

## DAFTAR PUSTAKA

- Aftab, U. 2019. Energy and Amino Acid Requirements of Broiler Chickens: Keeping Pace with The Genetic Progress. *World's Poultry Science Journal*. 75(4): 507–514.
- Akter, S. H., M. Z. I. Khan, M. R. Jahan, M. R. Karim, and M. R. Islam. 2006. Histomorphological Study of The Lymphoid Tissues of Broiler Chickens. *Bangladesh Journal of Veterinary Medicine*. 4(2): 87–92.
- Alagawany, M., S. S. Elnesr, M. R. Farag, M. E. A. El-Hack, A. F. Khafaga, A. E. Taha, R. Tiwari, M. I. Yatoo, P. Bhatt, S. K. Khurana, and K. Dhama. 2019. Omega-3 and Omega-6 Fatty Acids in Poultry Nutrition: Effect on Production Performance and Health. *Animals*. 9(8): 573.
- Al-Khalaifah, H. 2020. Modulatory Effect of Dietary Polyunsaturated Fatty Acids on Immunity, Represented by Phagocytic Activity. *Frontiers in Veterinary Science*. 7:569939.
- Al-Khalaifah, H., and A. Al-Nasser. 2021. Dietary Source of Polyunsaturated Fatty Acids Influences Cell Cytotoxicity in Broiler Chickens. *Scientific Reports*. 11(1): 10113.
- Al-Khalaifah, H., A. Al-Nasser, D. I. Givens, C. Rymer, and P. Yaqoob. Comparison of Different Dietary Sources of n-3 Polyunsaturated Fatty Acids on Immune Response in Broiler Chickens. *Heliyon*. 6(1).
- Al-Khalifa, H., D. I. Givens, C. Rymer, and P. Yaqoob. 2012. Effect of n-3 Fatty Acids on Immune Function in Broiler Chickens. *Poultry Science*. 91(1): 74–88.
- Al-Nasser, A., H. Al-Khalaifa, A. Al-Saffar, F. Khalil, M. Al-Bahouh, G. Ragheb, A. Al-Haddad, and M. Mashaly. 2007. Overview of Chicken Taxonomy and Domestication. *World's Poultry Science Journal*. 63(2): 285–300.
- Appling, D. R., S. J. Anthony-Cahill, and C. K. Mathews. 2019. *Biochemistry: Concepts and Connections*. 2<sup>nd</sup> Edition. United States: Pearson Education.
- Atkinson, T. G., H. J. Barker, and K. A. Meckling-Gill. 1997. Incorporation of Long-chain n-3 Fatty Acids in Tissues and Enhanced Bone Marrow

Cellularity with Docosaehaenoic Acid Feeding in Post-weanling Fischer 344 Rats. *Lipids*. 32(3): 293–302.

Azman, M. A., I. H. Cerci, and N. Birben. 2005. Effects of Various Dietary Fat Sources on Performance and Body Fatty Acid Composition of Broiler Chickens. *Turkish Journal of Veterinary & Animal Sciences*. 29(3): 811–819.

Babu, U. S., P. L. Wiesenfeld, R. B. Raybourne, M. J. Myers, and D. Gaines. 2005. Effect of Dietary Fishmeal on Cell-Mediated Immune Response of Laying Hens. *International Journal of Poultry Science*. 4(9): 652–656.

Barekatin, M. R. and R. A. Swick. 2016. Composition of More Specialised Pre-Starter and Starter Diets for Young Broiler Chickens: A Review. *Animal Production Science*. 56(8): 1239–1247

Borsa, P., I. S. Arlyza, T. B. Hoareau, and K. Shen. 2018. Diagnostic Description and Geographic Distribution of Four New Cryptic Species of The Blue-Spotted Maskray Species Complex (Myliobatoidei: Dasyatidae; *Neotrygon* spp.) Based on DNA Sequences. *Journal of Oceanology and Limnology*. 36(3): 827–841.

Brickett, K. E., J. P. Dahiya, H. L. Classen, and S. Gomis. 2007. Influence of Dietary Nutrient Density, Feed Form, and Lighting on Growth and Meat Yield of Broiler Chickens. *Poultry Science*. 86(10): 2172–2181.

Calder, P. C. 2005. Polyunsaturated Fatty Acids and Inflammation. *Biochemical Society Transactions*. 33(2): 423–427.

Calder, P. C. 2006. n-3 Polyunsaturated Fatty Acids, Inflammation, and Inflammatory Diseases. *The American Journal of Clinical Nutrition*. 83(6): 1505S–1519S.

