

DAFTAR PUSTAKA

- Abas, S. A., Abod, N. M., & Al-Hamed, Z. A. (2018). Heterosis, Combining Ability and Some Genetic Parameters in Wheat Using Half Diellil Mating Design. *Journal of Plant Production*, 9(1), 1–5. <https://doi.org/10.21608/jpp.2018.35230>
- Adams, G. (2020). A Beginner's Guide to RT-PCR, qPCR and RT-qPCR. *Biochem (Lond)*, 42(3), 48–53. <https://doi.org/doi:https://doi.org/10.1042/BIO20200034>
- Adavoudi, R., & Pilot, M. (2022). Consequences of Hybridization in Mammals: A Systematic Review. *Genes*, 13(1). <https://doi.org/10.3390/genes13010050>
- Afriani, A., & Patmawati, P. (2021). Pola Konsumsi dan Sanitasi Lingkungan Balita Stunting di Polewali Mandar. *Bina Generasi : Jurnal Kesehatan*, 12(2), 1–9. <https://doi.org/10.35907/bgjk.v12i2.168>
- Afrinis, N. (2021). Perbedaan Konsumsi Energi dan Protein Balita Stunting di Pedesaan dan Perkotaan. *Prepotif: Jurnal Kesehatan Masyarakat*, 5(2), 1297–1302. <https://doi.org/10.31004/prepotif.v5i2.2596>
- Agrawal, P., Kushwaha, V., Shukla, V., & Kumar, A. (2023). Animal Research Ethics : An Overview of Biomedical and Pharmaceutical Sciences. *European Journal of Biomedical and Pharmaceutical Sciences*, 10(7), 78–87.
- Ahillah, N., Rusdanillah, A., Afiana, W., Sulistiani, R., Negeri Surabaya, U., Raya Kampus Unesa, J., Wetan, L., Sby, K., & Timur, J. (2017). Pengaruh Konsentrasi Garam pada Fermentasi Ikan Wader (*Rasbora lateristriata*). *Bioedukasi*, 10(2), 12–17.
- Alavi, S. M. H., Barzegar-fallah, S., Rahdar, P., Ahmadi, M. M., Yavari, M., Hatef, A., Golshan, M., & Linhart, O. (2021). A Review on Environmental Contaminants-related Fertility Threat in Male Fishes: Effects and Possible Mechanisms of Action Learned from Wildlife and Laboratory Studies. *Animals*, 11(10). <https://doi.org/10.3390/ani11102817>
- Albar, A., Soelystiowati, D. T., Alimuddin, & Arfah, H. (2025). Genetic Status and Hybridization of Red Tilapia Strains Sukabumi, Thailand, and Taiwan. *Egyptian Journal of Aquatic Biology and Fisheries*, 29(3), 519–535. <https://doi.org/10.21608/ejabf.2025.427688>
- Ambeno, F. N., Oben, B. O., Arrey, M. A., Ebobenow, J., Nkongho, G. O., Nfuah, M. S., & Oben, P. M. (2021). Intraspecific Hybridization, Growth Performance and Survival of Purebreds and Reciprocal Hybrids of Two *Clarias Gariepinus* (Burchell, 1822) Strains in the Mount Cameroon Region. *International Journal of Research Studies in Biosciences*, 9(3), 2349–0365. <https://doi.org/10.20431/2349-0365.0903001>
- Amelia, T., Lestari, W., & Nuryanto, A. (2014). Distribusi Longitudinal dan Struktur Populasi *Rasbora* Spp. di Sungai Banjara Kabupaten Banyumas. *Scripta Biologica*, 1(2), 167. <https://doi.org/10.20884/1.sb.2014.1.2.450>
- Amoussou, T. O., Abdou Karim, I. Y., Dayo, G. K., Kareem, N., Toko, I. I., Chikou, A., & Toguyéni, A. (2019). An Insight Into Advances in Fisheries Biology, Genetics and Genomics of African Tilapia Species of Interest in Aquaculture. *Aquaculture Reports*, 14(February), 100188. <https://doi.org/10.1016/j.aqrep.2019.100188>

- Anjar, R., Yustiati, A., & Iskandar. (2023). Survival, Growth, Meristic and Morphometric Characteristics of Hybrids Between Black and White Nile Tilapia Strains. *Asian Journal of Fisheries and Aquatic Research*, 24(5), 31–39. <https://doi.org/10.9734/ajfar/2023/v24i5645>
- Anshori, K., Hananya, A., Pratama, S. F., Raharjeng, R. P. A., Suci, D. A., & Retnoaji, B. (2024). Artificial Breeding Technology for Mass Field Cultivation of Indonesian Wader Fish (*Rasbora lateristriata* Bleeker, 1854). *AIP Conf. Proc.*, 3132(1). <https://doi.org/https://doi.org/10.1063/5.0212909>
- Antony, B., B P, M. P., Lavudya, S., & P., D. (2023). Heterosis and Its Recent Understanding. In *Plant Breeding and Genetics: Present Concept and Approaches* (pp. 87–97).
- Arafat, M. Y. (2024). Research Ethics: Meaning and Principles. *SSRN Electronic Journal*, 8(1), 139–144. <https://doi.org/10.2139/ssrn.4887943>
- Arifn, O. Z., Himawan, M., Mumpuni, F. S., Cahyanti, W., & Imron, I. (2025). Combining Ability and Heterosis for Growth and Survival in Interspecific Hybrids of *Tor soro*, *Tor douaronensis* and *Tor tambroides*. *Fisheries and Aquatic Sciences*, 28(11), 729–740. <https://doi.org/10.47853/FAS.2025.e62>
- Ariyanto, D., Carman, O., Sulistyowati, D. T., Zairin, M., Syukur, M., Suharyanto, Himawan, Y., & Palimirmo, F. S. (2022). Analysis of Combining Ability and Heterotic Estimation on A Complete Diallel Cross Involving Five Strains of Common Carp (*Cyprinus carpio*) from Different Geographical Regions in West Java, Indonesia. *Aquaculture Research*, 53(18), 6900–6909. <https://doi.org/10.1111/are.16155>
- Ariyanto, D., Putra, S., Maryadi, L., & Nugroho, E. (2025). Revealing Fluctuations in Heterosis with Age in Hybrid Catfish (*Clarias gariepinus*) and Its Utilization at Locations with Different Altitude. *Turkish Journal of Fisheries and Aquatic Sciences*, 25(12). <https://doi.org/10.4194/TRJFAS 27060>
- Ariyanto, D., Suharyanto, S., Palimirmo, F. S., & Himawan, Y. (2022). Evaluasi Tiga Hibrida Ikan Mas Sebagai Kandidat Varietas Budidaya Unggul. *Jurnal Riset Akuakultur*, 17(1), 1–7. <https://doi.org/10.15578/jra.17.1.2022.1-7>
- Arrey, M. A., Biosci, I. J., Western, S., Oben, B. O., Narika, A. F., Nkongho, G. O., Mofor, F. R., Arrey, T. T., Chinda, M. G., & Oben, P. M. (2023). Intraspecific Hybridization of Native and Exotic Strains of *Clarias gariepinus* and Growth Performance of Hybrid Fry in South Western, Cameroon. *International Journal of Biosciences (IJB)*, 6655, 171–179. <https://doi.org/10.12692/ijb/22.6.171-179>
- Aryani, N., Suharman, I., & Syandri, H. (2018). Reproductive Performance of Asian Catfish (*Hemibagrus wyckii* Bleeker, 1858), A Candidate Species for Aquaculture. *F1000Research*, 7(0), 1–14. <https://doi.org/10.12688/f1000research.14746.2>
- Ashari, I. H. T. A. and W. R. M. (2019). Survival Rate and Growth of Some Economical Freshwater Fish Species in Tailing Ponds of Bauxite Post-mining in Senggarang, Tanjungpinang City. *Omni-Akuatika*, 15(2), 84–91. <https://doi.org/http://dx.doi.org/10.20884/1.oa.2019.15.2.728>
- Ataguba, G. A., & Angela, A. (2024). Hybridization and Growth Performance of Progeny from Crosses between *Clarias gariepinus* and *Heterobranchus* sp. *Aquaculture Studies*, 24(1). <https://doi.org/10.4194/AQUAST1154>

