

DAFTAR PUSTAKA

- Abakari, G., G. Luo, H. Meng, Z. Yang, G. Owusu-Afriyie, E.O. Kombat, E.H. Alhassan. 2020. The use of biochar in the production of tilapia (*Oreochromis niloticus*) in a biofloc technology system-bft. *Aquacultural Engineering*, 91, p.102123.
- Abdel-Tawwab, M., A.E. Hagrass, H.A.M. Elbaghdady, M.N. Monier. 2015. Effects of dissolved oxygen and fish size on nile tilapia, *Oreochromis niloticus* (L.): growth performance, whole-body composition, and innate immunity. *Aquaculture International*, 23(5), pp.1261-1274.
- Adeyemi, S., O. 2009. Food and feeding habits of some commercially important fish species in gbedikere lake, bassa, kogi state, nigeria. *International Journal of Lake & River.*; 2:31-36
- American Public Health Association (APHA). 1989. Standard methods for the examination of water and waste water. American public health association (apha). American Water Works Association (AWWA) and Water Pollution Control Federation (WPCF). 17th ed. Washington. 1193 hal
- American Public Health Association (APHA). 1999. Standard methods for the examination of water and wastewater. 20th edition, APHA, Washington DC, 1268 p.
- Arfiandi, and A.R. Tumbol. 2020. Isolasi dan identifikasi bakteri patogen pada ikan nila (*Oreochromis niloticus*) yang dibudidayakan di kecamatan dimembe kabupaten minahasa utara tahun 2019. *e-Journal Budidaya Perairan*, 8(1).
- Athirah, A., A. Mustafa, M.A. Rimmer. 2013. Perubahan kualitas air pada budidaya ikan nila (*Oreochromis niloticus*) di tambak kabupaten pangkep provinsi sulawesi selatan. *Prosiding Forum Inovasi Teknologi Akuakultur* (Vol. 1, No. 1, pp. 1065-1075).
- Avnimelech, Y. and M. Kochba. 2009. Evaluation of nitrogen uptake and excretion by tilapia in bio floc tanks, using 15n tracing. *Aquaculture*, 287(1-2), pp.163-168.
- Avnimelech, Y. 2007. Feeding with microbial flocs by tilapia in minimal discharge bio-flocs technology ponds. *Aquaculture*, 264(1-4), pp.140-147.
- Avnimelech, Y. 2009. *Biofloc technology: a practical guide book*. World Aquaculture Society.
- Azim, M.E. and D.C. Little. 2008. The biofloc technology (bft) in indoor tanks: water quality, biofloc composition, and growth and welfare of nile tilapia (*Oreochromis niloticus*). *Aquaculture*, 283(1-4), pp.29-35.
- Azim, M.E., D.C. Little, I.E. Bron. 2007. Microbial protein production in activated suspension tanks manipulating c/n ratio in feed and implications for fish culture. *Bioresource Technology* 99, 3590-3599
- Azzam-Sayuti, M., M.Y. Ina-Salwany, M. Zamri-Saad, S. Annas, M.T. Yusof, M.S. Monir, A. Mohamad, M.H.N. Muhamad-Sofie, J.Y. Lee, Y.K. Chin, Z. Amir-Danial. 2021. Comparative pathogenicity of *Aeromonas* spp. in cultured red

- hybrid tilapia (*Oreochromis niloticus* × *Oreochromis mossambicus*). Biology, 10(11), p.1192.
- Badan Standarisasi Nasional. BSN, 2009. Sni produksi benih ikan nila (*Oreochromis niloticus*) kelas pembesaran di kolam air tenang SNI 7550:2009, Jakarta.
- Badiola, M., D. Mendiola, J. Bostock. 2012. Recirculating aquaculture systems (ras) analysis: main issues on management and future challenges. Aquacultural Engineering, 51, pp.26-35.
- Balcazar, J.L., I. Blas, I.R. Zarzuela, D. Cunningham, D. Vendrell, J.L. Muzquiz. 2006. The role of probiotics in aquaculture. Vet. Microbiol. 114: 173-186.
