

DAFTAR PUSTAKA

- Affonso, G. K. Iwama, J. Smith, E. M. Donaldson. 2000. Effect of the aromatase inhibitor fadrozole on reproductive steroids and spermiation in male salmon (*Oncorhynchus kisutch*) during sexual maturation. *Aquaculture*. 188: 175-187.
- Akmal, M. 2017. Androgen *dihydrotestosterone* dan perannya pada sistem reproduksi pria. *Veterina Medika*. 10(1): 119-130.
- Ammazzalorso, A. M. Gallorini, M. Fantacuzzi, N. Gambacorta, B. D. Filippis, L. Giampietro, C. Maccallini, O. Nicolotti, A. Cataldi, R. Amoroso. 2021. Design, synthesis and biological evaluation of imidazole and triazole based carbamates as novel aromatase inhibitors. *European Journal of Medicinal Chemistry*. 211: 1-11.
- Araujo, F. G., M. G. Peixoto, Pinto, T. P. Teixeira. 2009. Distribution of guppies *Poecilia reticulata* (Peters, 1860) and *Phalloceros caudimaculatus* (Hensel, 1868) along a polluted stretch of Paraíba do Sul River, Brazil. *Brazil Journal of Biology*. 69(1): 41-48.
- Artanto, A. W., A. O. Sudrajat, K. Sumantadinata. 2010. Pengaruh Pemberian Aromatase Inhibitor melalui Perendaman Larva terhadap Keberhasilan Sex Reversal dan Pertumbuhan Ikan Nila Merah *Oreochromis* sp. Fakultas Perikanan dan Ilmu Kelautan, Institut Pertanian Bogor. Skripsi.
- Atmadjaja, J., M. Sitanggang. 2008. Panduan Lengkap Budi Daya dan Perawatan Cupang Hias. PT. Agromedia Pustaka, Tangerang.
- Badawy, A., I. A. Aal, M. Abulatta. 2009. Clomiphene citrate of anastrozole for ovulation induction in women with polycystic ovary syndrome? A prospective controlled trial. *Fertil Steril*. 92(3): 860-863.
- Baroiller, J. F., H. D'Cotta. 2018. Sex control in tilapias. *Sex control in aquaculture*. 26: 189-234.
- Browne, L. J., C. Guide, H. Rodriguez, R. E. Steele. 1991. Fadrozole hydrochloride: a potent, selective, nonsteroidal inhibitor of aromatase for the treatment of estrogen-dependent disease. *Journal of Medicinal Chemistry*. 34(2): 725-736.
- Brueggemeier, R. W., J. C. Hackett, E. S. Diaz-Cruz. 2005. Aromatase inhibitors in the treatment of breast cancer. *Endocrine Reviews*. 26(3): 331-345.
- Buzdar, A. U., J. F. Robertson, W. Eiermann, J. M. Nabholz. 2002. An overview of the pharmacology and pharmacokinetics of the newer generation aromatase inhibitors anastrozole, letrozole, and exemestane. *Cancer*. 95(9): 2006-2016.

