

DAFTAR PUSTAKA

- Aditi, P., Srivastava, S., Pandey, H. & Tripathi, Y. B. 2020. Toxicity profile of honey and ghee, when taken together in equal ratio. *Toxicology Reports*. 7(13): 624-636.
- Alves, M. H., Takaki, G. M. C., Okada, K., Pessoa, I. H. F. & Milanez, A. 2005. Detection of extracellular protease in *Mucor* species. *Revista Iberoamericana de Micologia*. 22(2): 114-117.
- Ahn, N. T. L., Kunhareang, S. & Duangjinda, M. 2015. Association of chicken growth hormones and insulin-like growth factor gene polymorphisms with growth performance and carcass traits in Thai broilers. *Asian Australas Journal Animal Science*. 28(12): 1686-1695.
- Aryanti, F., Aji, M. B. & Budiono, N. 2013. Pengaruh pemberian air gula merah terhadap performan ayam kapung pedaging. *Jurnal Sain Veteriner*. 31(2): 156-165.
- Aulia, R., Bahri, S. & Ananda, M. 2020. Fermentasi kelapa parut bebas protein dengan *Aspergillus niger* untuk menghasilkan lipase. *KOVALEN: Jurnal Riset Kimia*. 6(1): 45-52.
- Ayuti, S. R., Purnama, H. R., Azhari, Isa, M., Helmi, T. Z., Novita, A., Herrialfian, Darniati & Makmur, A. 2022. Pengaruh penambahan ampas kelapa (*Cocos nucifera* L.) fermentasi pada pakan terhadap persentase karkas dan kadar lemak ayam broiler. *Jurnal Peternakan Indonesia*. 24(3): 288-297.
- Bollido, M. E. 2021. Growth performance and profitability of broiler chickens with vermi meal supplementation under total confinement management. *Jurnal Ilmu Pertanian Indonesia*. 26(1): 8-14.
- Budiartawan, I. K. A., Darmawan, I. G. A. C., Berata, I. K. & Setiasih, N. L. E. 2018. Perkembangan secara histologi vili duodenum ayam pedaging yang diberikan imbuhan asam butirrat pada pakan. *Indonesia Medicus Veterinus*. 7(5): 522-530.
- Chen, M.J., Zhou, J.Y., Chen, Y.J., Wang, X.Q., Yan, H.C. & Gao, C.Q. 2021. The in ovo injection of methionine improves intestinal cell proliferation and differentiation in chick embryos by activating the JAK2/STAT3 signaling pathway. *Animal Nutrition*. 7(4): 1031-1038.
- Diniyah, N., Subagio, A., Sari, R. N. L., Vindy, P. G. & Rofiah, A. A. 2018. Effect of fermentation time and cassava varieties on water content and the yield of starch from modified cassava flour (MOCAF). *Indonesian Journal of Pharmaceutical Science and Technology*. 5(2): 71-75.
- Elhassan, M. M. O., Ali, A. M., Eissa, L. & Taha, A. A. 2022. Histology of the small intestine of broiler chicks. *University of Bahri Journal of Veterinary Sciences*. 1(2): 55-61.
- Ellenburg, J. L., Kolettis, P., Drwiega, J. C., Posey, A. M. Goldberg, M., Mehrad, M., Giannico, G. & Gordetsky, J. 2020. Formalin versus bouin solution for testis biopsies: which is the better fixatives?. *Journal of Clinical Pathology*. 13(4): 1-4.

- Esebius, N., Langi, T. M. & Taroreh, M. I. R. 2022. Karakteristik kimia tepung muate (*Pteridophyta filicinae*) sebagai pangan tradisional masyarakat pulau Kimaam. *Jurnal Agroekoteknologi Terapan*. 3(3): 261-268.
- Fadhilah, I. N., Octaviani, V. & Kurniasih, N. 2022. Nilai nutrisi (analisis proksimat) ampas kelapa terfermentasi sebagai pakan kelinci. *Gunung Djati Conference Series*. 7(4): 83-88.
- Fard, S. H., Toghyani, M. S. & Tabidien. 2014. Effect of oyster mushroom wastes on performance, immune responses and intestinal morphology of broiler chickens. *International Journal of Recycling Organic Waste in Agriculture*. 3(4): 141-146.
- Fatemi, S. A., Alqhtani, A., Elliot, K. E. C., Bello, A., Zhang, H. & Peebles, E. D. 2021. Effect of the in ovo injection of vitamin D3 and 25-hydroxyvitamin D3 in Ross 708 broilers subsequently fed commercial or calcium and phosphorus-restricted diets. I. performance, carcass characteristics, and incidence of woody breast myopathy. *Poultry Science*. 100(8): 1-11.
- Harimurti, S. & Rahayu, E. S. 2009. Morfologi usus ayam broiler yang disuplementasi dengan probiotik strain tunggal dan campuran. *Agritech*. 29(3): 179-183.
- Haura, A. & Ilmi, M. 2024. The potential of *Mucor irregularis* isolated from fruits in producing microbial lipid. *Malaysian Applied Biology*. 53(1): 19-25.
- Huang, Q., Wen, C., Yan, W., Sun, C., Shuang, G., Zheng, J. & Yang, N. 2022. Comparative analysis of the characteristics of digestive organs in broiler chickens with different feed efficiencies. *Poultry Science*. 101(12): 1-10.
- Jozefiak, D., Kieronczyk, B., Rawski, M., Hejdysz, M., Rutkowski, A., Engberg, R. M. & Hojberg, O. 2014. *Clostridium perfringens* challenge and dietary fat type affect broiler chicken performance and fermentation in the gastrointestinal tract. *Animal*. 8(6): 912-922.
- Kaminski, R., Kamler, E., Wolnicki, J., Sikorska, J. & Walowski, J. 2010. Condition, growth and food conversion in barbel, *Barbus barbus* (L.) juveniles under different temperature/diet combinations. *Journal of Thermal Biology*. 35(8): 422-427.
- Khonyoung, D., Yamauchi, K. & Suzuki, K. 2015. Influence of dietary fat sources and lysolecithin on growth performance, visceral organ size, and histological intestinal alteration in broiler chickens. *Livestock Science*. 176(10): 111-120.
- Kolo, S., Charles, V., Lisnahan, Oktovianus, R. & Nahak, T. B. 2020. Pengaruh suplementasi L-threonine dalam pakan terhadap kinerja organ dalam ayam broiler. *Journal of Animal Science*. 5(4): 64-66.
- Kulshreshtha, G., Hincke, M. T., Prithiviraj, B. & Critchley, A. 2020. A review of varied uses of macroalgae as dietary supplements in selected poultry with special reference to laying hen and broiler chickens. *Journal of Marine Science and Engineering*. 8(7): 1-28.