- Barbosa, P.T.L., J.A. Povh, K.N.N. Farias, T.V. da Silva, G.C. Teodoro, J.S. Ribeiro, , G.R. Stringhetta, C.E. dos Santos Fernandes, R.A.C. Corrêa-Filho. 2022. Nile tilapia production in polyculture with freshwater shrimp using an aquaponic system and biofloc technology. Aquaculture, p.737916.
- Baron, S., 1996. Introduction to bacteriology.medical microbiology. 4th edition. Galveston (TX): University of Texas Medical Branch at Galveston.
- Barus, T.A., 2004. Faktor-faktor lingkungan abiotik dan keanekaragaman plankton sebagai indikator kualitas perairan danau toba. Jurnal Manusia dan Lingkungan, 11(2), pp.64-72.
- Bentzon-Tilia, M., E.C. Sonnenschein, L. Gram. 2016. Monitoring and managing microbes in aquaculture–towards a sustainable industry. Microbial biotechnology, 9(5), pp.576-584.
- Boyd, C.E., 1990. Water quality in ponds for aquaculture. Alabama agricultural experiment station, Auburn University, Alabama, USA, pp.482.
- Boyd, C.E., 2014. Nitrite toxicity affected by species susceptibility, environmental conditions. Glob Aquac Advocate, 17, pp.34-37.
- Cavalcante, D. D. H., N. N.Caldini, J. L. S. da Silva, F. R. D. S. Lima, M.V. Docarmo. 2014. Imbalance in the hardness/alkalinity ratio of water and nila tilapia's growth performance. Acta Scientiarum, Technology, 36 (1):49-54.
- Chen, S., J. Ling, J.P. Blancheton. 2006. Nitrification kinetics of biofilm as affected by water quality factors. Aquacultural Engineering, 34(3), pp.179-197.
- Cherif, A., H. Ouzari, D. Daffonchio, H. Cherif, S.K. Ben, A. Hassen, S. Jaoua, A. Boudabous. 2001. Thuricin 7: a novel bacteriocin produced by *Bacillus thuringiensis* BMG1. 7, a new strain isolated from soil. Letters in Applied Microbiology, 32(4), pp.243-247.
- Cho, S.H., J.H. Jeong, M.H. Kim, K.T. Lee, D.J Kim, K.H. Kim, S.P. Oh.C.H. Han. 2015. The effects of temperature on maintaining the stability of water quality in biofloc-based zero-water exchange culture tanks. Journal of Life Science, 25(5), pp.496-506.)

- Cladera-Olivera, F., G.R. Caron, A. Brandelli. 2004. Bacteriocin-like substance production by *Bacillus licheniformis* strain p40. *Letters in Applied Microbiology*, 38(4), pp.251-256.
- Daniel, N. and P. Nageswari. 2017. Exogenous probiotics on biofloc based aquaculture: a review. *Current Agriculture Research Journal*, 5(1), p.88.
- De Schryver, P. and W. Verstraete. 2009. Nitrogen removal from aquaculture pond water by heterotrophic nitrogen assimilation in lab-scale sequencing batch reactors. *Bioresource Technology*, 100(3), pp.1162-1167.
- De Schryver, P., R. Crab, T. Defoirdt, N. Boon, W. Verstraete. 2008. The basics of bioflocs technology: the added value for aquaculture. *Aquaculture*, 277(3-4), pp.125-137.
- Direktorat Jenderal Perikanan Budidaya. 2019. Laporan kinerja. Kementerian Kelautan dan Perikanan, Jakarta.
- Duc, L.H., H.A. Hong, T.M. Barbosa, A.O. Henriques, S.M. Cutting. 2004. Characterization of bacillus probiotics available for human use. *Applied and Environmental Microbiology*, 70(4), pp.2161-2171.
- Ebeling, J.M., M.B. Timmons, J.J. Bisogni. 2006. Engineering analysis of the stoichiometry of photoautotrophic, autotrophic, and heterotrophic removal of ammonia-nitrogen in aquaculture systems. *Aquaculture*, 257(1-4), pp.346-358.
- Effendi, H. 2003. Telaah kualitas air bagi pengelola sumberdaya dan lingkungan perairan. Jakarta: Kanisius.
- Ekasari, J. 2009. Teknologi bioflok: teori dan aplikasi dalam perikanan budidaya sistem intensif bioflocs technology: theory and application in intensive aquaculture system. *Jurnal Akuakultur Indonesia*, 8(2), pp.117-126.