- Audet, C., Garant, D., Crespel, A., & Vagner, M. (2025). How Genomic and Environmental Relationships Shape Phenotypic Plasticity in Brook Charr *Salvelinus fontinalis*: An Historical Review. *Frontiers in Fish Science*, 3. <https://doi.org/10.3389/frish.2025.1525181>
- Awhefeada, O. K., Bekederemo, B. O., Akpomughe, E., & Okpu, P. N. (2025). Morphometric Characterization, Heterosis Expression, and Growth Performance of Genetically Improved Farmed Tilapia and Red Tilapia Hybrids for Sustainable Aquaculture Development. *Journal of Science Research and Reviews*, 2(23), 178–188. <https://doi.org/10.70882/josrar.2025.v2i3.105>
- Azrita, A., Syandri, H., Sari, R. T., & Kusuma, H. (2025). Reproductive Performance of *Tor tambroides* (Bleeker, 1854) Fed Diets Containing Fish Oil from Different Sources. *AAFL Bioflux*, 18(5), 2088–2099.
- Azzahra, F., Soegianto, V., Yusma, M., Puspitasari, K., Anggita, B., Ambarwati, E., Arisman, A., Rahma, K., Akbar, S., & Anggraini, D. (2024). Sosialisasi Inovasi Pembuatan Kerupuk Ikan Wader Sebagai Upaya Pengembangan Produk Komoditas Perikanan. *Jurnal Akademik Pengabdian Masyarakat*, 2(5), 14–21.
- BPS (Badan Pusat Statistik-Statistics Indonesia). (2024). *Average Daily Consumption of Calorie and Protein per Capita 1990 - 2024*. Badan Pusat Statistik(BPS - Statistics Indonesia). <https://www.bps.go.id/en/statistics-table/1/MTk4NiMx/average-daily-consumption-of-calorie-and-protein-per-capita-1990---2023.html>
- Bardon-Albaret, A., & Saillant, E. (2017). Egg Quality Traits and Predictors of Embryo and Fry Viability in red Snapper *Lutjanus campechanus*. *Aquaculture Reports*, 7, 48–56. <https://doi.org/10.1016/j.aqrep.2017.05.004>
- Best, D. H., & Roberts, K. A. (2014). In Vitro Amplification Techniques. *Pathobiology of Human Disease: A Dynamic Encyclopedia of Disease Mechanisms*. Elsevier Inc. <https://doi.org/10.1016/B978-0-12-386456-7.07702-9>
- Bhandari, M. P., Regmi, A., & DC, S. (2025). Optimizing Rainbow Trout (*Oncorhynchus mykiss*) Breeding: An assessment of Age and Performance Relationship in Nepalese Hatcheries. *International Journal of Fisheries and Aquatic Studies*, 13(1), 151–155. <https://doi.org/10.22271/fish.2025.v13.i1b.3031>
- Bhat, I. A., Rather, M. A., Ahmad, I., Ahmad, I., Mir, I. N., & Hussna. (2025). Impact of Shifting Abiotic Factors in Aquaculture on Fish Breeding and Reproduction: A Review. *Blue Biotechnology*, 2(1). <https://doi.org/10.1186/s44315-025-00027-9>
- Bianchi, E. (2021). Same gene, opposite sexes: Sex-specific Divergent Expression of A Gene Required for vertebrate Fertilization. *Proceedings of the National Academy of Sciences of the United States of America*, 118(42), 6–8. <https://doi.org/10.1073/pnas.2116001118>
- Bichi, A., Isyaku, S., Danba, E., Kurawa, I., & Ayawo, A. (2015). Effect of Brood Stock Size on Egg Fertilization, Hatchability and Fry Survival Rate of African Catfish (*Clarias gariepinus*). *Bayero Journal of Pure and Applied Sciences*, 7(2), 150. <https://doi.org/10.4314/bajopas.v7i2.26>
- Birchler, J. A., Yao, H., Chudalayandi, S., Vaiman, D., & Veitia, R. A. (2010).

- Heterosis. *Plant Cell*, 22(7), 2105–2112. <https://doi.org/10.1105/tpc.110.076133>
- Blaha, A., & Pauli, A. (2024). Bouncer's Receptor on Sperm: Investigating Sperm-egg Compatibility in Fish. *BioRxiv*. <https://doi.org/10.1101/2024.12.13.628393>
- Brice, C., Zhang, Z., Bendixsen, D., & Stelkens, R. (2021). Hybridization Outcomes Have Strong Genomic and Environmental Contingencies. *American Naturalist*, 198(3), 53–67. <https://doi.org/10.1086/715356>
- Browne, D. J., Kelly, A. M., Brady, J., Proietti, C., Sarathkumara, Y. D., Pattinson, D. J., & Doolan, D. L. (2023). Evaluating The Stability of Host-reference Gene Expression and simultaneously quantifying parasite burden and Host Immune Responses in Murine Malaria. *Scientific Reports*, 13(1), 1–11. <https://doi.org/10.1038/s41598-023-48066-9>
- Buchanan, D. S., & Northcutt, S. L. (1914). The Genetic Principles of Cross breeding. *Beef Cattle Handbook-The Genetic Principles of Cross breeding, 1400*, 1–5.
- Cao, L., Chen, P., Hou, X., Ma, J., Yang, N., Xu, Y., Zhang, Y., Zhao, A., Zhang, J., Li, X., & Huang, H. (2023). Genetic Characteristics and Growth Patterns of The Hybrid Grouper Derived from The Hybridization of *Epinephelus fuscoguttatus* (female) × *Epinephelus polyphekadion* (male). *Journal of Fish Biology*, 102(2), 328–339. <https://doi.org/10.1111/jfb.15263>
- Chauhan, K., Kim, D. M., Cho, E., & Kim, D. E. (2023). Facilitation of Dye-Based Quantitative Real-Time Polymerase Chain Reaction with Poly (ethylene glycol)-Engrafted Graphene Oxide. *Nanomaterials*, 13(8). <https://doi.org/10.3390/nano13081348>
- Chen, F., Wang, Y., He, J., Smith, C., Xue, G., Zhao, Y., Peng, Y., Zhang, J., Liu, J., Chen, J., & Xie, P. (2023). Alternative Signal Pathways Underly Fertilization and Egg Activation in A Fish With Contrasting Modes of Spawning. *BMC Genomics*, 24(1), 1–14. <https://doi.org/10.1186/s12864-023-09244-1>
- Chen, Z., Halford, N. G., & Liu, C. (2023). Real-Time Quantitative PCR: Primer Design, Reference Gene Selection, Calculations and Statistics. *Metabolites*, 13(7). <https://doi.org/10.3390/metabo13070806>
- Chu, T. T., Sørensen, A. C., Lund, M. S., Meier, K., Nielsen, T., & Su, G. (2020). Phenotypically Selective Genotyping Realizes More Genetic Gains in a Rainbow Trout Breeding Program in the Presence of Genotype-by-Environment Interactions. *Frontiers in Genetics*, 11(September), 1–12. <https://doi.org/10.3389/fgene.2020.00866>
- Clift, D., & Schuh, M. (2013). Restarting life: Fertilization and The Transition from Meiosis to Mitosis. *Nature Reviews Molecular Cell Biology*, 14(9), 549–562. <https://doi.org/10.1038/nrm3643>
- Cordeli, A. N., Opera, L., Cretu, M., & Mocanu, M. (2011). The Influence of Stocking Density on The Growth of Common Carp, *Cyprinus carpio*, in A Recirculating Aquaculture System. *AAFL Bioflux*, 4(2), 146–153.
- Cosson, J. (2019). Fish Sperm Physiology: Structure, Factors Regulating Motility, and Motility Evaluation. *Recent Developments in Fish Biology Researches* (pp. 1–26). Biological Research in Aquatic Science. <https://doi.org/10.5772/INTECHOPEN.85139>

- Côte, J., Roussel, J. M., Le Cam, S., & Evanno, G. (2014). Outbreeding Depression in Atlantic Salmon Revealed by Hypoxic Stress During Embryonic Development. *Evolutionary Biology*, *41*(4), 561–571. <https://doi.org/10.1007/s11692-014-9289-0>
- Crane, D. P., Ogle, D. H., & Shoup, D. E. (2020). Use and Misuse of A Common Growth Metric: Guidance for Appropriately Calculating and Reporting Specific Growth Rate. *Reviews in Aquaculture*, *12*(3), 1542–1547. <https://doi.org/10.1111/raq.12396>
- Cui, X., Zhang, Q., Zhang, Q., Zhang, Y., Chen, H., Liu, G., & Zhu, L. (2022). Research Progress of the Gut Microbiome in Hybrid Fish. *Microorganisms*, *10*(5), 1–21. <https://doi.org/10.3390/microorganisms10050891>
- Dagilis, A. J., & Matute, D. R. (2023). The Fitness of An Introgressing Haplotype Changes Over The Course of Divergence and Depends on Its Size and Genomic Location. *PLoS Biology*, *21*(7 July), 1–24. <https://doi.org/10.1371/journal.pbio.3002185>
- Das, M., & Mishra, N. K. (2020). Encyclopedia of Animal Cognition and Behavior. *Encyclopedia of Animal Cognition and Behavior*, April. <https://doi.org/10.1007/978-3-319-47829-6>
- Debes, P. V., Lobligeois, S. B. C., & Svavarsson, E. (2025). Genetic and Environmental (Co) variation of Egg Size, Fecundity, and Growth Traits in Arctic Charr. *Evolutionary Applications*, *18*(7). <https://doi.org/10.1111/eva.70135>
- Debes, P. V., Fraser, D. J., McBride, M. C., & Hutchings, J. A. (2013). Multigenerational Hybridisation and Its Consequences for Maternal Effects in Atlantic Salmon. *Heredity*, *111*(3), 238–247. <https://doi.org/10.1038/hdy.2013.43>
- Deneke, V. E., & Pauli, A. (2021). The Fertilization Enigma: How Sperm and Egg Fuse. *Annual Review of Cell and Developmental Biology*, *37*, 391–414. <https://doi.org/10.1146/annurev-cellbio-120219-021751>
- Dissinger, A., & Kwasek, K. (2025). Parental Social Environment has Transgenerational Effects on Zebrafish (*Danio rerio*) Growth. *Scientific Reports*, *15*(1), 1–16. <https://doi.org/10.1038/s41598-025-13802-w>
- Djumanto, Setyobudi, E., Sentosa, A. A., Budi, R., & Nirwati, N. (2008). Reproductive Biology of The Yellow Rasbora (*Rasbora lateristriata*) in Habitat of The Ngrancah River, Kulon Progo Regency. *Jurnal Perikanan (Journal of Fisheries Sciences) All Rights Reserved*, *2*, 261–275.
- Domínguez-Petit, R., García-Fernández, C., Leonarduzzi, E., Rodrigues, K., & Macchi, G. J. (2022). Parental Effects and Reproductive Potential of Fish and Marine Invertebrates: Cross-Generational Impact of Environmental Experiences. *Fishes*, *7*(4). <https://doi.org/10.3390/fishes7040188>
- Duong, T. Y., Thi Nguyen, N. T., & Le, N. S. (2022). Strain-specific Effects of Broodstock Size on Fecundity and Offspring Performance in Bighead Catfish (*Clarias macrocephalus* Günther, 1864). *Aquaculture Research*, *53*(11), 3996–4006. <https://doi.org/10.1111/are.15902>
- Ed-Idoko, J. O., Solomon, S. G., & Ikape, S. I. (2019). Intraspecific Hybridization and Reciprocal Cross between Cultured and Wild *Clarias gariepinus*; and Evaluation of Their Progenies. *Nigerian Journal of Fisheries*, *16*(1), 1660–1667. <https://www.researchgate.net/publication/343656657>