- Campbell, N. A., J. B. Reece, M. R. Taylor, E. J. Simon. 2006. *Biology: Concepts & Connections*. 5th ed. Pearson/Benjamin Cummings, San Francisco.
- Carmichael, P. L. 1998. Mechanisms of action of antiestrogens: relevance to clinical benefits and risks. *Cancer Invest.* 16: 604-611.
- Caruso, M. 2011. Alpha-2 Adrenergic Agonists. *Essence of Anesthesia Practice (Third Edition)*. 573-574.
- Deswira, U., A. O. Sudrajat, D. T. Soelistyowati. 2015. Mekanisme alih kelamin ikan nila *Oreochromis niloticus* (Linnaeus, 1758) melalui manipulasi ekspresi gen aromatase. *Jurnal Ikhtologi Indonesia*. 16(1): 67-74.
- Devana, I., A. O. Sudrajat, M. Zairin. 2010. Pengaruh Lama Perendaman Induk di dalam Aromatase Inhibitor terhadap Proporsi Kelamin Anak Ikan Gapi *Poecilia reticulata* Peters. Fakultas Perikanan dan Ilmu Kelautan, Institut Pertanian Bogor. Skripsi.
- Ernawati. 2021. *Biologi Manusia untuk Mahasiswa Kesehatan*. Rena Cipta Mandiri, Malang.
- Fitzpatrick, S. L, J. S. Richards. 1994. Transcriptional regulation of the rat aromatase gene in granulosa cells and R2C cells by SF-1 and CREB. *Proc. Endocr. Soc.* 76: 399.
- Fujaya, Y. 2002. *Fisiologi Ikan Dasar Pengembangan Teknologi Perikanan Proyek Peningkatan Penelitian Pendidikan Tinggi Direktorat Jendral Pendidikan Tinggi. Departemen Pendidikan Nasional*.
- Hariyanto, S., H. Adro'i, M. Ali, B. Irawan. 2019. DNA barcoding: a study of guppy fish (*Poecilia reticulata*) in East Java, Indonesia. *Biosaintifika*. 11(2): 272-278.
- Higa, G. M., M. D. Alkouri. 1998. Anastrozole: a selective aromatase inhibitor for treatment of breast cancer. *J. Health-Syst Pharm.* 55: 445-452.
- Hunter, G. A., E. M. Donaldson. 1983. Hormonal Sex Control and Application to Fish Culture. P: 223-291. In: W.S. Hoar, D.J. Randall, and E. M. Donaldson (Eds). *Fish Physiology*, Vol. IX B. Academic Press. New York.
- Ijiri, S., H. Kaneko, T. Kobayashi, D. S. Wang, F. Sakai, B. Paul-Prasanth, M. Nakamura, Y. Nagahama. 2008. Sexual dimorphic expression of genes in gonads during early differentiation of a teleost fish, the Nile tilapia *Oreochromis niloticus*. *Biology of Reproduction*. 78: 333-341.
- Ito, S. 2011. Pharmacokinetics 101. *Paediatr Child Health*. 16(9): 535-536.
- Ji, X., S. Bu, Y. Zhu, Y. Wang, X. Wen, F. Song, J. Luo. 2022. Identification of SF-1 and FOXL2 and their effect on activating P450 aromatase transcription via

specific binding to the promoter motifs in sex reversing *Cheilinus undulates*. Front Endocrinol. 13: 863360.

- Katare, M. B., Pai, M., Mogalekar, H. S. 2021. Effect of anastrozole on masculinization in ornamental fish, dwarf gourami, *Trichogaster lalius* (Hamilton, 1822). Indian Journal of Experimental Biology. 59: 581-589.
- Kiswani, A. S. 2015. Biologi untuk SMA/MA kelas XII. PT Putra Nugraha Sentosa, Surakarta.
- Liana, Y. P. 2007. Efektivitas aromatase inhibitor yang diberikan melalui pakan buatan terhadap *sex reversal* ikan nila merah *Oreochromis* sp. Jurnal Sumberdaya Perairan. 2(1): 1-7.
- Malloch, L., A. R. Vlasak. 2013. An assessment of current clinical attitudes toward letrozole use in reproductive endocrinology practices. Fertil Steril. 100(6): 1740-1744.
- Mardiana, T. Y. 2009. Teknologi pengarahan kelamin ikan menggunakan madu. PENA Akuatika. 1(1): 37-43.
- Mazida, A. N. 2002. Pengaruh Aromatase Inhibitor terhadap Nisbah Kelamin Ikan Gapi (*Poecilia reticulata* Peters). Fakultas Perikanan dan Ilmu Kelautan, Institut Pertanian Bogor. Skripsi.
- Mundayana, Y, R. Suyanto. 2004. Guppy. Jakarta. Penebar Swadaya.
- Nivelle R., V. Gennotte, E. J. K. Kalala, N. B. Ngoc, M. Muller, C. Mélard, C. Rougeot. 2019. Temperature preference of nile tilapia (*Oreochromis niloticus*) juveniles induces spontaneous sex reversal. PLoS One. 14(2): e0212504.
- Nurlina, Zulfikar. 2016. Pengaruh lama perendaman induk ikan guppy (*Poecilia reticulata*) dalam madu terhadap nisbah kelamin jantan (*sex reversal*) ikan guppy. Acta Aquatica. 3(2): 75-80.
- Oie, S. 1986. Drug distribution and binding. J Clin Pharmacol. 26(8): 583-586.
- Pandian, T. J., S. G. Shella. 1995. Hormonal induction of sex reversal in fish. Aquaculture. 138: 1-22.
- Poonlaphdecha, S., E. Pepey, M. Canonne, H. de Verdal, J. Baroiller, H. D'Cotta. 2013. Temperature induced-masculinisation in the nile tilapia causes rapid up-regulation of both *dmrt1* and *amh* expressions. General and Comparative Endocrinology. 19: 234-242.
- Pratama, D. R. 2018. Pengaruh Warna Wadah Pemeliharaan terhadap Peningkatan Intensitas Warna Ikan Guppy (*Poecilia reticulata*). Fakultas Pertanian, Universitas Lampung. Skripsi.