- Elsabagh, M., R. Mohamed, E.M. Moustafa, A. Hamza, F. Farrag, O. Decamp, M.A. Dawood, M. Eltholth. 2018. Assessing the impact of bacillus strains mixture probiotic on water quality, growth performance, blood profile and intestinal morphology of Nile tilapia, *Oreochromis niloticus*. *Aquaculture Nutrition*, 24(6), pp.1613-1622.
- El-Sayed, A.-F. M. 2020. Taxonomy and Basic Biology. *Tilapia Culture*, 21-31.
- Emerenciano, M.G.C., L.R. Martínez-Córdova, M. Martínez-Porchas, A. Miranda-Baeza. 2017. Biofloc technology (bft): a tool for water quality management in aquaculture. *Water quality*, 5, pp.92-109.
- Erdem, B., E. Kariptaş, E. Cil, K. IŞIK. 2011. Biochemical identification and numerical taxonomy of *Aeromonas* spp. isolated from food samples in Turkey. *Turkish Journal of Biology*, 35(4), pp.463-472.
- Ergas, S.J. and V. Aponte-Morales. 2014. Biological nitrogen removal. *Comprehensive Water Quality and Purification*, 3, pp.123-149.

- Gasco, L., F. Gai, G. Maricchiolo, L. Genovese, S. Ragonese, T. Bottari, G. Caruso. 2018. Supplementation of vitamins, minerals, enzymes and antioxidants in fish feeds. *Feeds for the Aquaculture Sector* pp. 63-103.
- Ghufran, M. 2011. *Pemeliharaan Nila Secara Intensif*. Akademia. Jakarta.
- Goddek, S., A. Joyce, S. Wuertz, O. Körner, I. Bläser, M. Reuter, K.J. Keesman. 2019. Decoupled aquaponics systems. *Aquaponics Food Production Systems*, p.201.
- Green, B.W., K.K. Schrader, M. McEntire. 2019. Effects of solids removal on water quality and channel catfish production in a biofloc technology production system. *Journal Of Applied Aquaculture*, 31(1), Pp.1-16.
- Green, B.W., K.K. Schrader and, P.W. Perschbacher. 2014. Effect of stocking biomass on solids, phytoplankton communities, common off-flavors, and production parameters in a channel catfish biofloc technology production system. *Aquac Res* 45:1442–1458.
- Hal, A. M., and M.I. El-Barbary. 2020. Gene expression and histopathological changes of nile tilapia (*Oreochromis niloticus*) infected with *Aeromonas hydrophila* and *Pseudomonas fluorescens*. *Aquaculture*, 526, 735392.
- Hardi, E.H., R.A. Nugroho, G. Saptiani, R.I.A. Sarinah, M. Agriandini, M. Mawardi. 2018. Identification of potentially pathogenic bacteria from tilapia (*Oreochromis niloticus*) and channel catfish (*Clarias batrachus*) culture in samarinda, east kalimantan, indonesia. *Biodiversitas Journal of Biological Diversity*, 19(2), pp.480-488.
- Hewitt, D.R. and P.F. Duncan. 2001. Effect of high-water temperature on the survival, moulting and food consumption of penaeus (*Marsupenaeus japonicus*) (Bate, 1888). *Aquaculture Research*, 32(4), pp.305-313.
- Hlordzi, V., F.K. Kuebutornye, G. Afriyie, E.D. Abarike, Y. Lu, S. Chi, M.A. Anokyewaa. 2020. The use of bacillus species in maintenance of water quality in aquaculture: a review. *Aquaculture reports*, 18, p.100503.
- Hong, H.A., L.H. Duc, S.M. Cutting. 2005. The Use of Bacterial Spore Formers as Probiotics. *FEMS Microbiology Reviews*, 29(4), pp.813-835.
- Hossen, M.R., S. Sultana, M. Kabiraj. 2018. Effect of commercial inorganic fertilizer on abundance of plankton in pond polyculture system. *Khulna University Studies* Vol.15(1), pp.49-59.
- Hostins, B., A. Braga, D.L. Lopes, W. Wasielesky, L.H. Poersch. 2015. Effect of temperature on nursery and compensatory growth of pink shrimp *Farfantepenaeus brasiliensis* reared in a super-intensive biofloc system. *Aquacultural Engineering*, 66, pp.62-67.