- Engle, B. N., Thallman, R. M., Snelling, W. M., Wheeler, T. L., Shackelford, S. D., King, D. A., & Kuehn, L. A. (2025). Breed-specific Heterosis for Growth and Carcass Traits in 18 U.S. cattle breeds. *Journal of Animal Science*, *103*(February). <https://doi.org/10.1093/jas/skaf048>
- Esa, Y. B., Dadile, A. M., Syukri, F., Christianus, A., & Diyaware, M. Y. (2023). Evaluation of Fecundity, Fertilization, Hatching, and Gonadosomatic Index of Exotic *Clarias gariepinus* (Burchell, 1822) and Native *Clarias macromystax* (Gunther, 1864) under Semi-Arid Conditions of Nigeria. *Animals*, *13*(11). <https://doi.org/10.3390/ani13111723>
- Falconer, D. S., & Mackay, T. F. (2012). Introduction to Quantitative Genetics. In *Principles of Plant Genetics and Breeding* (pp. 63–94). <https://doi.org/10.1002/9781118313718.ch4>
- Fazzi-Gomes, P. F., Aguiar, J. da P., Marques, D., Cabral, G. F., Moreira, F. C., Rodrigues, M. D. N., Silva, C. S., Hamoy, I., & Santos, S. (2021). Novel Microsatellite Markers Used for Determining Genetic Diversity and Tracing of Wild and Farmed Populations of The Amazonian Giant Fish *Arapaima gigas*. *Genes*, *12*(9). <https://doi.org/10.3390/genes12091324>
- Fechner, S., Alvarez, L., Bönigk, W., Müller, A., Berger, T. K., Pascal, R., Trötschel, C., Poetsch, A., Stölting, G., Siegfried, K. R., Kremmer, E., Seifert, R., & Kaupp, U. B. (2015). A K⁺-selective CNG Channel Orchestrates Ca²⁺ Signalling in Zebrafish Sperm. *ELife*, *4*(2015), 1–25. <https://doi.org/10.7554/eLife.07624>
- Fernandez-Arcaya, U., Drazen, J. C., Murua, H., Ramirez-Llodra, E., Bahamon, N., Recasens, L., Rotllant, G., & Company, J. B. (2016). Bathymetric Gradients of Fecundity and Egg Size in Fishes: A Mediterranean Case Study. *Deep-Sea Research Part I: Oceanographic Research Papers*, *116*, 106–117. <https://doi.org/10.1016/j.dsr.2016.08.005>
- Fernández, J., Villanueva, B., & Toro, M. A. (2021). Optimum Mating Designs for Exploiting Dominance in Genomic Selection Schemes for Aquaculture Species. *Genetics Selection Evolution*, *53*(1). <https://doi.org/10.1186/s12711-021-00610-9>
- FishBase. (2025a). *Rasbora lateristriata* (Bleeker, 1854) Yellow rasbora. FishBase. <https://www.fishbase.se/summary/Rasbora-lateristriata>
- FishBase. (2025b). *Reproduction*. https://fishbase.se/FishOnLine/English/FOL_Reproduction.html
- Fitzpatrick, B. M., Ryan, M. E., Johnson, J. R., Corush, J., & Carter, E. T. (2015). Hybridization and The Species Problem in Conservation. *Current Zoology*, *61*(1), 206–216. <https://doi.org/10.1093/czoolo/61.1.206>
- Flinn, S. A., & Midway, S. R. (2021). Trends in Growth Modeling in Fisheries Science. *Fishes*, *6*(1), 1–18. <https://doi.org/10.3390/fishes6010001>
- Fujihara, Y., Herberg, S., Blaha, A., Panser, K., Kobayashi, K., Larasati, T., Novatchkova, M., Theussl, H. C., Olszanska, O., Ikawa, M., & Pauli, A. (2021). The Conserved Fertility Factor SPACA4/Bouncer has Divergent Modes of Action in Vertebrate Fertilization. *Proceedings of the National Academy of Sciences of the United States of America*, *118*(39). <https://doi.org/10.1073/pnas.2108777118>
- Gabryś, J., Kij, B., Kochan, J., & Bugno-Poniewierska, M. (2021). Interspecific Hybrids of Animals in Nature, Breeding and Science - A review. *Annals of*

- Animal Science*, 21(2), 403–415. <https://doi.org/10.2478/aoas-2020-0082>
- Gai, J., & He, J. (2013). Reciprocal Cross. *Brenner's Encyclopedia of Genetics: Second Edition*, 3, 66–67. <https://doi.org/10.1016/B978-0-12-374984-0.01268-7>
- Ganias, K., Kjesbu, O. S., Lowerre-Barbieri, S., Fuentes-Pardo, A. P., Andersson, L., & Brosset, P. (2025). Reproduction of Marine Fishes (Chapter 7). *Ecology of Marine Fish* (pp. 143–159).
- Gert, K. R. B., Panser, K., Surm, J., Steinmetz, B. S., Schleiffer, A., Moran, Y., Kondrashov, F., & Pauli, A. (2022). Distinct Features in Fish Bouncer Proteins Determine Sperm-egg Compatibility. *BioRxiv*, 2022.09.01.506233.
- Gert, K. R., Herberg, S., Steinmetz, B., Schleiffer, A., & Pauli, A. (2018). *Investigating Bouncer 's role in species-specific fertilization io*. 1. Institute of Molecular Pathology (IMP).
- Gert, K. R., Panser, K., Surm, J., Steinmetz, B. S., Schleiffer, A., Jovine, L., Moran, Y., Kondrashov, F., & Pauli, A. (2023). Divergent Molecular Signatures in Fish Bouncer Proteins Define Cross-fertilization Boundaries. *Nature Communications*, 14(1), 1–14. <https://doi.org/10.1038/s41467-023-39317-4>
- Getahun, D., Alemneh, T., Akebereg, D., Getabalew, M., & Zewdie, D. (2019). Importance of hybrid vigor or heterosis for animal breeding. *Biochem Biotechnol Res*, 7(1), 1–4.
- Ghannam, M. G., & Varacallo, M. (2023). *Biochemistry, Polymerase Chain Reaction*. StatPearls. <https://www.ncbi.nlm.nih.gov/books/NBK535453/>
- Ghareeb, Z. E., & Fares, W. M. (2016). Modified Model for Assessment of Maternal Effects in First Generation of Faba Bean. *Annals of Agricultural Sciences*, 61(1), 77–85. <https://doi.org/10.1016/j.aoas.2016.01.004>
- Gjedrem, T., & Baranski, M. (2009). *Selective Breeding in Aquaculture: An Introduction* (J. L. Nielsen (ed.)). Springer Dordrecht Heidelberg London New York. <https://doi.org/10.1007/978-90-481-2773-3>
- Goni, M. I., Auta, J., Abdullahi, S. A., & Ibrahim, B. (2020). Production of All-Male Tilapia Through Hybridization between *Oreochromis niloticus* and *Tilapia zillii*. *Ijfas*, 8(2), 103–107. <http://www.fisheriesjournal.com>
- Gouveia, G. R., Ferreira, S. C., Ferreira, J. E., Siqueira, S. A. C., & Pereira, J. (2014). Comparison of Two Methods of RNA Extraction From Formalin-fixed Paraffin-embedded Tissue Specimens. *BioMed Research International*, 2014. <https://doi.org/10.1155/2014/151724>
- Gunay, M., & Balasubramanian, R. (2016). Robust CT-prediction Algorithm for RT-PCR. *Filomat*, 30(4), 1103–1110. <https://doi.org/10.2298/FIL1604103G>
- Guo, J., Zhao, H., Zhang, J., Lv, X., Zhang, S., Su, R., Zheng, W., Dai, J., Meng, F., Gong, F., Lu, G., Xue, Y., & Lin, G. (2023). Selective Translation of Maternal mRNA by *eIF4E1B* Controls Oocyte to Embryo Transition. *Advanced Science*, 10(11), 1–17. <https://doi.org/10.1002/advs.202205500>
- Habib, A., Jiaur, R., Milon, S., Najiah, M., Belal, H. M., Shahreza, & Al Abdullah, M. (2020). Breeding Performance of Riverine Rohu (*Labeo rohita*) and Growth Performance of F1 Progenies Reared in Hapas. *Journal of Sustainability Science and Management*, 15(2), 24–32.
- Hadj-Hammou, J., Cinner, J. E., Barneche, D. R., Caldwell, I. R., Mouillot, D., Robinson, J. P. W., Schiettekatte, N. M. D., Siqueira, A. C., Taylor, B. M., &

