DAFTAR PUSTAKA

Abdullah, Y. 2008. Efektivitas Ekstrak Daun Paci – Paci (*Leucas lavandulaefolia*) untuk Pencegahan dan Pengobatan Infeksi Penyakit MAS (*Motile Aeromonas Septicemia*) ditinjau dari Patologi Makro dan Hematologi Lele Dumbo *Clarias* sp. Fakultas Perikanan dan Ilmu Kelautan. Institut Pertanian Bogor. Skripsi.

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

Aisiah, S. 2012. Efikasi Ekstrak Mengkudu (*Morinda citrofolia*) terhadap Bakteri *Aeromonas hydrophilla* dan Toksisitasnya pada Ikan Nila (*Oreochromis niloticus*). Jurnal Sains Akuatik 14 (1) : 55 – 63.

Alifuddin, M. 2002. Imunostimulasi pada Hewan Akuatik. Jurnal Akuakultur Indonesia 1(2) : 87-92.

Anderson DP, Siwicky AK. 1993. Basic hematology and serology for fish health programs. *Paper presented in second symposium on diseases in Asian Aquaculture* ''Aquatic Animal Health and The Environment''. Phuket, Thailand. 25-29th October 1993. 17 hlm.

Anthony, H., S. Birtwistle, K. Eaton, dan J. Maberly. 2019. Superoxide Dismutase. www.biolab.co.uk Diakses tanggal 1 Desember 2019.

Banerjee, G & A.K. Ray. 2017. The Advancement of Probiotics Research and Its Application in Fish Farming Industries. Elsevier. Journal of Reasearch and Veterinary Science 115 : 66 – 77.

Baratawidjaja, K.G. 1996. Imunologi Dasar. Fakultas Kedokteran Universitas Indonesia, Jakarta.

Biller, J.D. and L.S. Takahashi. 2018. Oxidative Stress and Fish Immune System : Phagocytosis and Leukocyte Respiratory Burst Activity. Annals of the Brazilian Academy of Sciences 90 (4) : 3403 – 3414.

Dellman, H.D., E.M. Brown. 1989. Buku Teks Histologi Veteriner 1. UI Press. Jakarta.

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

Fardiaz, S. 1993. Analisis Mikrobiologi Pangan. PT.Raja Grafindo Persada. Jakarta.

Flores, M.L. 2011. The Use of Probiotic in Aquaculture : an Overview. International Research Journal of Microbiology 2 (12) : 471 – 478.

Food and Agriculture Organization. 2019. Fishery and Aquaculture Statistics Aquaculture Production. FAO Yearbook.

Fuller, R. 1992. Probiotics; The Scientific basis. Chapman & Hall. United Kingdom.

Giri, S. S., V. Sukumaran, M. Oviya. 2013. Potential probiotic *Lactobacillus plantarum* VSG3 improves the growth, immunity, and disease resistance of tropical freshwater fish, *Labeo rohita*. Elsevier. Journal of Fish and Shellfish Immunology 34 : 660 – 666.

Gusrina. 2008. Budidaya Ikan Jilid 2. Direktorat Pembinaan Sekolah Kejuruan. Direktorat Jenderal Manajemen Pendidikan Dasar dan Menengah. Departemen Pendidikan Nasional.

Guyton A.C. and Hall J.E. 1997. Buku Ajar Fisiologi Kedokteran. Edisi 9. Jakarta.

Hagi, T., dan Takayuki H. 2009. Screening and Characterization of Potential Probiotic Lactid Acid Bacteria from Cultured Common Carp Intestine. Bioscience, Biotechnology, and Biochemistry 73 (7) : 1479 – 1483.

Hartika, R., Mustahal, A.N. Putra. 2014. Gambaran Darah Ikan Nila (*Oreochromis niloticus*) dengan Penambahan Dosis Prebiotik yang Berbeda dalam Pakan. Jurnal Perikanan dan Kelautan 4 (4) : 259 – 267.

He, S., W. Liu, Z. Zhou, W. Mao, P. Ren, T. Marubashi, E. Ringo. 2011. Evaluation of Probiotic Strain *Bacillus subtilis* C3102 as a Feed Suplement for Koi Carp (*Cyprinus carpio*). Journal Aquatic Research and Development S1 : 1 - 7

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

Isnansetyo, A., A. Fikriyah, N. Kasanah, Murwantoko. 2016. Non-spesific Immune Potentiating Activity of Fucoidan from Tropical Brown Algae (Phaeophyceae) *Sargassum cristaefolium* in Tilapia (*Oreochromis niloticus*). Aquacult Int. 24 : 465 – 477.

Isnansetyo, A., H.M. Irpani, T.M. Wulansari, and N. Kasanah. 2014. Oral Administration of Alginate from Tropical Brown Seaweed, *Sargassum* sp. to Enhance Non-Specific Defense in Walking Catfish (*Clarias* sp.). Aquacultura Indonesiana 24 : 465 – 477.