- Huicab-Pech, Z.G., M.R. Castaneda-Chavez, F. Lango-Reynoso. 2017. Pathogenic bacteria in *Oreochromis niloticus* var. stirling tilapia culture. *Fisheries and Aquaculture Journal*, 8(2), pp.11-11.
- Ibáñez, A.L., T. Torres-Vázquez, S.H. Álvarez-Hernández. 2019. The effect of high temperature on the growth performance of hybrid tilapia *Oreochromis niloticus* x

Oreochromis aureus juveniles reared in a recycling system. Annual Research & Review in Biology, pp.1-8.

- Igbinosa, I.H., E.O. Igbinosa, A.I. Okoh. 2015. Detection of antibiotic resistance, virulence gene determinants and biofilm formation in aeromonas species isolated from cattle. Environmental Science and Pollution Research, 22(22), pp.17596-17605.
- Irianto, A. and B. Austin. 2002. Probiotics in aquaculture. Journal of Fish Diseases, 25(11), pp.633-642.
- Isnansetyo, A., I. Istiqomah, dan T. Kuswoyo. 2018. Gamaalgin-f, imunostimulan berbasis alginat untuk ikan nila dan lele: formulasi imunostimulan dan uji tantang pada lele. Departemen Perikanan Fakultas Pertanian UGM, Yogyakarta.
- Isnansetyo, A., I. Istiqomah, dan T. Kuswoyo. 2019. Gamaalgin-f, imunostimulan berbasis alginat untuk ikan nila dan lele: formulasi imunostimulan untuk meningkatkan pertumbuhan dan produksi lele. Departemen Perikanan Fakultas Pertanian UGM, Yogyakarta.
- Istiqomah, I., A. Isnansetyo, I.N. Atitus, A.F. Rohman. 2019. Isolation of cellulolytic bacterium *Staphylococcus* sp. jc20 from the intestine of octopus (*Octopus* sp.) for fish probiotic candidate. Jurnal Perikanan Universitas Gadjah Mada, 21(2), pp.93-98.
- Keininen, M., C. Tigerstedt, P. Kalax, P.J. Vuorinen. 2003. Fertilization and embryonic development of whitefish (*Coregonus lavaretus*) in acidic low-ionic strength water with aluminum. Ecotoxicology and Environmental Safety, 55: 314-329.
- Khanjani, M.H., M. Alizadeh, M. Mohammadi, A.H. Sarsangi. 2021. Biofloc system applied to Nile tilapia (*Oreochromis niloticus*) farming using different carbon sources: growth performance, carcass analysis, digestive and hepatic enzyme activity. Iranian Journal of Fisheries Sciences, 20(2), Pp.490-513.
- Khanjani, M. H., and M. Sharifinia. 2021. Production of Nile tilapia *Oreochromis niloticus* reared in a limited water exchange system: the effect of different light levels. Aquaculture, 542, 736912.
- Khiari, Z., S. Kaluthota, N. Savidov. 2019. Aerobic bioconversion of aquaculture solid waste into liquid fertilizer: effects of bioprocess parameters on kinetics of nitrogen mineralization. Aquaculture 500, 492–499
- Kır, M. and O. Öz. 2015. Effects of salinity on acute toxicity of ammonia and oxygen consumption rates in common prawn, *Palaemon serratus* (Pennat, 1777). Journal of the World Aquaculture Society, 46(1), pp.76-82.
- Liu, W., H. Ke, J. Xie, H. Tan, G. Luo, B. Xu, G. Abakari. 2020. Characterizing the water quality and microbial communities in different zones of a recirculating aquaculture system using biofloc biofilters. Aquaculture, 529, p.735624.
- Martínez, C. P., A.L. Ibáñez, O.A.M. Hermosillo, H. C. R. Saad. 2012. Use of probiotics in aquaculture. ISRN microbiology, 2012, 916845.

- Martins, G.B., C.E. da Rosa, F.D.M. Tarouco, R. B. Robaldo. 2019. growth, water quality and oxidative stress of nile tilapia *Oreochromis niloticus* (L.) in biofloc technology system at different ph. *Aquaculture Research*, 50(4), pp.1030-1039.