- Graham, N. A. J. (2024). Global Patterns and Drivers of Fish Reproductive Potential on Coral Reefs. *Nature Communications*, *15*(1), 1–11.
- Harshitha, R., & Arunraj, D. R. (2021). Real-time Quantitative PCR: A Tool for Absolute and Relative Quantification. *Biochemistry and Molecular Biology Education*, *49*(5), 800–812. <https://doi.org/10.1002/bmb.21552>
- Hastutia, S., Nugroho, R. A., yuniartia, T., Nurdiana, F., & Subandiyono, S. (2024). Improving the Hatching Rate of Nilem Fish (*Osteochilus hasselti*) Eggs Through the Addition of Thyroxine to the Hatching Medium. *International Journal of Research Publication and Reviews*, *5*(7), 3097–3101. <https://doi.org/10.55248/gengpi.5.0724.1905>
- Herawati, T., Yustiati, A., Nurhayati, A., & Mustikawati, R. (2018). Proximate Composition of Several Fish From Jatigede Reservoir in Sumedang District, West Java. *IOP Conference Series: Earth and Environmental Science*, *137*(1). <https://doi.org/10.1088/1755-1315/137/1/012055>
- Herberg, S., Gert, K. R., Schleiffer, A., & Pauli, A. (2019). Europe PMC Funders Group The Ly6 / uPAR Protein Bouncer is Necessary and Sufficient for Species-specific Fertilization. *Science*, *361*(6406), 1029–1033. <https://doi.org/10.1126/science.aat7113>.The
- Himawan, Y., & Ariyanto, D. (2023). Heterosis and Maternal Effect on Parameters Related to Productivity of 25 Cross Populations between Five Strains of Common Carp. *E3S Web of Conferences*, *442*. <https://doi.org/10.1051/e3sconf/202344202040>
- Himawan, Y., Imron, Arifin, O. Z., Subagja, J., Supriyanto, & Haryadi, J. (2025). Hybrid Vigor and Growth Performance of Hybrid Mahseer (*Tor spp.*) in Grow-out. *Indonesian Aquaculture Journal*, *20*(1), 49–58. <https://doi.org/10.15578/iaj.20.1.2025.49-58>
- Hochholdinger, F., & Hoecker, N. (2007). Towards The Molecular Basis of Heterosis. *Trends in Plant Science*, *12*(9), 427–432. <https://doi.org/10.1016/j.tplants.2007.08.005>
- Hu, F., Zhong, H., Yu, P., Fan, J., Wu, C., Wang, S., Gong, D., Sun, Y., Gao, X., Wen, M., Tang, C., Tao, M., & Liu, S. (2023). Comparative Analysis of Growth Performance, Pharyngeal Teeth and Intestinal Traits in F1 Hybrids of Female *Megalobrama amblycephala* × Male *Culter mongolicus*. *Aquaculture*, *562*(July 2022), 738807. <https://doi.org/10.1016/j.aquaculture.2022.738807>
- Husnayaen, et al. (2021). Pola Pemenuhan Kebutuhan Konsumsi Pangan Hewani dari Jenis Ikan di Indonesia. *Jurnal Ilmiah Mahasiswa Agroinfo Galuh*, *8*(3), 923. <https://doi.org/10.25157/jimag.v8i3.6200>
- Islam, M. N., Haque, M. M., Rahman, M. H., & Arifuzzaman, M. (2023). Specific Growth Rate (SGR) in Different Stages of Tilapia (*Oreochromis niloticus*) Production Cycle in Cemented Tank Based Semi-Intensive Aquaculture System. *European Journal of Theoretical and Applied Sciences*, *1*(6), 601–610. [https://doi.org/10.59324/ejtas.2023.1\(6\).61](https://doi.org/10.59324/ejtas.2023.1(6).61)
- Islam, S. S., Wringe, B. F., Conway, C. M., Bradbury, I. R., & Fleming, I. A. (2022). Fitness Consequences of Hybridization between Wild Newfoundland and farmed European and North American Atlantic Salmon. *Aquaculture Environment Interactions*, *14*, 243–262. <https://doi.org/10.3354/AEI00441>

- Isrorozi. (2022). *Karakter Morfologis, Morfometri, dan Perkembangan Tulang Ikan Wader Pari (*Rasbora lateristriata* (Bleeker, 1854)) Hasil Persilangan Indukan Yogyakarta, Malang, dan Purworejo*. Fakultas Biologi. Universitas Gadjah Mada.
- Joshi, R., Meuwissen, T. H. E., Woolliams, J. A., & Gjøen, H. M. (2020). Genomic Dissection of Maternal, Additive and Non-additive Genetic Effects for Growth and Carcass Traits in Nile Tilapia. *Genetics Selection Evolution*, 52(1), 1–13. <https://doi.org/10.1186/s12711-019-0522-2>
- Káldy, J., Fazekas, G., Kovács, B., Molnár, M., Lázár, B., Pálinkás-Bodzsár, N., Ljubobratović, U., Fazekas, G., Kovács, G., & Várkonyi, E. (2024). Unidirectional Hybridization between American Paddlefish *Polyodon spathula* (Walbaum, 1792) and Sterlet *Acipenser ruthenus* (Linnaeus, 1758). *PeerJ*, 12, 1–15. <https://doi.org/10.7717/peerj.16717>
- Kato, K. (2023). Breeding Studies on Red Sea Bream *Pagrus major*: Mass Selection to Genome Editing. *Fisheries Science*, 89(2), 103–119. <https://doi.org/10.1007/s12562-022-01668-0>
- Kenter, L. W., Kovach, A. I., Wojtusik, K. J., Reading, B. J., & Berlinsky, D. L. (2020). Paternal Strain Effects on Growth and Body Shape in Hybrid Striped Bass (White Bass ♀ × Striped Bass ♂). *North American Journal of Aquaculture*, 82(4), 405–413. <https://doi.org/10.1002/naaq.10162>
- Khatib, H. I. (2024). Hybridization and Speciation in Indian Major Carps: Implications for Biodiversity and Aquaculture. *EPRA International Journal of Multidisciplinary Research (IJMR)-Peer Reviewed Journal*, 10(6), 209–214. <https://doi.org/10.36713/epra2013>
- Kholodnyy, V., Gadélha, H., Cosson, J., & Boryshpolets, S. (2020). How do Freshwater Fish Sperm Find The Egg? The Physicochemical Factors Guiding The Gamete Encounters of Externally Fertilizing Freshwater Fish. *Reviews in Aquaculture*, 12(2), 1165–1192. <https://doi.org/10.1111/raq.12378>
- Khotyleva, L. V., Kilchevsky, A. V., & Shapturenko, M. N. (2017). Theoretical Aspects of Heterosis. *Russian Journal of Genetics: Applied Research*, 7(4), 428–439. <https://doi.org/10.1134/S2079059717040049>
- Kinsey, W. H., Sharma, D., & Kinsey, S. C. (2007). Fertilization and Egg Activation in Fishes. *The Fish Oocyte: From Basic Studies to Biotechnological Applications*, 397–409. https://doi.org/10.1007/978-1-4020-6235-3_13
- KKP (Kementrian Kelautan dan Perikanan). (2023). *Produksi Perikanan*. <https://portaldata.kkp.go.id/portals/data-statistik/prod-ikan/tbl-dinamis>
- Koenigbauer, S. T., & Höök, T. O. (2023). Increased Offspring Provisioning by Large Female Fish and Consequences for Reproductive Efficiency. *Ecology and Evolution*, 13(10), 1–15. <https://doi.org/10.1002/ece3.10555>
- Kumaladewi, P., Mufasirin, Lastuti, N. D. R., Alamsjah, M. A., Darmanto, W., & Andriyono, S. (2022). Morphometric and Meristic Analysis of *Rasbora* in East Java Province. *Journal of Aquaculture and Fish Health*, 11(3), 298–305. <https://doi.org/10.20473/jafh.v11i3.30956>
- Kurnianto, E. (1982). *A Handbook on Science of Animal Breeding A Handbook on Science of Animal Breeding* (1st ed.). Indomedika Pustaka.
- Kusuma, W. E. (2016). Molecular Phylogeny and Historical Biogeography of The Indonesian Freshwater Fish *Rasbora lateristriata* Species Complex

- (Actinopterygii: Cyprinidae). *Semantic Scholar*. <https://api.semanticscholar.org/CorpusID:90003973>
- Labroo, M. R., Studer, A. J., & Rutkoski, J. E. (2021). Heterosis and Hybrid Crop Breeding: A Multidisciplinary Review. *Frontiers in Genetics*, 12(February), 1–19. <https://doi.org/10.3389/fgene.2021.643761>
- Lailiati, I. R. (2022). *Performa Anakan Ikan Wader Pari (Rasbora lateristriata Bleeker, 1854) Hasil Persilangan Indukan Yogyakarta dan Purworejo*. Fakultas Biologi. Universitas Gadjah Mada.
- Lailiati, I. R., Suci, D. A., Rosa, A. A., Fernanda, V. A., & Retnoaji, B. (2022). Reproductive Aspect and Embryonic Development of Wader Fish (*Rasbora lateristriata* Bleeker, 1854) from Purworejo, Central Java . *Proceedings of the 7th International Conference on Biological Science (ICBS 2021)*, 22(ICBS 2021), 553–557. <https://doi.org/10.2991/absr.k.220406.078>
- Leitwein, M., Cayuela, H., & Bernatchez, L. (2021). Associative Overdominance and Negative Epistasis Shape Fish Populations. *Genes*, 12(524), 1–14. <https://doi.org/https://doi.org/10.3390/genes12040524>
- Lema, S. C., Luckenbach, J. A., Yamamoto, Y., & Housh, M. J. (2024). Fish Reproduction in A Warming World: Vulnerable Points in Hormone Regulation From Sex Determination to Spawning. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 379(1898), 12–15. <https://doi.org/10.1098/rstb.2022.0516>
- Levitan, D. R. (2018). Do Sperm Really Compete and do Eggs Ever Have A Choice? Adult Distribution and Gamete Mixing Influence Sexual Selection, Sexual Conflict, and The Evolution of Gamete Recognition Proteins in The Sea. *American Naturalist*, 191(1), 88–105. <https://doi.org/10.1086/694780>
- Levitan, D. R., & Hao, Y. (2025). Hybridization, Reinforcement Selection, and Sex-dependent Reproductive Character Displacement of Sperm and Egg Recognition Proteins. *Evolution*, 79(8), 1522–1532. <https://doi.org/10.1093/evolut/qpaf092>
- Lin, J., Zhang, H., Wang, J., Fu, B., Zhou, Z., Li, W., Yang, H., & Liu, S. (2025). The formation of A Hybrid Fish Derived from *Labeo rohita* ♀ × *Cyprinus carpio* ♂ and Exhibiting Stronger Low Temperature Tolerance. *Aquaculture*, 605(December 2024). <https://doi.org/10.1016/j.aquaculture.2025.742498>
- Lin, P., Hu, H., Gong, Z., Wang, J., & Gao, X. (2023). Reproductive Characteristics of *Pseudecheneis sulcatus* (Siluriforms: Sisoridae) in the Lower Yarlung Zangbo River, Tibet. *Fishes*, 8(2). <https://doi.org/10.3390/fishes8020106>
- Lindeman, R. E., & Pelegri, F. (2010). Vertebrate Maternal-effect Genes: Insights into Fertilization, Early Cleavage Divisions, and Germ Cell Determinant Localization from Studies in The Zebrafish. *Molecular Reproduction and Development*, 77(4), 299–313. <https://doi.org/10.1002/mrd.21128>
- Linhart, O., Cheng, Y., Xin, M., Rodina, M., Tučková, V., Shelton, W. L., & Kašpar, V. (2020). Standardization of Egg Activation and Fertilization in Sterlet (*Acipenser ruthenus*). *Aquaculture Reports*, 17(March), 4–11. <https://doi.org/10.1016/j.aqrep.2020.100381>
- Linhartová, Z., Havelka, M., Pšenička, M., & Flajšhans, M. (2018). Interspecific Hybridization of Sturgeon Species Affects Differently Their Gonadal Development. *Czech Journal of Animal Science*, 63(1), 1–10.