Cook, M. E., C. C. Miller, Y. Park, and M. Pariza. 1993. Immune Modulation by Altered Nutrient Metabolism: Nutritional Control of Immune-induced Growth Depression. *Poultry Science*. 72(7): 1301–1305.

Delpech, J. C., A. Thomazeau, C. Madore, C. Bosch-Bouju, T. Larrieu, C. Lacabanne, J. Remus-Borel, A. Aubert, C. Joffre, A. Nadjar, and S. Laye. 2015. Dietary n-3 PUFAs Deficiency Increases Vulnerability to

Inflammation-Induced Spatial Memory Impairment.  
*Neuropsychopharmacology*. 40(12): 2774–2787.

El-Katcha, M. I., M. E. El-Kholy, M. A. Soltan, and A. H. El-Gayar. 2014. Effect of Dietary Omega-3 to Omega-6 Ratio on Growth Performance, Immune Response, Carcass Traits and Meat Fatty Acids Profile of Broiler Chickens. *Poultry Science Journal*. 71–94.

Ferreira, I., Falcato, F., Bandarra, N., & Rauter, A. P. (2022). Resolvins, Protectins, and Maresins: DHA-Derived Specialized Pro-Resolving Mediators, Biosynthetic Pathways, Synthetic Approaches, and Their Role in Inflammation. *Molecules*. 27(5): 1677.

Fritsche, K. L., N. A. Cassity, and S. C. Huang. 1990. Effect of Dietary Fat Source on Antibody Production and Lymphocyte Proliferation in Chickens. *Poultry Science*. 70(3): 611–617.

Galli, C., and P. C. Calder. 2009. Effects of Fat and Fatty Acid Intake on Inflammatory and Immune Responses. *Annals of Nutrition & Metabolism*. 55(1/3): 123–139.

Grasman, K. A. 2002. Assessing Immunological Function in Toxicological Studies of Avian Wildlife. *Integr. Comp. Biol*. 42(1): 34–42.

Headland, S. E., and L. V. Norling. The Resolution of Inflammation: Principles and Challenges. *Seminars in Immunology*. 27(3): 149–160.

Herlina, B., R. Novitam, and T. Karyono. 2015. Pengaruh Jenis dan Waktu Pemberian Ransum terhadap Performans Pertumbuhan dan Produksi Ayam Broiler. *Jurnal Sain Peternakan Indonesia*. 10(2): 107–113.

Isaac, U. E., E. Oyo-Ita, N. P. Igwe, and E. L. Ije. 2023. Preparation Of Histology Slides and Photomicrographs: Indispensable Techniques in Anatomic Education. *Anatomy Journal of Africa*. 12(1): 2252–2262.

Islam, R., N. Sultana, Z. Haque, and M. R. Islam. Effect of Dietary Dexamethasone on The Morphologic and Morphometric Adaptations in The Lymphoid Organs and Mortality Rate in Broilers. *Veterinary Medicine and Science*. 9(4): 1656–1665.

Joffre, C., C. Rey, and S. Laye. 2019. N-3 Polyunsaturated Fatty Acids and the Resolution of Neuroinflammation. *Frontiers in Pharmacology*. 10: 1022.

- Kebir, M. V. O. E., G. Barnathan, E. M. Gaydou, I. Siau, and J. Miralles. 2007. Fatty Acids in Liver, Muscle and Gonad of Three Tropical Rays Including Non-Methylene Interrupted Dienoic Fatty Acids. *Lipids*. 42(6): 525–535.
- Klasing, K. C. 2007. Nutrition and Immune System. *British Poultry Science*. 48(5): 525–537.
- Last, P. R., W. T. White, and B. S. Serét. 2016. Taxonomic Status of Maskrays of The *Neotrygon kuhlii* Species Complex (Myliobatoidei: Dasyatidae) with The Description of Three New Species from The Indo-West Pacific. *Zootaxa*. 4083(4): 533–561.
- Liu, W., R. Pedram, F. Javandel, S. Nasabian, and A. Seidavi. The Effects of Different Levels of Dietary Fish Oil, Soybean Oil, and Sunflower Oil on Performance and Immunity Related Parameters of Broiler Chicken. *Journal of Animal and Plant Sciences*. 27(2): 384–388.
- Lin, X., Z. Gou, Y. Wang, L. Li, Q. Fan, F. Ding, C. Zheng, and S. Jiang. 2020. Effects of Dietary Iron Level on Growth Performance, Immune Organ Indices and Meat Quality in Chinese Yellow Broilers. *Animals*. 10(4): 670.
- Meluzzi, A., and F. Sirri. 2009. Welfare of Broiler Chickens. *Italian Journal of Animal Science*. 80(sup1): 161–173.
- Miesfeld, R. L., and M. M. McEvoy. 2017. *Biochemistry*. 1<sup>st</sup> Edition. Canada: W. W. Norton & Company.
- Mir, N. A., A. Rafiq, F. Kumar, V. Singh, and V. Shukla. 2017. Determinants of Broiler Chicken Meat Quality and Factors Affecting Them: A Review. *Journal of Food Science and Technology*. 54(10): 2997–3009.
- Moller, A. P., and J. Erritzoe. 2000. Predation against birds with low immunocompetence. *Oecologia*. 122: 500–504.
- Navarro-García, G., M. L. González-Félix, F. Márquez-Farías, , L. Bringas-Alvarado, M. Pérez-Velazquez, J. M. Montoya-Laos, and B. Moreno-Silva. 2014. Lipid Content and Fatty Acid Composition of The Liver from The Rajiforms *Urotrygon chilensis*, *Urobatis halleri*, *Rhinobatos glaucostigma*, *Rhinoptera steindachneri* and *Dasyatis dipeteura* Captured in Sinaloa, México. *International Food Research Journal*. 21(1): 229–235.