Iqbal, M. 2011. Kelangsungan Hidup Ikan Lele (*Clarias gariepinus*) pada Budidaya Intensif Sistem Heterptrofik. Fakultas Sains dan Teknologi. Universitas Islam Negeri Syarif Hidayatullah. Skripsi

Iswah, A. 2019. Probiotik *Bacillus* spp. Dan *Lactococcus raffinolactis* untuk Meningkatkan Pertahanan Tubuh Non-Spesifik Seluler Lele Dumbo (*Clarias* sp.). Fakultas Pertanian. Universitas Gadjah Mada. Skripsi.

Iwama, G. dan T. Nakanishi. 1996. The Fish Immune System. Organism, Pathogen, and Environment. Academic Press. San Diego. California. USA.

Kementrian Perikanan dan Kelautan. 2019. Judul?. https://kkp.go.id/an-component/media/upload-gambar-pendukung/kkp/DATA%20KKP/Bahan%20 RO%20KKP%202018%20(final).pdf. Diakses tanggal 17 November 2019.

Khairuman dan Khairul Amri. 2002. Budidaya Lele Dumbo secara Intensif. Agromedia Pustaka. Jakarta.

Kueburtonye, F.K.A., E.D. Abarike, Y. Lu. 2019. A Review On The Application Of *Bacillus* As Probiotics In Aquaculture. Elsevier. Journal of Fish and Shellfish Immunology 87 : 820 – 828.

Lazado. C.C., C.M.A. Caipang, and E.G. Estante. 2015. Prospects of Host-associated Microorganisms in Fish and Penaeids as Probiotics wit Immunomodulatory Functions. Fish & Shellfish Immunology 45 : 2 - 12.

Laing, K.J and J.D. Hansen. 2011. Fish T Cells : Recent Advance Through Genomics. Developmental and Comparative Immunology 35 : 1282 – 1295.

Lieschke, G.J and N. S. Trede. 2009. Fish Immunology. Current Biology XIX (16) : 678 – 682.

Lusiastuti, A.M., Septyan A., Reza S. 2017. Efektivitas Kombinasi Probiotik Mikroenkapsulasi Melalui Pakan untuk Pengendalian Penyakit *Motile Aeromonas Septicemia* pada Ikan Lele, *Clarias garieprenus*. Jurnal Riset Akuakultur 12 (2) : 179 – 186.

Madigan, M.T., J.M. Martinko, D.A. Stahl, D.P. Clarck. 2011. Brock Biology of Microorganisms. Pearson Education. San Fransisco.

Moyle, P.B. and J.J. Cech. 1988. Fishes an Introduction to Ichtyology. Second Edition. Department of Wildlife and Fisheries Biology. University of California.

Munasir, Z. 2001. Respons Imun Terhadap Infeksi Bakteri. Sari Pediatri 2(4) : 193-197.

Nabib, R. Pasaribu F.H. 1989. Patologi dan Penyakit Ikan. Departemen Pendidikan dan Kebudayaan. Direktorat Jendral Pendidikan Tinggi. Pusat Antar Universitas Bioteknologi. Institut Pertanian Bogor.

National Research Council (NRC). 2011. Nutrient Requirements of Fish and Shrimp. National Academy Press. Washington.

Nayak, S.K. 2010. Probiotics and Immunity : A Fish Perspective. Fish and Shellfish Immunology 29 : 2 - 14.

Ogunji, J.O. dan Wirth, M. 2002. Influence of Dietary Protein Deficiency on Amino Acid and Fatty Acid Composition in Tilapia *O. niloticus* Fingerlings. Isr. J. Aquacult. Bamidgeh. 54 : 64 – 72.

Olvera, M.A., Lara, M., Guzman, B.E., and Lopez, W.G. 2001. Effect of The Use of Probiotics on Growth of Tilapia *Oreochromis niloticus* Reared Under Stress Conditions. Aquaculture-Book of abstracts 143-J.M.Parker-Coliseum-Louisiana Stat5e Univ. Baton-Rouge-LA-70803-USA-World-Aquaculture Society 497.

Pakpahan, F., Supono, dan Yudha T.A. 2016. Imunitas Non Spesifik dan Sintasan Lele Masamo (*Clarias* sp.) dengan Aplikasi Probiotik, Vitamin C dan Dasar Kolam Buatan. E-Jurnal Rekayasa dan Teknologi Budidaya Perairan IV (2) : 491 – 496.

Rahardjo, M.F. dan Muniarti. 1984. Anatomi Beberapa Jenis Ikan Ekonomi Penting di Indonesia. Fakultas Perikanan dan Ilmu Kelautan. Institut Pertanian Bogor.

Rahmiati dan Mugi M. 2017. Eksplorasi Bakteri Asam Laktat Kandidat Probiotik dan Potensinya dalam Menghambat Bakteri Patogen. Journal of Islamic Science and Technology 3 (2) : 141 – 150.

Ringo, E and Gatesoupe, F.J. 1998. Lactid Acid Bacteria in Fish A Review. Aquaculture 160 : 177 – 203.