<https://doi.org/10.17221/37/2016-CJAS>

- Lippman, Z. B., & Zamir, D. (2007). Heterosis: Revisiting The Magic. *Trends in Genetics*, 23(2), 60–66. <https://doi.org/10.1016/j.tig.2006.12.006>
- Liu, Q., Liu, J., Yuan, L., Li, L., Tao, M., Zhang, C., Qin, Q., Chen, B., Ma, M., Tang, C., & Liu, S. (2020). Distant Hybridization by Overcoming The Reproductive Barriers. *Reproduction*, 159(6), 237.
- Livak, K. J., & Schmittgen, T. D. (2001). Analysis of Relative Gene Expression Data Using Real-time Quantitative PCR and The $2^{-\Delta\Delta CT}$ method. *Methods*, 25(4), 402–408. <https://doi.org/10.1006/meth.2001.1262>
- Lubzens, E., Young, G., Bobe, J., & Cerdà, J. (2010). Oogenesis in Teleosts: How Fish Eggs are Formed. *General and Comparative Endocrinology*, 165(3), 367–389. <https://doi.org/10.1016/j.ygcen.2009.05.022>
- Lymbery, R. A., Kennington, W. J., & Evans, J. P. (2017). Egg Chemoattractants Moderate Intraspecific Sperm Competition. *Evolution Letters*, 1(6), 317–327. <https://doi.org/10.1002/evl3.34>
- Mackay, T. F. C., & Anholt, R. R. H. (2024). Pleiotropy, Epistasis and The Genetic Architecture of Quantitative Traits. *Nature Reviews Genetics*, 25(9), 639–657. <https://doi.org/10.1038/s41576-024-00711-3>
- Monson, C. A., & Sadler, K. C. (2010). Inbreeding depression and outbreeding depression are evident in wild-type zebrafish lines. *Zebrafish*, 7(2), 189–197. <https://doi.org/10.1089/zeb.2009.0648>
- Moran, B. M., Payne, C., Langdon, Q., Powell, D. L., Brandvain, Y., & Schumer, M. (2021). The genomic Consequences of Hybridization. *ELife*, 10, 1–33. <https://doi.org/10.7554/ELIFE.69016>
- Mostamand, J., & Esa, Y. (2024). Evaluation of Growth Performance and Morpho-meristic Characteristics in The Progenies of *Barbonymus gonionotus* and *Barbonymus schwanenfeldii*. *Malaysian Applied Biology*, 53(1), 147–168. <https://doi.org/10.55230/mabjournal.v53i1.2828>
- Muchlisin, Z. A. (2014). A General Overview on Some Aspects of Fish Reproduction. *Aceh International Journal of Science and Technology*, 3(1), 43–52. <https://doi.org/10.13170/aijst.0301.05>
- Munthe, I., Isa, M., Winaruddin, & Sulasmi, Herrialfian, dan R. (2016). Protein Content Analysis of Depik (*Rasbora tawarensis*) in Laut Tawar Lake Aceh Tengah. *Jurnal Medika Veterinaria*, 10(1), 67–69.
- Muraro, M., Falaschi, M., & Ficetola, G. F. (2022). Patterns of Performance Variation Between Animal Hybrids and Their Parents: A Meta-analysis. *Evolutionary Biology*, 49(4), 482–496. <https://doi.org/10.1007/s11692-022-09585-x>
- Murata, K., Conte, F. S., McInnis, E., Fong, T. H., & Cherr, G. N. (2014). Identification of The Origin and Localization of Chorion (Egg Envelope) Proteins in An Ancient Fish, The White Sturgeon, *Acipenser transmontanus*. *Biology of Reproduction*, 90(6), 1–12. <https://doi.org/10.1095/biolreprod.113.116194>
- Nathaniel, A. M., Soberekon, I. J., Gamage, I. E., Eli, A. A., & Raimi, M. O. (2024). Fecundity Estimation of Atlantic Mudskipper *Periophthalmus barbarus* in Ogbo-Okolo Mangrove Forest of Santa Barbara River, Bayelsa State Niger Delta, Nigeria. *BioRxiv*, 2024.02.01.578404. <https://www.biorxiv.org/content/10.1101/2024.02.01.578404v1>

- Neira, R., García, X., Lhorente, J. P., Filp, M., Yáñez, J. M., & Cascante, A. M. (2016). Evaluation of The Growth and Carcass Quality of Diallel Crosses of Four Strains of Nile Tilapia (*Oreochromis niloticus*). *Aquaculture*, *451*, 213–222. <https://doi.org/10.1016/j.aquaculture.2015.08.033>
- Nelson, C.-M., Gabriel, C.-M., Alejandra, C.-Z., José, B.-V., & Hector, C.-J. (2021). Genotype-by-environment Interaction in White Shrimp Associated With White Spot Disease. *Abanico Veterinario*, *11*(April). <https://doi.org/10.21929/abavet2021.13>
- Nissa, M. U., Pinto, N., Mukherjee, A., Reddy, P. J., Ghosh, B., Sun, Z., Ghantasala, S., Chetanya, C., Shenoy, S. V., Moritz, R. L., Goswami, M., & Srivastava, S. (2022). Organ-Based Proteome and Post-Translational Modification Profiling of a Widely Cultivated Tropical Water Fish, *Labeo rohita*. *Journal of Proteome Research*, *21*(2), 420–437. <https://doi.org/10.1021/acs.jproteome.1c00759>
- Nurfaiqah, S., Kurniawan, F., Simanjuntak, C. P. H., Romdoni, T. A., Munandar, A., Lisamy, S. E. A., & Thanh, T. T. (2023). Reproductive Biology of Indian Mackerel, *Rastrelliger kanagurta* (Cuvier, 1816) in The Southern Waters of West Java (FMA 573). *E3S Web of Conferences*, *442*. <https://doi.org/10.1051/e3sconf/202344201024>
- Nwachi, F. O., & Irabor, A. E. (2022). Determination of Sex-reversal Rate and Growth Performance in Diallel Hybrids of Nile Tilapia (*Oreochromis niloticus*) and Blue Tilapia (*Oreochromis aureus*). *Yuzuncu Yil University Journal of Agricultural Sciences*, *32*(2), 280–285. <https://doi.org/10.29133/yyutbd.1035192>
- Nzohabonayo, E., Manyala, J., Kang'ombe, J., & Kassam, D. (2021). Effect of Hybridization on Reproductive Performance of *Oreochromis karongae*, *Oreochromis shiranus* and *Oreochromis mossambicus*. *Aquaculture Research*, *52*(1), 302–308. <https://doi.org/10.1111/are.14893>
- Ochokwu, I. J., Bichi, A. H., & Onyia, L. . (2016). Intra-specific Hybridization between Two Strains of *Clarias gariepinus* from South West and North Western Nigeria. *Nigerian Journal of Fisheries and Aquaculture*, *4*(1), 34–41.
- Odin, R., Elswad, A., Khalil, K., Vo, K., Backenstose, N. J. C., Taylor, Z., Drescher, D., Bugg, W. S., Robinson, D., Gosh, K., Ye, Z., Qin, G., Creamer, D., & Dunham, R. (2024). Combining Ability of Female Channel Catfish, *Ictalurus punctatus*, and Male Blue Catfish, *I. furcatus*, for Early Growth Performance of Their Progeny. *Fishes*, *9*(4). <https://doi.org/10.3390/fishes9040115>
- OECD/FAO.(2024). Agricultural Outlook 2024-2033. *OECD-FAO Agricultural Outlook 2024-2033*. <https://doi.org/10.4060/cd0991en>
- Palmer, J., James, J. P. B., Sakaris, P. C., Kelly, A. M., Abdelrahman, H., Beck, B., & Roy, L. A. (2024). The Use of Age and Growth Techniques to Quantify The Age Structure of Carryover Hybrid Catfish (Female Channel Catfish × Male Blue Catfish) in Commercial Ponds in West Alabama. *North American Journal of Aquaculture*, *86*(4), 444–461. <https://doi.org/10.1002/naaq.10353>
- Panase, P., & Mengumphan, K. (2015). Growth Performance, Length-weight Relationship and Condition Factor of Backcross and Reciprocal Hybrid