- Mehana, E.E., A.H. Rahmani, S.M. Aly. 2015. Immunostimulants and fish culture: an overview. *Annual Research & Review in Biology*, pp.477-489.
- Mohammadi, G., T.J. Adorian, G. Rafiee. 2020. Beneficial effects of *Bacillus subtilis* on water quality, growth, immune responses, endotoxemia and protection against lipopolysaccharide-induced damages in *Oreochromis niloticus* under biofloc technology system. *Aquaculture Nutrition*, 26(5), pp.1476-1492.
- Mohapatra, S., T. Chakraborty, V. Kumar, G. DeBoeck, K.N. Mohanta. 2013. Aquaculture and stress management: a review of probiotic intervention. *Journal of animal physiology and animal nutrition*, 97(3), 405-430.
- Monsees, H., L. Klatt, W. Kloas, S. Wuertz. 2017. Chronic exposure to nitrate significantly reduces growth and affects the health status of juvenile nile tilapia (*Oreochromis niloticus* L.) in recirculating aquaculture systems. *Aquaculture Research*, 48, 3482–3492.
- Mugwanya, M., M.A. Dawood, F. Kimera, H. Sewilam. 2021. Biofloc systems for sustainable production of economically important aquatic species: a review. *Sustainability*, 13(13), p.7255.
- Mulia, D.S., H. Maryanto, C. Purbomartono. 2011. Isolasi, karakterisasi, dan identifikasi bakteri pada lele dumbo yang terserang penyakit di kabupaten banyumas. *Sainteks*, 8(1).
- Murwantoko, M., R. Rozi, I. Istiqomah, K.H. Nitimulyo. 2013. Isolasi, karakterisasi, dan patogenitas bakteri penyebab penyakit pada gurami (*Osphronemus goramy*) di kabupaten bantul. *Jurnal Perikanan Universitas Gadjah Mada*, 15(2), pp.83-90.
- Myers, D., 2007. Probiotics. *Journal of Exotic Pet Medicine*, 16(3), pp.195-197.
- Mzula, A., P.N. Wambura, R.H. Mdegela, G.M. Shirima. 2019. Current state of modern biotechnological-based *Aeromonas hydrophila* vaccines for aquaculture: a systematic review. *Biomed Research International*, 2019.
- Nair, A. T., and M. M. Ahammed. 2015. Water treatment sludge for phosphate removal from the effluent of uasb reactor treating municipal wastewater. *Process Safety and Environmental Protection*, 94, 105-112.
- Nazar, A.A., R. Jayakumar, G. Tamilmani. 2013. Recirculating aquaculture systems. *Mandapam Regional Centre of CMFRI. India*.
- Nisar, U., D. Peng, Y. Mu, Y. Sun. 2022. A solution for sustainable utilization of aquaculture waste: a comprehensive review of biofloc technology and aquamimicry. *Frontiers in Nutrition*, 8.
- Nyanti, L., C.L. Soo, N.N. Ahmad-Tarmizi, T.Y. Ling, S.F. Sim, J. Grinang, T. Ganyai. 2018. Effects of water temperature, dissolved oxygen, and total suspended solids on juvenile *Barbonymus schwanenfeldii* (Bleeker, 1854) and *Oreochromis*

- niloticus* (Linnaeus, 1758). Aquaculture, Aquarium, Conservation & Legislation, 11(2), pp.394-406.
- Odum, E.P. 1993. dasar-dasar ekologi. terjemahan tjahjono samingan, 1993. Edisi Ketiga. Universitas Gadjah Mada. Yogyakarta.
- Ogello, E.O., N.O. Outa, K.O. Obiero, D.N. Kyule, J.M. Munguti. 2021. The prospects of biofloc technology (bft) for sustainable aquaculture development. Scientific African, 14, P.E01053.
- Ohrel, R. L., and K. M. Register. 2006. Volunteer estuary monitoring: a methods manual. (2nd ed.). Washington DC, USA: The Ocean Conservancy and U.S. Environmental Protection Agency.