Saanin, H. 1984. Taksonomi dan Kuntji Identifikasi Ikan. Binatjipta. Bogor.

Saliu, J.K., dan Kafilat A.B. 2012. Toxicological Effects of Lead and Zinc on the Antioxidant Enzyme Activities of Post Juvenile *Clarias garieprenus*. Journal of Research and Environment 2 (1) : 21 – 26.

Sarathi, M., I. Ahmed, C. Venkatesan, G. Balasubramaniyan, J. Prebavathy, and A.S.S. Hameed. 2007. Comparative Study on Immune Response of *Fenneropenaeus indicus* to *Vibrio alginolyticus* and White Spot Syndrome Virus. Aquaculture 271 : 8 -20.

Satyantini, Woro H., Agustono, Arimbi, Emy K. S., Myrna B., Lina W. A. 2016. Peningkatan Sistem Imun Non-spesifik Gurame Pascapemberian Ekstrak Air Panas Mikroalga *Spirulina platensis*. Jurnal Veteriner 17(3) : 347-354.

Schroeder H.W., J.R. and Cavacini L. 2010. Structure and Function of Immunoglobulins. J Allergy Clin Immunol. 125 : 41-52.

Selvia, M., Supono, Yudha T. A. 2016. Imunitas Non Spesifik dan Sintasan Lele Masamo (*Clarias* sp.) dengan Aplikasi Probiotik dan Dasar Kolam Buatan. E-Jurnal Rekayasa dan Teknologi Budidaya Perairan IV (2) : 507 – 514.

SNI (Standar Nasional Indonesia). 2014. Ikan Lele Dumbo (*Clarias* sp.) Bagian 4 : Produksi Benih. Badan Standarisasi Nasional. Jakarta

Suwarno, Y. F., Sarjito, Slamet B.P. 2014. Sensitivitas Bakteri yang Berasosiasi dengan Penyakit Ikan Lele Dumbo (*Clarias gariepinus*) Terhadap Berbagai Macam Obat Ikan yang Beredar di Kabupaten Pati. Journal of Aquaculture, Management, and Technology III (4) : 134 – 141.

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

Triyatmo, B. 2002. Kualitas dan Kesuburan Air Budidaya Lele Dumbo (*Clarias garieprenus*) dengan Volume Pergantian Air Berbeda. Jurnal Perikanan UGM IV (2) : 15 – 21

Vijayabaskar P. and Somasundaram S.T. 2008. Isolation of Bacteriocin Producing Lactic Acid Bacteria from Fish Gut and Probiotics Activity Againts Common Freshwater Fish Pathogen *Aeromonas hydrophila*. Journal of Biotechnology 7 : 124 – 128.

Verschuere, L., Rombaut, G., Sorgeloos, P., Verstraete, W., 2000. Probiotic bacteria as biological control agents in aquaculture. Microbiol. Mol. Biol. Rev. 64, 655–671.

Verma, V.K., Kumari V.R., Neeta S., dan Om P. 2013. Immunostimulatory Effect of Artificial Feed Supplemented with Indigenous Plants on *Clarias garieprenus* againts *Aeromonas hydrophilla*. Journal of Fish and Shellfish Immunology 35 : 1924 – 1931.

Wahab, A.S. dan M. Julia. 2002. Sistem Imun, Imunisasi, dan Peyakit Imun. Widya Medika. Jakarta.

Wang, Y. and Xu, Z.R. 2006. Effect of Probiotic for Common Carp (*Cyprinus carpio*) Based on Growth Performance and Digestive Enzyme Activities. Animal Feed Science and Technology 127 : 283 – 292.

Windriyani, U. 2017. Budidaya Ikan Lele Sistem Bioflok. Direktorat Produksi dan Usaha Budidaya. Kementrian Kelautan dan Perikanan Republik Indonesia : 18

Wulandari, R. 2017. Pengaruh Pemberian Probiotik terhadap Aktivitas Letupan Respirasi Leukosit dalam Darah Ikan Nila (*Oreochromis niloticus*). Intek Akuakultur 1 (1) : 71 – 76.

Xia, Y. , Maixin L., Gang C., Jianmeng C., Fengying G., Miao W., Zhigang L., Defeng Z., Huaping Z., Mengmeng Y. 2018. Effects of dietary *Lactobacillus rhamnosus* JCM1136 and *Lactococcus lactis* subsp. lactis JCM5805 on the growth, intestinal microbiota, morphology, immune response and disease resistance of juvenile Nile tilapia, *Oreochromis niloticus*. Elsevier. Journal of Fish and Shellfish Immunology 76 : 368 – 379.

Zorriehzahra, M.J, S.T. Deshad, M. Adel, R. Tiwari, K. Karthik, K. Dhama, and C. C. Lazado. 2016. Probiotics as Beneficial Microbes in Aquaculture : an Update on Their Multiple Modes of Action : A Review. Veterinary Quarterly 36 (4) : 228 – 241.