- Catfish Reared in Net Cages. *International Journal of Zoological Research*, 11(2), 57–64. <https://doi.org/10.3923/ijzr.2015.57.64>
- Parween, S., & Kumar, S. (2023). Reproductive Performance of Selected Fresh Water Ornamental. *An International Quarterly Journal of Life Sciences*, 10(1&2), 918-922.
- Peñalba, J. V., Runemark, A., Meier, J. I., Singh, P., Wogan, G. O. U., Sánchez-Guillén, R., Mallet, J., Rometsch, S. J., Menon, M., Seehausen, O., Kulmuni, J., & Pereira, R. J. (2024). The Role of Hybridization in Species Formation and Persistence. *Cold Spring Harbor Perspectives in Biology*, March, a041445. <https://doi.org/10.1101/cshperspect.a041445>
- Perera, D., Aquaria, L., & Lanka, S. (2023). *Cross Breeding Strategies and Genetic Manipulation in Farmed Guppies*. 8(6), 2417–2443.
- Pérez-Atehortúa, M., Hernández, A. J., Dantagnan, P., Silva, M., Risopatrón, J., Farías, J., Figueroa Villalobos, E., & Valdebenito, I. (2023). Chorion in Fish: Synthesis, Functions and Factors Associated with Its Malformations. *Aquaculture Reports*, 30(October 2022). <https://doi.org/10.1016/j.aqrep.2023.101590>
- Pertiwi, P., Abinawanto, A., & Yimastria, S. (2018). Fertilization Rate of Lukas Fish (*Puntius bramoides*). *AIP Conference Proceedings*, 2023(October 2018). <https://doi.org/10.1063/1.5064157>
- Picard, M. A. L., Vicoso, B., Bertrand, S., & Escriva, H. (2021). Diversity of Modes of Reproduction and Sex Determination Systems in Invertebrates, and The Putative Contribution of Genetic Conflict. *Genes*, 12(8). <https://doi.org/10.3390/genes12081136>
- Prabowo, G., Kristiany, M. G. E., Marlina, E., Suhermanto, A., & Adi, C. A. (2023). Performance of Maintaining Brood Stock of *Clarias gariepinus* with Different Densities. *IOP Conference Series: Earth and Environmental Science*, 1289(1). <https://doi.org/10.1088/1755-1315/1289/1/012023>
- Pregler, K. C., Clemento, A., Grill, M., Adelizi, P., Carlson, S. M., & Garza, J. C. (2024). Reintroduction of Spring-run Chinook Salmon in the San Joaquin River: Evaluating Genetic and Phenotypic effects of Captive Breeding. *Conservation Science and Practice*, 6(9), 1–13. <https://doi.org/10.1111/csp2.13176>
- Qin, Y., Li, X., Noor, Z., Li, J., Zhou, Z., Ma, H., Xiao, S., Mo, R., Zhang, Y., & Yu, Z. (2020). A Comparative Analysis of The Growth, Survival and Reproduction of *Crassostrea hongkongensis*, *Crassostrea ariakensis*, and Their Diploid and Triploid Hybrids. *Aquaculture*, 520(January), 734946. <https://doi.org/10.1016/j.aquaculture.2020.734946>
- Qing, W., Ren, B., Lou, C., Zhong, H., Zhou, Y., & Liu, S. (2024). Gene Expression Analyses of *GH/IGF* Axis in Triploid Crucian carp with Growth Heterosis. *Frontiers in Endocrinology*, 15(March), 1–10. <https://doi.org/10.3389/fendo.2024.1373623>
- Radona, D., & Nafiqoh, N. (2014). Karakterisasi Reproduksi dan Nilai Heterosis Hasil Persilangan Ikan Gurame Bastar dan Bluesafir. *Jurnal Riset Akuakultur*, 13(2), 153–159.
- Rahmadi, I., Insyra, A. R., & Suhartini, W. (2023). Pengaruh Perbandingan Ikan Wader (*Rasbora jacobsoni*) dan Tepung Terigu terhadap Mutu Mi Kering. *Metana*, 19(2), 91–99. <https://doi.org/10.14710/metana.v19i2.57022>

- Rahman, M. A., Arshad, A., Marimuthu, K., Ara, R., & Amin, S. M. N. (2013). Inter-specific Hybridization and Its Potential for Aquaculture of Fin Fishes. *Asian Journal of Animal and Veterinary Advances*, 8(2), 139–153. <https://doi.org/10.3923/ajava.2013.139.153>
- Rahman, M. A., Lee, S. G., Yusoff, F. M., & Rafiquzzaman, S. M. (2018). Hybridization and Its Application in Aquaculture. *Sex Control in Aquaculture*, September 2019, 163–178. <https://doi.org/10.1002/9781119127291.ch7>
- Rahman, M. L., Dipu, S. Y., Haque, F., Rafiquzzaman, S. M., & Alam, M. S. (2022). Evaluation of Breeding and Growth Performances of Crossbreds and Backcrossbreds with purebreds of Bangladeshi and Vietnamese Climbing Perch (*Anabas testudineus*). *Aquaculture, Fish and Fisheries*, 2(5), 343–354. <https://doi.org/10.1002/aff2.70>
- Rahman, M. M., Lewis, L. S., Fanguie, N. A., Connon, R. E., & Hung, T. C. (2023). Effects of Salinity on Fertilization, Hatching, and Larval Performance of Longfin Smelt *Spirinchus thaleichthys*. *Aquaculture Research*, 2023. <https://doi.org/10.1155/2023/9984382>
- Reading, B. J., Andersen, L. K., Ryu, Y. W., Mushiobira, Y., Todo, T., & Hiramatsu, N. (2018). Oogenesis and Egg Quality in Finfish: Yolk formation and Other Factors Influencing Female Fertility. *Fishes*, 3(4), 1–28. <https://doi.org/10.3390/fishes3040045>
- Retnoaji, B., Muslimin, B., Wibowo, A., & Trismawanti, I. (2023). Morphometric and Genetic Diversity of *Rasbora* Several Species from Farmed and Wild Stocks. *Fisheries and Aquatic Sciences*, 26(9), 569–581. <https://doi.org/10.47853/FAS.2023.e49>
- Retnoaji, B., Nurhidayat, L., Pratama, S. F., Anshori, K., Hananya, A., Sofyantoro, F., & Bessho, Y. (2023). Embryonic Development of Indonesian Native Fish Yellow *Rasbora* (*Rasbora lateristriata*). *Journal of King Saud University-Science*, 35(7), 102810. <https://doi.org/10.1016/j.jksus.2023.102810>
- Rey, J., Widiyanto, S., & Retnoaji, B. (2023). Maturation of Female Yellow *Rasbora* (*Rasbora lateristriata* Bleeker, 1854) Using Oodev at Different Doses in Feed. *Journal of Tropical Biodiversity and Biotechnology*, 8(3), 1–13. <https://doi.org/10.22146/jtbb.75916>
- Robisalmi, A., Gunadi, B., Alipin, K., Lamanto, & Artati, D. (2023). Growth Response and Estimating Heritability of Synthetic Base Population (F0) of Red Tilapia (*Oreochromis* spp.) Through Family Selection. *IOP Conference Series: Earth and Environmental Science*, 1260(1), 0–10. <https://doi.org/10.1088/1755-1315/1260/1/012005>
- Robisalmi, A., Gunadi, B., & Setyawan, P. (2023). Evaluation of Growth Performance and Improving Genetic Gain of Blue Tilapia (*Oreochromis aureus*) Fourth-generation (F-4) at Brackish Water Pond. *Jurnal Ilmiah Perikanan dan Kelautan*, 15(1), 189–200. <https://doi.org/10.20473/jipk.v15i1.36069>
- Robisalmi, A., Listiyowati, N., Pamungkas, W., Artati, D., Mustofa, B., & Malini, D. M. (2025). Effect of Crossbreeding on Fecundity, Growth Performance, and Heterosis of Black Tilapia, Red Tilapia, and Mozambique Tilapia Reared in Earthen Ponds in West Java, Indonesia. *Jurnal Ilmiah Perikanan dan*

- Kelautan*, 17(1), 68–86. <https://doi.org/10.20473/jipk.vi.55958>
- Priatmoko, S., Setiawan, M., Andhyka, & Djaja, W., Y. (2024). Konservasi Ikan Wader di Kali Bedog Yogyakarta Untuk Mendukung Ekowisata. *ABDIMAS: Journal Tourism & Community Service (JTCS)*, 1(1), 28–32.
- Santos-Santos, J. H., Audenaert, L., Verheyen, E., & Adriaens, D. (2021). Ontogenetic Divergence Generates Novel Phenotypes in Hybrid Cichlids. *Journal of Anatomy*, 238(5), 1116–1127. <https://doi.org/10.1111/joa.13375>
- Santos, V. B., & Furquim, L. R. (2025). Evaluation of Growth Performances of Crossbreds and Backcrossbreds with Purebreds Nishikigoi and Hungarian Carp (*Cyprinus carpio*). *Aquaculture and Fisheries*, 10(3), 452–458. <https://doi.org/10.1016/j.aaf.2023.11.003>
- Sarker, B. S., Ali, A., Rahman, S. S., Alam, M. S., & Islam, M. S. (2024). Monogamous Hybridization of Nile Tilapia (*Oreochromis niloticus*) with Mozambique Tilapia (*O. mossambicus*) Results in Unprecedented All-female F1 Hybrid. *Aquaculture and Fisheries*, May. <https://doi.org/10.1016/j.aaf.2024.04.007>
- Sayeed, M. A. Bin. (2015). Strain Crossing in Mrigal (*Cirrhinus cirrhosus*): An Avenue to Persuade Heterosis in F1 Generation of Wild × Hatchery Hybrid. *Journal of Fisheries*, 3(2), 245. <https://doi.org/10.17017/jfish.v3i2.2015.109>
- Sentosa, A. A., & Djumanto. (2010). Habitat Pemijahan Ikan Wader Pari (*Rasbora lateristriata*) di Sungai Ngrancah, Kabupaten Kulonprogo. *Jurnal Iktiologi Indonesia*, 10(1), 55–63.
- S eraphin, K. Z., Lassina, D., Mexmin, K. K., Mamadou, O., & Allassane, O. (2022). Reproductive Biology of The Main Fish Species in Lakes Taabo, Kossou and Fa e (C ote d’Ivoire) with A View to Rational Fishing. *International Journal of Fisheries and Aquatic Studies*, 10(1), 46–55. <https://doi.org/10.22271/fish.2022.v10.i1c.2635>
- Sergazieva, O. D., Klimuk, A. A., & Tsarkov, M. D. (2025). Confirmation of The Efficiency of Obtaining F1 Hybrids *Clarias gariepinus* (Mikhailovskaya × Tamanskaya) According to Growth Performance, Morphometric and Production Characteristics F1 *Clarias gariepinus*. *Vestnik of Astrakhan State Technical University. Series: Fishing Industry.*, 5529, 41–50.
- Sharma, L., Ram, R. N., & Mishra, A. (2025). Gerontological Impact on Embryonic Development of Common Carp *Cyprinus Carpio* var. communis. *Turkish Journal of Fisheries and Aquatic Sciences*, 25(5). <https://doi.org/10.4194/TRJFAS26486>
- Sherman, C. D. H., Careau, V., Gasparini, C., Weston, K. J., & Evans, J. P. (2024). Population Density Effects on Gamete Traits and Fertilisation Dynamics Under Varying Sperm Environments in Mussels. *Ecology and Evolution*, 14(5), 1–13. <https://doi.org/10.1002/ece3.11338>
- Shokor, F., Croiseau, P., Gangloff, H., & Fritz, S. (2025). Deep Learning for Genomic Prediction Accounting for Heterosis in Crossbreeding Systems. *BioRxiv*, 1–44. <https://doi.org/10.1101/2025.07.24.666530>
- Sholihah, A. (2020). *Diversification of Sundaland Aquatic Biotas: Build-up of Freshwater Fishes’ Diversity and Distribution in A Biodiversity Hotspot*. Agricultural sciences. Universit e Montpellier.
- Siddique, M. A. M. (2016). *Fertilization Strategies for Externally Fertilizing Fishes*. Faculty of Fisheries and Protection of Waters. University of South