- Ono, K., H. Kaneko, S. Choudhary, C. C. Pilbeam, J. A. Lorenzo, T. Akatsu, N. Kugai, and L. G. Raisz. 2009. Biphasic Effect of Prostaglandin E2 on Osteoclast Formation in Spleen Cell Cultures: Role of the EP2 Receptor. *Journal of Bone and Mineral Research*. 20(1): 23–29.
- Palmquist, D. L. 2009. Omega-3 Fatty Acids in Metabolism, Health, and Nutrition and for Modified Animal Product Foods. *The Professional Animal Scientist*. 25(2009): 207–249.
- Panda, A. K., S. K. Bhanja, and G. S. Sunder. 2015. Early Post Hatch Nutrition on Immune System Development and Function in Broiler Chickens. *World's Poultry Science Journal*. 71(2): 285–296.
- Parmentier, H. K., M. G. B. Nieuwland, M. W. Barwegen, R. P. Kwakkel, and J. W. Schrama. 1997. Dietary Unsaturated Fatty Acids Affect Antibody Responses and Growth of Chickens Divergently Selected for Humoral Responses to Sheep Red Blood Cells. *Poultry Science*. 76(8): 1164–1171.
- Permadi, A. N. N., E. Kurnianto, and Sutiyono. 2020. Karakteristik Morfometrik Ayam Kampung Jantan dan Betina di Desa Tirtomulyo Kecamatan Plantungan, Kabupaten Kendal, Jawa Tengah. *Jurnal Peternakan Indonesia*. 22(1): 11–20.
- Putri, A. B. S. R. N., and G. Depison. 2018. Bobot Badan dan Karakteristik Morfometrik Beberapa Galur Ayam Lokal. *Jurnal Ilmu dan Teknologi Peternakan Tropis*. 7(3): 256–263.
- Puthongsiriporn, U., and S. E. Scheideler. 2005. Effects of Dietary Ratio of Linoleic to Linolenic Acid on Performance, Antibody Production, and In Vitro Lymphocyte Proliferation in Two Strains of Leghorn Pullet Chicks. *Poultry Science*. 84(6):846–857.
- Radzikowskka, U., A. O. Rinaldi, Z. C. Sozener, D. Karaguel, M. Wojcik, K. Cypryk, M. Akdis, C. A. Akdis, and M. Sokolowska. 2019. The Influence of Dietary Fatty Acids on Immune Responses. *Nutrients*. 11(12): 2990.
- Rahmatullah, S. N., Z. Effendi, H. Mayulu, F. Ardhani, and A. Sulaiman. 2018. Perbandingan Morfometrik Ayam Loal Kalimantan Timur Berdasarkan Pendekatan Analisis Diskriminan. *Journal of Tropical Animal Science* 6(3): 817–828.

