikasi Perairan Waduk dengan Perikanan: Studi Kasus di Waduk Sermo. Jurnal Aquaculture Indonesiana 10(3):199-208.

Saanin, S. 1989. Taksonomi dan Kuntji Identifikasi Ikan. Binacipta, Bandung.

Samad, A.P.A., U. Santoso, Meng-Chou, Lee, Fan-Hua, Nan. 2014. Effects of dietary katuk (*Sauropus androgynus* L. Merr.) on growth, non-specific immune and diseases resistance against *Vibrio alginolyticus* infection in grouper *Epinephelus coioides*. Fish and Shellfish Immunology. 36: 582-589.

Sarathi,M., V.P., Ishaq Ahmed, C. Venkatesan, G. Balasubramanian, I. Prabavathy and A.S. Sahuul Hameed. 2007. Comparative study on Immune Response of *Fenneropenaeus indicus* to *Vibrio Alginolyticus* and white spot syndrome virus. Aquaculture. 271: 8-20.

Salasia, S.I.O., D. Sulanjari, dan A. Ratnawati. 2001. Studi Hematologi Ikan Air Tawar. Jurnal Biologi. 2: 710-723.

SNI (Standar Nasional Indonesia). 2009. SNI 7550 Produksi ikan nila (*Oreochromis niloticus*, Bleeker) kelas pembesaran di kolam air tenang. Badan Standardisasi Nasional ICS 65.120. Jakarta.

Stafford, J.L., & M. Belosevic. 2003. Transferrin and the innate immune response of fish: identification of a novel mechanism of macrophage activation. Development Comparative Immunology. 27: 539–554.

UNIVERSITAS
GADJAH MADA
Aplikasi Probiotik PK untuk Peningkatan Kekebalan Non Spesifik Seluler Ikan Nila (Oreochromis sp.)
MUHAMAD NAUFAL DZAKY, Alim Isnansetyo
Universitas Gadjah Mada, 2019 | Diunduh dari http://etd.repository.ugm.ac.id/

Suksamrarn, S., Suwannapoch, N., Phakhodee, W., Thanuhiranlert, J., Ratananukul, P., Chimnoi, N., and Suksamrarn, A. (2003). Antimycobacterial Activity of Prenylated Xanthones from the Fruit of *Garcinia mangostana*, *Chem. Pherm. Bull*, 51 (7), 857-859 *(Gentianaceae)*, Drukkerij Elinkwijk bv, Utrecht, pp 109 – 114.

Suminto and K. Hirayama. 1996. Effects of bacterial coexistence on the growth of a marine diatom *Chaetoceros gracilis*. Fish. Sci., 62: 40-43.

Suminto, Istiyanto.S, Sunaryo. 2007-2008. Optimalisasi Paket Teknologi Budidaya Udang Vannamei (*Litopenaeus vannamei*) dengan Memanfaatkan Probiotik dari Usus Udang untuk Peningkatan Kualitas dan Produksi, sebagai Anggota. Hibah Bersaing. DIPA Universitas Diponegoro.

Supian E. 2012. *Penaggulangan Hama dan Penyakit Pada Ikan*. Pustaka Baru, Yogyakarta.

Svobodova Z, Vyukusova B. 1991. Diagnostik, Prevention and Therapy of Fish Disease and Intoxication. Research Institute of fish Culture and Hydrobiology Vodnany Czechoslovakia.

Syakuri, H., Triyanto dan K.H. Niitimulyo. 2003. Perbedaan Daya Tahan Non Spesifik Lima Spesies Ikan Air Tawar Terhadap Infeksi *Aeromonas hydrophila*. Jurnal Perikanan Universitas Gadjah Mada Vol V (2): hal 1-10.

Tizard, I. 1982. *Veterinary Immunology*, An Introduction. Ed Ke-3. W,B. Saunders Company, Canada.

Tizard, I. 1987. Pengantar imunologi Veteriner.Universitas Airlangga Press. Surabaya.

Tizard, I. 1988. Pengantar imunologi Veteriner (Terjemahan). Universitas Airlangga. Surabaya. 497 hal.

Uribe, C., H. Folch, R. Enriquez, and G. Morgan. 2011. Innate and Adaptive Immunity in Teleost Fish: A Review. Veterinari Medicine. 10: 486-503.

Vadstein, O. 1997. The use of immunosimulation of marine larviculture: possibilities and challenges. Aquaculture. 155: 401-417.

Verstraete, W., Verschuere, L., Rombaut, G., Sorgeloos, P. 2000. Probiotic Bacteria as Bioloical Control Agents in Aquaculture. *Microbial and Molecular Biol Rev* 64: 655-671.

Watanuki H., G. Chakraborty, H. Korenaga, T. Kono, R.B. Shivappa, and M. Sakai. 2009. Immunostimulatory effects of natural human interferon-alpha (huIFN-a) on carps *Cyprinus carpio* L..Veterinary Immunology and Immunopathology. 131: 273–277.

Wang Bp-Yan, Rong Li, Lin Junda. 2008. Probiotics Cell Wall Hydropobicity Bioremediation of Aquaculture. Aquaculture 269: 349-352.

UNIVERSITAS
GADJAH MADA
Aplikasi Probiotik PK untuk Peningkatan Kekebalan Non Spesifik Seluler Ikan Nila (Oreochromis sp.)
MUHAMAD NAUFAL DZAKY, Alim Isnansetyo
Universitas Gadjah Mada, 2019 | Diunduh dari http://etd.repository.ugm.ac.id/

Widiyati, A dan M. T. D. Sunarno. 2010. Dampak penggunan pakan buatan terhadap keberlanjutan perikanan budidaya di perairan waduk. Badan research kelautan dan perikanan. Bogor.

Widanarni, Lidaenni MA, Wahjuningrum D. 2010. Pengaruh pemberian bakteri probiotik Vibrio SKT-b dengan dosis yang berbeda terhadap kelangsungan hidup dan pertumbuhan larva udang windu *Penaeus monodon* Fab. Jurnal Akuakultur Indonesia 9: 21–29.

Wulansari. (2009). Pengaruh Ekstrak Air dan Ethanol Alpinia spp terhadap aktifitas dan Kapasitas Fagositosis Sel Macrophage yang Diinduksi dari Bakteri *Stapilococcus Epidermis* Secara In Vitro. Pusat Penelitian Biologi LIPI. Bogor.

Yano, T. 1996. The Non Spesific Immune System: Humoral Defence. In; Iwama, G, & Nakanishi, T. (Ed.) The Fish Immune System: Organism, Pathogen, and Environment. Academic Press. San Diego. 105-157