Bohemia.

- Simm, G., Pollott, G., Mrode, R., Houston, R., & Marshall, K. (2021). Strategies for Genetic Improvement. *Genetic improvement of farmed animals*. <https://doi.org/10.1079/9781789241723.0059>
- Smalås, A., Amundsen, P. A., & Knudsen, R. (2017). The Trade-off between Fecundity and Egg Size in A Polymorphic Population of Arctic Charr (*Salvelinus alpinus* (L.)) in Skogsfjordvatn, subarctic Norway. *Ecology and Evolution*, 7(7), 2018–2024. <https://doi.org/10.1002/ece3.2669>
- Socha, M., Chyb, J., Suder, A., & Bojarski, B. (2024). How Endocrine Disruptors Affect Fish Reproduction on Multiple Levels: A review. *Fisheries and Aquatic Life*, 32(3), 128–136. <https://doi.org/10.2478/aopf-2024-0012>
- Sogandi, S., Sanjaya, R. E., Baity, N., & Syahmani, S. (2020). Identifikasi Kandungan Gizi dan Profil Asam Amino dari Ikan Seluang [*Rasbora* Sp]. *Penelitian Gizi dan Makanan*, 42(2), 73–80. <https://doi.org/10.22435/pgm.v42i2.1287>
- Su, S., Xu, P., & Yuan, X. (2013). Estimates of Combining Ability and Heterosis for Growth Traits in A Full Diallel Cross of Three Strains of Common Carp, *Cyprinus carpio* L. *African Journal of Biotechnology*, 12(22), 3514–3521. <https://doi.org/10.5897/AJB12.2201>
- Sun, C., Dong, J., Li, W., Tian, Y., Hu, J., & Ye, X. (2022). Response to Four Generations of Selection for Growth Performance Traits in Mandarin Fish (*Siniperca chuatsi*). *Aquaculture*, 548(P1), 737590. <https://doi.org/10.1016/j.aquaculture.2021.737590>
- Suryani, S. A. M. P., Arya, I. W., & Kawan, I. M. (2019). Longitudinal Distribution and Population Structure *Rasbora lateristriata* Bleeker, 1854 (osteichthyes: Cyprinidae) in Sungai River. *Journal of Physics: Conference Series*, 1402(3), 5–10. <https://doi.org/10.1088/1742-6596/1402/3/033064>
- Suryani, S. A. M. P., Wirawan, I. G. P., Dwiyani, R., & Sritamin, M. (2020). Morphometric Variations of *Rasbora lateristriata* Bleeker Population in Different Habitat: Based on Truss Character Analysis. *International Journal of Life Sciences*, 4(2), 9–18. <https://doi.org/10.29332/ijls.v4n2.428>
- Susilo, U., Sistina, Y., Wibowo, E. S., Mahmoud, H. H. A., Hana, H., & Rachmawati, F. N. (2023). Growth, Food Efficiency, and Enzyme Activities in Yellow Rasbora (*Rasbora lateristriata*) at Different Feeding Frequencies. *Jurnal Biodjati*, 8(1), 128–138. <https://doi.org/10.15575/biodjati.v8i1.25029>
- Susilo, U., Sukardi, P., & Affandi, R. (2021). Length Ratio, Histological Structure, Feed Composition, and Enzyme Activity in The Gut of Yellow Rasbora (*Rasbora lateristriata* Blkr.). *E3S Web of Conferences*, 322, 1–9. <https://doi.org/10.1051/e3sconf/202132201039>
- Syed, N., Shah, T. H., Balkhi, M. H., Bhat, F. A., Abubakr, A., Wani, G. B., Bhat, B. A., Mohd, I., Wali, A., & Wani, I. F. (2020). Length-weight Relationship and Condition Factor of *Cyprinus carpio* var. communis in Manasbal lake, Kashmir. *Journal of Pharmacognosy and Phytochemistry*, 9(2), 1539–1544.
- Tamsil, A., & Hasnidar, H. (2024). Reproductive Biology of Silver Barb, *Barbonymus gonionotus* (Bleeker, 1850), in Lake Tempe, Indonesia. *Iranian Journal of Fisheries Sciences*, 23(6), 877–892. <https://doi.org/10.22092/ijfs.2024.131908>

- Tamsil, A., Nursyahrana, Jayadi, & Harlina. (2024). Reproduction Potential of Medaka Fish (*Oryzias profundicola*) as an Endemic Fish in Lake Towuti. *Egyptian Journal of Aquatic Biology & Fisheries*, 28(1), 1751 – 1762.
- Thakur, M. S. (2016). Basic Animal Breeding Methods. *Intech*, 11, 13. <https://doi.org/DOI: http://dx.doi.org/10.5772/intechopen.104136>
- Thakur, M. S. (2022). Basic Animal Breeding Methods. *IntechOpen*. <https://doi.org/DOI: http://dx.doi.org/10.5772/intechopen.104136>
- Thoa, N. P., Hamzah, A., & Nguyen, N. H. (2017). Genetic Variation and Correlated Changes in Reproductive Performance of A Red Tilapia Line Selected for Improved Growth Over Three Generations. *Animal Reproduction Science*, 184(March), 94–101. <https://doi.org/10.1016/j.anireprosci.2017.07.003>
- Thompson, K. A., Urquhart-cronish, M., Whitney, K. D., Rieseberg, L. H., & Schluter, D. (2019). Patterns, Predictors, and Consequences of Dominance in Hybrids. *bioRxiv preprint*. 1-28. doi: <https://doi.org/10.1101/818658>
- Tilahun, G., Dube, K., Chtruvedi3, C. S., & Kumar, B. (2016). Assessment of Reproductive Performance, Growth and Survival of Hybrids of African Catfish (*Clarias gariepinus*) and Indian Catfish (*Clarias batrachus*) Compared to Their Parental Lines Crosses. *Turkish Journal of Fisheries and Aquatic Sciences*, 16(4), 953–959. <https://doi.org/10.4194/1303-2712-v16>
- Trijoko, T., Yudha, D. S., Eprilurahman, R., & Pambudi, S. S. (2016). Keanekaragaman Jenis Ikan di Sepanjang Sungai Boyong – Code Propinsi Daerah Istimewa Yogyakarta. *Journal of Tropical Biodiversity and Biotechnology*, 1(1), 21. <https://doi.org/10.22146/jtbb.12930>
- Waite, R., Beveridge, M., Brummett, R., Castine, S., Chaiyawannakarn, N., Kaushik, S., Mungkung, R., Nawapakpilai, S., & Phillips, M. (2014). Improving Productivity and Environmental Performance of Aquaculture. *Creating a Sustainable Food Future*, June, 1–60.
- Wang, C., Gong, Y., Deng, F., Liu, X., Ding, E., Zhang, S., Ma, X., Raine, J., Jones, P. D., Tang, S., & Giesy, J. P. (2024). Lipid Remodeling During Early Development of Rainbow Trout (*Oncorhynchus mykiss*). *Aquaculture Reports*, 35 (February), 102005. <https://doi.org/10.1016/j.aqrep.2024.102005>
- Wang, H., Bruce, T. J., Su, B., Li, S., Dunham, R. A., & Wang, X. (2022). Environment-dependent Heterosis and Transgressive Gene Expression in Reciprocal Hybrids between the Channel Catfish *Ictalurus punctatus* and The Blue Catfish *Ictalurus furcatus*. *Biology*, 11(1). <https://doi.org/10.3390/biology11010117>
- Wang, H., Su, B., Zhang, Y., Shang, M., Li, S., Xing, D., Wang, J., Bern, L., Johnson, A., Al-Armanazi, J., Hasin, T., Hettiarachchi, D., Parrales, A. P., Dilawar, H., Bruce, T. J., Dunham, R. A., & Wang, X. (2024). From Heterosis to Outbreeding Depression: Genotype-by-environment Interaction Shifts Hybrid Fitness in Opposite Directions. *Genetics*, 227(4), 1–12. <https://doi.org/10.1093/genetics/iyae090>
- Wang, L., & Liu, J. (2022). Analysis of Hybrid Combining Ability for Growth and Multiple Stress Tolerance Traits in The Pacific White Shrimp, *Litopenaeus vannamei*. *Frontiers in Animal Science*, 3(August), 1–12. <https://doi.org/10.3389/fanim.2022.948251>