- Pacheco-Vega, J.M., M.A. Cadena-Roa, J.A. Leyva-Flores, O.I. Zavala-Leal, E. Pérez-Bravo, J.M. Ruiz-Velazco. 2018. Effect of isolated bacteria and microalgae on the biofloc characteristics in the pacific white shrimp culture. Aquaculture Reports, 11, pp.24-30.
- Patty, S.I., R. Huwae, M. Djabar, N. Akbar. 2021. Seasonal variations of dissolved oxygen in lembah strait waters, north sulawesi. Jurnal Ilmu Kelautan Kepulauan, 4(1).
- Rejeki, S., Triyanto, Murwantoko. 2016. Isolation and identification of *Aeromonas* spp. from diseased african catfish (*Clarias* sp.) in ngawi regency. Jurnal Perikanan Universitas Gadjah Mada 18 (2): 55-60
- Risuana, I.G.S., I.G. Hendrawan, Y. Suteja. 2017. Distribusi spasial total padatan tersuspensi puncak musim hujan di permukaan perairan teluk benoa, bali. Journal of Marine and Aquatic Sciences, 3(2), pp.223-232.
- Rizqi, F. 2016. Skripsi: pemanfaatan probiotik cair pada akuakultur sebagai usaha peningkatan produktivitas dan efisiensi pakan *Clarias gariepinus* (ikan lele dumbo). Fakultas Sains dan Teknologi. Universitas Airlangga.
- Robles-Porchas, G.R., T. Gollas-Galván, M. Martínez-Porchas, L.R. Martínez-Cordova, A. Miranda-Baeza, F. Vargas-Albores. 2020. The nitrification process for nitrogen removal in biofloc system aquaculture. Reviews in Aquaculture, 12(4), pp.2228-2249.
- Saanin, H. 1984. Taksonomi dan kunci identifikasi ikan, Jakarta : Bina Cipta.
- Sahoo, P.K., 2007. role of immunostimulants in disease resistance of fish. CAB reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources, 2(045).
- Sari, L.A., W.H. Satyantini, A. Manan, K.T. Pursetyo, N.N. Dewi. 2018. The identification of plankton tropical status in the wonokromo, dadapan and juanda extreme water estuary. In IOP Conference Series: Earth and Environmental Science (Vol. 137, No. 1, p. 012029). IOP Publishing.
- Schrezenmeir, J., and M. de Vrese. 2001. Probiotics, prebiotics, and synbiotics—approaching a definition. The American Journal of Clinical Nutrition, 73(2), pp.361s-364s.

- Schumann, M., J. Unger. A. Brinker. 2017. Floating faeces: effects on solid removal and particle size distribution in ras. *Aquacultural Engineering*, 78, pp.75-84.
- Shelton, W.L., and T.J. Popma. 2006. Biology. In: lim, c., webster, c.d. (eds.), *tilapia: biology, culture, and nutrition*. Haworth Press, Inc., Binghamton, New York, pp. 1e49.
- Shirota, A. 1966. *The plankton of south vietnam: freshwater and marine plankton*. Over Tech Coop Agent. Japan
- Sri-uam, P., S. Donnuea, S. Powtongsook, P. Pavasant. 2016. Integrated multi-trophic recirculating aquaculture system for nile tilapia (*Oreochlomis niloticus*). *Sustainability*, 8(7), p.592.
- Tamba, J.M., H. Syawal, I. Lukistyowati. 2021. Identification of pathogenic bacteria from striped catfish (*Pangasionodon hypophthalmus*) kept in aquaculture ponds. *Jurnal Perikanan dan Kelautan*, 26(1), pp.40-46.
- Temesgen, M., 2017. Status and trends of fish and fisheries in lake langano, ethiopia (Doctoral dissertation, PhD dissertation, Department of Zoological Sciences, Addis Ababa University, Ethiopia: P 231).
- Tesfahun, A., and M. Temesgen. 2018. Food and feeding habits of nile tilapia *Oreochromis niloticus* (L.) in ethiopian water bodies: a review. *International Journal of Fisheries and Aquatic Studies*, 6(1), pp.43-47.
- Tomasso, J.R., 2012. Environmental Nitrite and Aquaculture: A Perspective. *Aquaculture International*, 20(6), pp.1107-1116.
- Tortora, G. J., Funke, R. Berdell, Case, L. Christine. 2013. *Microbiology : an introduction*. Pearson. Boston.