- Priyono, E., Muslim, Yulisman. 2013. Maskulinisasi ikan gapi (*Poecilia reticulata*) melalui perendaman induk bunting dalam larutan madu dengan lama perendaman berbeda. Jurnal Akuakultur Rawa Indonesia. 1(1): 14-22.
- Putri, R. H., N. Annisa, Y. Atifah. 2021. Analisis Tingkah Laku Reproduksi Ikan Guppy (*Poecilia* sp.). Prosiding SEMNAS BIO 2021, Padang.
- Rademaker-Lakhai, J. M., D. van den Bongard, D. Pluim, J. H. Beijnen, J. H. M. Schellens. 2004. A phase I and pharmacological study with imidazolium-trans-DMSO-imidazole-tetrachlororuthenate, a novel ruthenium anticancer agent. Clinical Cancer Research. 10(11): 3717-3727.
- Rahelia, A. 2022. Maskulinisasi Ikan Guppy (*Poecilia reticulata* Peters, 1859) dengan Suhu 36°C pada Tahap Post-Larva. Fakultas Pertanian, Universitas Gadjah Mada. Skripsi.
- Sakai, H., Y. Kirino, S. Katsuma, F. Aoki, and M. G. Suzuki. 2016. Morphological and histomorphological structures of testes and ovaries in early developmental stages of the silkworm, *Bombyx mori*. Journal Insect Biotechnol Sericology. 85(1): 15-20.
- Saputra, R. A. 2021. Perubahan Orientasi Seks Ikan Guppy (*Poecilia reticulata*) yang Terpapar Suhu 36°C pada Fase Larva. Fakultas Pertanian, Universitas Gadjah Mada. Skripsi.
- Sary, R., Zainudin, and E. Rahmi. 2017. Struktur histologis gonad ikan gabus (*Channa striata*) betina. JIMVET. 1(3): 334-342.
- Sever, D. M., T. Halliday, V. Waight, J. Brown, H. A. Davies, and C. Moriarty. 1999. Sperm storage in females of the Smooth Newt (*Triturus V. Vulgaris* L.) I: ultrastructure of the spermathecal during the breeding season. Journal of Experimental Zoology. 283: 51-70.
- Shen, X., H. Yan, W. Li, H. Zhou, J. Wang, Q. Zhang, L. Zhang, Q. Liu, Y. Liu. 2023. Estrodiol-17 β and aromatase inhibitor treatment induced alternations of genome-wide DNA methylation pattern in *Takifugu rubripes* gonads. Gene. 882: 147641.
- Shofura, H., Suminto, dan D. Chilmawati. 2017. Pengaruh penambahan “Probio-7” pada pakan buatan terhadap efisiensi pemanfaatan pakan, pertumbuhan dan kelulushidupan benih ikan nila gift (*Oreochromis niloticus*). Jurnal Sains Akuakultur Tropis. 1: 10-20.
- Simpson, E. R., M. S. Mahendroo, G. D. Means, M. W. Kilgore, M. M. Hinshelwood, S. Graham-Lorence, B. Amarneh, Y. Ito, C. R. Fisher, M. D. Michael. 1994. Aromatase cytochrome P450, the enzyme responsible for estrogen biosynthesis. Endocr Rev. 15: 342-350.