- Wang, Z., Chen, Y., Hao, Y., Wang, J., Zuo, S., Wei, J., & Nie, Z. (2025). Fecundity and Egg Size Trade-offs in *Triplophysa strauchii*: Reproductive Adaptations in Sayram Lake. *Fisheries Research*, 291(May). <https://doi.org/10.1016/j.fishres.2025.107558>
- Winata, C. L., & Korzh, V. (2018). The Translational Regulation of Maternal mRNAs in Time and Space. *FEBS Letters*, 592(17), 3007–3023. <https://doi.org/10.1002/1873-3468.13183>
- WOAH (World Organization for Animal Health). (2023). *Aquatic Animal Health Code* (25th ed.). <https://www.woah.org/en/what-we-do/standards/codes-and-manuals/previous-editions-of-the-aquatic-code/>
- Wood, K. R., Zhang, Y., MacKenzie Tackett, V., Martin, K. A., Liyanage, S. S. N., Beck, B. H., Abernathy, J. W., Dunham, R. A., Roy, L. A., Wang, X., & Butts, I. A. E. (2025). Parental Impacts on Industry-relevant Offspring Performance Traits Using Blue Catfish, *Ictalurus furcatus* (Valenciennes, 1840), Cryopreserved Sperm. *Theriogenology*, 247(March), 117577. <https://doi.org/10.1016/j.theriogenology.2025.117577>
- Worldometer. (2025). *Asian Countries by population (2025)*. Worldometer. <https://www.worldometers.info/population/countries-in-asia-by-population/>
- Würschum, T., Zhu, X., Zhao, Y., Jiang, Y., Reif, J. C., & Maurer, H. P. (2023). Maximization Through Optimization? On The Relationship between Hybrid Performance and Parental Genetic Distance. *Theoretical and Applied Genetics*, 136(9), 1–13. <https://doi.org/10.1007/s00122-023-04436-5>
- Xie, M., Zhou, Y., Gong, Y., Liu, M., Zhen, P., Li, Z., Zhou, L., Gui, J., & Wang, Z. (2024). Growth Superiority and Genetic Characterization of the Hybrid from Female Ussuri Catfish (*Pseudobagrus ussuriensis*) and Male Longsnout Catfish (*Leiocassis longirostris*). *Animals*, 14(24), 1–14. <https://doi.org/10.3390/ani14243617>
- Yadav Ph Scholar, A. D., Sahu Ph Scholar, J. D., Dubey Ph Scholar, A. D., Gadpayle Ph Scholar, R. D., Kiran Barwa Scholar, D., Kashyap, K., Yadav, A., Jain, A., Sahu, J., Dubey, A., Gadpayle, R., Kiran Barwa, D., & Verma, U. (2019). An Overview on Species Hybridization in Animals. *International Journal of Fauna and Biological Studies*, 6(5), 36–42. <http://www.faunajournal.com>
- Yanagimachi, R., Harumi, T., Matsubara, H., Yan, W., Yuan, S., Hirohashi, N., Iida, T., Yamaha, E., Arai, K., Matsubara, T., Andoh, T., Vines, C., & Cherr, G. N. (2017). Chemical and Physical Guidance of Fish Spermatozoa into The Egg Through The Micropyle. *Biology of Reproduction*, 96(4), 780–799. <https://doi.org/10.1093/biolre/iox015>
- Yang, Z., Zhang, Z., Wang, G., Huang, Z., & You, W. (2025). Exploiting Hybrid Vigor to Enhance Survival and Growth for Whiteleg Shrimp (*Litopenaeus vannamei*): A Complete Diallel Cross Experiment. *Aquaculture and Fisheries*, 10(5), 860–866. <https://doi.org/10.1016/j.aaf.2024.04.004>
- Yasmin, R., Rahman, M. M., Chakraborty, S., Sarker, B. S., Bappy, M. M. M., Sarker, P. K., Albeshr, M. F., Arai, T., & Hossain, M. B. (2024). Comparative Evaluation of The Efficacy of Three GnRH Analogues in Induced Breeding of Stinging Catfish, *Heteropneustes fossilis* under Hatchery Conditions. *Frontiers in Sustainable Food Systems*, 8(October), 1–10. <https://doi.org/10.3389/fsufs.2024.1445760>

- Ye, Y., Ren, W., Zhang, S., Zhao, L., Tang, J., Hu, L., & Chen, X. (2022). Genetic Diversity of Fish in Aquaculture and of Common Carp (*Cyprinus carpio*) in Traditional Rice–Fish Coculture. *Agriculture (Switzerland)*, 12(7). <https://doi.org/10.3390/agriculture12070997>
- Yu, B., Van Tol, H. T. A., Stout, T. A. E., & Roelen, B. A. J. (2021). Reverse Transcription Priming Methods Affect Normalisation Choices for Gene Expression Levels in Oocytes and Early Embryos. *Molecular Human Reproduction*, 27(7), 1–12. <https://doi.org/10.1093/molehr/gaab040>
- Yu, P., Zhong, H., Chen, H., Liu, M., Zhou, Y., Cao, X., Wu, C., Sun, Y., Wang, S., Gong, D., Gong, Q., Wen, M., Hu, F., & Liu, S. (2023). Study of Biological Characteristics of An Improved Japanese White Crucian Carp Lineage Derived from *Carassius cuvieri* (♀) × *Megalobrama amblycephala* (♂). *Aquaculture*, 577(July), 739955. <https://doi.org/10.1016/j.aquaculture.2023.739955>
- Zahro, H. (2022). *Perkembangan Larva Dan Struktur Histologis Intestinum Ikan Wader Pari (Rasbora lateristriata Bleeker, 1854) Hasil Perkawinan Indukan Yogyakarta dan Malang*. Faculty of Biology. Gadjah Mada University.
- Zahro, H., Anshori, K., Fransisco, S., Rosa, A. A., & Retnoaji, B. (2022). Reproductive Aspect and Embryonic Development of Wader pari Fish (*Rasbora lateristriata* Bleeker 1854) from Malang East Java . *Proceedings of the 7th International Conference on Biological Science (ICBS 2021)*, 22(ICBS 2021), 540–544. <https://doi.org/10.2991/absr.k.220406.076>
- Żarski, D., Nguyen, T., Le Cam, A., Montfort, J., Dutto, G., Vidal, M. O., Fauvel, C., & Bobe, J. (2017). Transcriptomic Profiling of Egg Quality in Sea Bass (*Dicentrarchus labrax*) Sheds Light on Genes Involved in Ubiquitination and Translation. *Marine Biotechnology*, 19(1), 102–115. <https://doi.org/10.1007/s10126-017-9732-1>
- Zhang, Y., Fan, W., Pan, X., Wang, X., Jiang, W., Yang, K., & Yang, J. (2019). Gene Expression Associated with Indicated Faster Growth of Crossbreeding in *Sinocyclocheilus grahami*. *Journal of Applied Ichthyology*, 35(4), 944–953. <https://doi.org/10.1111/jai.13910>
- Zhang, Y., Pan, X., Yin, Y., Yang, J., & Wang, X. (2021). Fertilization and Growth Performance in Reciprocal Hybrids of Dianchi Golden-line Barbel (*Sinocyclocheilus grahami*) and Domestic Common Carp (*Cyprinus carpio*) and Crucian Carp (*Carassius auratus*). *Aquaculture Reports*, 21(June), 100893. <https://doi.org/10.1016/j.aqrep.2021.100893>
- Zhong, H., Ren, B., Lou, C., Zhou, Y., Luo, Y., & Xiao, J. (2023). Nonadditive and Allele-specific Expression of Ghrelin in Hybrid Tilapia. *Frontiers in Endocrinology*, 14(December), 1–10. <https://doi.org/10.3389/fendo.2023.1292730>
- Zhou, Y., Zhang, X., Xu, Q., Yan, J., Yu, F., Xiao, J., Guo, Z., Luo, Y., & Zhong, H. (2019). Nonadditive Expression of Lipid Metabolism Pathway-related Genes in Intestine of Hybrids of Nile Tilapia Females (*Oreochromis niloticus*) and Blue Tilapia Males (*Oreochromis aureus*). *Molecular Biology Reports*, 46(1), 425–432. <https://doi.org/10.1007/s11033-018-4490-3>
- Zhu, J., Zou, Z., Li, D., Xiao, W., Yu, J., Chen, B., Xue, L., & Yang, H. (2022). Transcriptome Profiling Revealed Basis for Growth Heterosis in Hybrid Tilapia (*Oreochromis niloticus* ♀ × *O. aureus* ♂). *Fishes*, 7(1), 1–14.



UNIVERSITAS
GADJAH MADA

HIBRIDISASI INTRASPEKIFIK IKAN WADER PARI *Rasbora lateristriata* (Bleeker, 1854): PERFORMA REPRODUKSI, PERTUMBUHAN HIBRIDA, DAN EKSPRESI GEN bncr TERKAIT FERTILITAS
HANIK MUSTIKAWATI, Prof. Dr. Budi Setiadi Daryono, M.Agr.Sc.; Prof. Dr. Bambang Retnoaji, S.Si., M.Sc.
Universitas Gadjah Mada, 2026 | Diunduh dari <http://etd.repository.ugm.ac.id/>

<https://doi.org/10.3390/fishes7010043>

Zibiene, G., & Zibas, A. (2025). Comparison of Length-weight Relationships and Condition Factors Among Czech Carp (ALxDOR70) and Lithuanian Carp (Bubiai) Strains Grown in Ponds. *Bulgarian Journal of Agricultural Science*, 31(3), 621–629.