- Saleh, H., Rahimi, S. H., and Karimi, T. 2009. The Effect of Diet that Contained Fish Oil on Performance, Serum Parameters, the Immune System and the Fatty Acid Composition of Meat in Broilers. *International Journal of Veterinary Research*. 3(2): 69–75.
- Sartika, T. 2013. Perbandingan Morfometrik Ukuran Tubuh Ayam KUB dan Sentul Melalui Pendekatan Analisis Diskriminan. *Seminar Nasional Teknologi Peternakan dan Veteriner*. 561–570.
- Seargeant S., E. Rahbar, and F. H. Chilton. 2016. Gamma-linolenic acid, Dihommo-gamma linolenic, Eicosanoids and Inflammatory Processes. *European Hournal of Pharmacology*. 785: 77–86.
- Shariatmadari, F. 2009. Feeding Schedules for Broiler Chickens. *World's Poultry Science Journal*. 65(3): 393–400.
- Sijben, J. W. C., H. D. Groot, M. G. B. Nieuwland, J. W. Schrama, and H. K. Parmentier. 2000. Dietary linoleic acid divergently affects immune responsiveness of growing layer hens. *Poultry Science*. 79(8): 1106–1115.
- Skaper, S. D., L. Facci, M. Zusso, and P. Giusti. An Inflammation-Centric View of Neurological Disease: Beyond the Neuron. 2018. *Frontiers in Celluar Neuroscience*. 12: 72.
- Smith, K. G., and J. L. Hunt. 2004. On The Use of Spleen Mass As a Measure of Avian Immune System. *Oecologia*. 138: 28–31.
- Song, B., D. Tang, S. Yan, H. Fan, G. Li, M. S. Shahid, T. Mahmood, and Y. Guo. 2021. Effects of Age on Immune Function in Broiler Chickens. *Journal Of Animal Science And Biotechnology*. 12: 1–12.
- Tsutsumi, R., C. Xie, X. Wei, M. Zhang, X. Zhang, L. M. Flick, E. M. Schwarz, and R. J. O'Keefe. 2009. PGE2 Signaling Through the EP4 Receptor on Fibroblasts Upregulates RANKL and Stimulates Osteolysis. *Journal of Bone and Mineral Research*. 24(10): 1753–1762.
- Udumoh, A. F., I. C. Nwaogu, U. M. Igwebuike, and I. R. Obidike. 2022. Pre-Hatch and Post-Hatch Development of The Bursa of Fabricius in Broiler Chicken: a Morphological Study. *Veterinary Research Forum*. 13(3): 301–308.

- Wang, Y. W., C. J. Field, and J. S. Sim. 2000. Dietary Polyunsaturated Fatty Acids Alter Lymphocyte Subset Proportion and Proliferation, Serum Immunoglobulin G Concentration, and Immune Tissue Development in Chicks. *Poultry Science*. 79(12): 1741–1748.
- Weinreb, M., D. Shamir, M. Machwate, G. A. Rodan, S. Harada, and S. Keila. 2006. Prostaglandin E2 (PGE2) Increases the Number of Rat Bone Marrow Osteogenic Stromal Cells (BMSC) via Binding the EP4 Receptor, Activating Sphingosine Kinase and Inhibiting Caspase Activity. *Prostaglandins, leukotrienes and essential fatty acids*. 75(2): 81–90.
- Whelan, J., K. M. Gowdy, and S. R. Shaikh. 2015. N-3 Polyunsaturated Fatty Acids Modulate B Cell Activity in Pre-Clinical Models: Implications for the Immune Response to Infections. *European Journal of Pharmacology*. 785: 10–17.
- Zhang, Q., X. Sun, T. Wang, B. Chen, Y. Huang, H. Chen, and Q. Chen. 2019. The Postembryonic Development of the Immunological Barrier in the Chicken Spleens. *Journal of Immunology Research*. 2019: 1–10.
- Zhang, Q., S. Zhang, G. Cong, Y. Zhang, M. H. Madsen, B. Tan, and S. Shi. 2021. Effects of Soy Protein Concentrate in Starter Phase Diet on Growth Performance, Blood Biochemical Indices, Carcass Traits, Immune Organ Indices and Meat Quality of Broilers. *Animals*. 11(2): 281.
- Zhang, X., E. M. Schwarz, D. A. Young, J. E. Puzas, R. N. Rosier, and R. J. O’Keefe. 2002. Cyclooxygenase-2 Regulates Mesenchymal Cell Differentiation into the Osteoblast Lineage and is Critically Involved in Bone Repair. *The Journal of Clinical Investigation*. 109(11): 1405–1415.
- Zhylya, M., N. Shkodyak, O. Pyatnychko, G. Kotsyumbas, N. Lisova, O. Sobodosh, M. Shkil, and E. Khmil. 2022. Blood Indices and Immune Organs Morphological Structure of Broiler Chickens Under the Influence of Different Doses of Probiotic Feed Additives. *Ukrainian Journal of Veterinary and Agricultural Sciences*. 5(2): 17–27.