- Simpson, E. R., C. Clyne, G. Rubin, W. C. Boon, K. Robertson, K. Britt, C. Speed, M. Jones. 2002. Aromatase—a brief overview. *Annu Rev Physiol.* 64: 93-127.
- Stocco, C. 2012. Tissue physiology and pathology of aromatase. *Steroids.* 77: 27-35.
- Sudrajat, A. O., I. D. Astutik, H. Arfah. 2007. Seks reversal ikan nila merah (*Oreochromis* sp.) melalui perendaman larva menggunakan aromatase inhibitor. *Jurnal Akuakultur Indonesia.* 6(1): 103-108.
- Syakirin, M. B., T. Y. Maerdiana, A. Kurniawan. 2011. Pengaruh perendaman hormon aromatase inhibitor (AI) dengan dosis yang berbeda pada stadia larva terhadap nisbah kelamin ikan cupang (*Betta splendens*). *Jurnal Litbang Kota Pekalongan.* 4(1): 48-54.
- Tucker, E. J. 2022. The genetics and biology of FOXL2. *Sexual Development.* 16: 184-193.
- Ukhroy, N. U. 2008. Efektifitas Penggunaan Propolis terhadap Nisbah Kelamin Ikan Guppy (*Poecilia reticulata*). Fakultas Perikanan dan Ilmu Kelautan, Institut Pertanian Bogor. Skripsi.
- Utomo, B. 2008. Efektivitas Penggunaan Aromatase Inhibitor dan Madu terhadap Nisbah Kelamin Ikan Gapi (*Poecilia reticulata* Peters). Teknologi dan Manajemen Akuakultur Fakultas Perikanan dan Ilmu Kelautan, Institut Pertanian Bogor. Skripsi.
- Wang, D. S., L. Y. Zhou, T. Kobayashi, M. Matsuda, Y. Shibata, F. Sakai, Y. Nagahama. 2010. Doublesex- and Mab-3-related transcription factor-1 repression of aromatase transcription, a possible mechanism favoring the male pathway in tilapia. *Endocrinology.* 151: 1331-1340.
- Wijayanti, D. R. 2002. Pengaruh Aromatase Inhibitor terhadap Nisbah Kelamin Ikan Nilem (*Osteochilus hasselti* C.V.) Hasil Ginogenesis. Fakultas Perikanan dan Ilmu Kelautan, Institut Pertanian Bogor. Skripsi.
- Winardi, D., A. F. Syarif, Robin. 2021. Maskulinisasi ikan guppy (*Poecilia reticulata*) menggunakan ekstrak daun mensirak (*Ilex cymosa*) melalui perendaman induk bunting. *Jurnal Perikanan.* 11(2): 232-242.
- Wirjoatmodjo. 1993. Ikan Air Tawar Indonesia Bagian Barat dan Sulawesi. Periplus Edition (HK) Ltd. dan Proyek EMDI KMNKLH Jakarta.
- Wozniak, A., J. Holman, J. B. Hutchinson. 1992. In vitro potency and selectivity of the nonsteroidal androgen aromatase inhibitor CGS. compared to steroidal inhibitor in the brain. *J.Steroid. Biochem.Mol.Biol.* 43: 281.

- Xu, G., T. Huang, W. Gu , E. Liu, B. Wang. 2020. Effects of letrozole and 17 α -methyltestosterone on gonadal development in all-female triploid rainbow trout (*Oncorhynchus mykiss*). *Aquaculture Research*. 00: 1-10.
- Yamaguchi, T., S. Yamaguchi, T. Hirai, T. Kitano. 2007. Follicle-stimulating hormone signaling and Foxl2 are involved in transcriptional regulation of aromatase gene during gonadal sex differentiation in Japanese flounder, *Paralichthys olivaceus*. *Biochemical and Biophysical Research Communications*. 359: 935-940.
- Yudha, H. T., A. O. Sudrajat, Haryanti. 2017. Pengaruh rangsangan hormon aromatase inhibitor dan oodev terhadap perubahan kelamin dan perkembangan gonad ikan kerapu sunu, *Plectropomus leopardus*. *Jurnal Riset Akuakultur*. 12(4): 325-333.
- Yuniarti T., S. H. T. Prayoga, Suroso. 2007. Tilapia broodstock production technique. *Jurnal Budidaya Air Tawar*. 4: 32-36.
- Zairin, M. 2002. Sex Reversal Memproduksi Benih Ikan Jantan atau Betina. Penebar Swadaya. Jakarta.