- Triyatmo, B., Rustadi, A. Isnansetyo. 2020. Effects of probiotic dosage on water quality, total count of *Aeromonas* spp. and *Pseudomonas* spp. in eel (*Anguilla bicolor*) cultivation. In *E3S Web of Conferences* (Vol. 147, p. 01008). EDP Sciences.
- Van Wyk, P. and Y. Avnimelech. 2007. Management of nitrogen cycling and microbial populations in biofloc-based aquaculture sistems. Presented in World Aquaculture Society Meeting, San Antonio, Texas, USA.
- Vellai, T. and G. Vida. 1999. The origin of eukaryotes: the difference between prokaryotic and eukaryotic cells. *Proceedings of the Royal Society of London. Series B: Biological Sciences*, 266(1428), pp.1571-1577.
- Vine, N.G., W.D. Leukes, H. Kaiser. 2006. Probiotics in marine larviculture. *FEMS Microbiology Reviews*, 30(3), pp.404-427.
- Wahyuningsih, S. and A.M. Gitarama. 2020. Amonia pada sistem budidaya ikan. *Jurnal Ilmiah Indonesia*, 5(2), pp.112-125
- Wang, C.Y., C.Y. Chang, Y.H. Chien, H.T. Lai. 2016. The performance of coupling membrane filtration in recirculating aquaponic system for tilapia culture. *International Biodeterioration and Biodegradation*, 107, pp.21-30.

- Wang, W., J. Sun, C. Liu, Z. Xue. 2017. Application of immunostimulants in aquaculture: current knowledge and future perspectives. *Aquaculture Research*, 48(1), pp.1-23.
- Wanger , G., T.C. Onstott, G. Southam. 2008. Stars of the terrestrial deep subsurface: a novel 'star-shaped' bacterial morphotype from a south african platinum mine. *Geobiology* 6:325–330.
- Wijayanti, K.A.N., Murwantoko, I. Istiqomah. 2021. Struktur komunitas plankton pada air kolam ikan lele yang berbeda warna. *Jurnal Perikanan Universitas Gadjah Mada*, 23(1), pp.45-54.
- Wilkie, M.P. and C.M. Wood. 1996. The adaptations of fish to extremely alkaline environments. *Comparative Biochemistry and Physiology Part B: Biochemistry and Molecular Biology*, 113(4), pp.665-673.
- Wulandari, R., S. Subandiyono, P. Pinandoyo. 2019. Pengaruh substitusi tepung ikan dan teri dalam pakan terhadap efisiensi pemanfaatan pakan dan pertumbuhan benih ikan nila (*Oreochromis niloticus*). *Indonesian Journal of Tropical Aquaculture*, 3(1).
- Xu, W.-J., T.C. Morris, T.M. Samocha. 2016. Effects of c/n ratio on biofloc development, water quality, and performance of *Litopenaeus vannamei* juveniles in a biofloc-based, high-density, zero-exchange, outdoor tank system. *Aquaculture*, 453, 169–175. doi:10.1016/j.aquaculture.2015.11
- Yudiati, E., A. Isnansetyo, Murwantoko, Ayuningtyas, Triyanto, C.R. Handayani. 2016. Innate immune-stimulating and immune genes up-regulating activities of three types of alginate from *Sargassum siliquosum* in pacific white shrimp, *Litopenaeus vannamei*. *Fish Shellfish Immunol.* 2016 Jul;54:46-53.
- Yue, G. H., H.R. Lin, J.L. Li. 2016. Tilapia is the fish for next-generation aquaculture. *International Journal of Marine Science and Ocean Technology (IJMO)*, 3(1), 11–13.
- Yuvarajan, P. 2020. Study on floc characteristics and bacterial count from biofloc-based genetically improved farmed tilapia culture system. *Aquaculture Research*, 52(4), pp.1743-1756.
- Zhou, S., Y. Xia, C. Zhu, W. Chu. 2018. Isolation of marine *Bacillus* sp. with antagonistic and organic-substances-degrading activities and its potential application as a fish probiotic. *Marine Drugs*, 16(6), p.196.
- Zhou, X. 2005. Use of synthetic lysine in fish feeds: a review on research and application. *Feed Ind* 27:1–7