- Laudadio, V., Passantino, L., Perillo, A., Lopresti, G., Passantino, A., Khan, R. U. & Tufarelli, V. 2012. Productive performance and histological features of intestinal mucosa of broiler chickens fed different dietary protein levels. *Poultry Science*. 91(7): 265-270.
- Maiorka, A., Santin, E., Dahlke, F., Boleli, I. C., Furlan, R. L. & Macari, M. 2003. Posthatching water and feed deprivation affect the gastrointestinal tract and intestinal mucosa development of broiler chicks. *Journal of Applied Poultry Research*. 12(4): 483-492.
- Mannivan, A., Bhardwaj, R., Padmanabhan, S., Suneja, P., Hebbar, K. B. & Kanade, S. R. 2018. Biochemical and nutritional characterization of coconut (*Cocos nucifera* L.) hautorium. *Food Chemistry ELSEVIER*. 23(8): 153-159.
- Mansyur, M. F. 2018. Rancangan bangun sistem kontrol otomatis pengatur suhu dan kelembapan kandang ayam broiler menggunakan Arduino. *Journal of Computer and Information System*. 26(2): 28-38.
- Miskiyah, Usmati, S. & Mulyorini. 2011. Pengaruh enzim proteolitik dengan bakteri asam laktat probiotik terhadap karakteristik dadih susu sapi. *Jurnal Ilmu Ternak dan Veteriner*. 16(4): 304-311.
- Mousa, M. A., Asman, A. S., Ali, R. M., Sayed, R. K., Majrashi, K. A., Fakiha, K. G. & Selim, S. 2023. Impacts of dietary lysine and crude protein on performance, hepatic, and renal functions, biochemical parameters, and histomorphology of small intestine, liver, and kidney in broiler chickens. *Veterinary Science*. 10(2): 1-19.
- Nasruddin. 2010. Komposisi nutrisi pakan ayam ras pedaging masa akhir (*broiler finisher*) dari beberapa bahan pakan lokal. *Dinamika Penelitian BIPA*. 21(38): 144-152.
- Nath, S. K., Kundu, S. K. & Uddin, M. 2021. Postnatal development of duodenum in broiler. *Journal of Istanbul Veterinary Science*. 5(2): 113-116.
- Netcha, K., Pley, S. & Aem, B. 2021. Nutritional content of bromelain enzyme fermented coconut dregs as feed for *Oreochromis niloticus*. *Journal La Lifesci*. 2(2): 31-39.
- Noor, A. D., Eryati, R. & Rafi'I, A. 2015. Pendeteksian karbohidrat (mukus) pada jaringan lunak karang massif (*Porites* sp.) di perairan kota Bontang Provinsi Kalimantan Timur. *Jurnal Ilmu Perikanan Tropis*. 20(2): 90-99.
- Oktavia, H., Rochmi, S. E., Suprayogi, T. W. & Legowo, D. 2021. Weight gain and feed conversion of broiler chickens in reviewed from cage temperature and humidity. *Journal of Applied Veterinary Science and Technology*. 2(1): 5-9.
- PIC. 2016. *Practical Guidelines for On-Farm Euthanasia of Poultry*. 2nd edition. Poultry Industry Council. Puslinch.

- Rahayu, I. H. S., Darwati, S. & Mu'iz, A. 2019. Morfometrik ayam broiler dengan pemeliharaan intensif dan akses *free range* di daerah tropis. *Jurnal Ilmu Produksi dan Teknologi Hasil Peternakan*. 7(2): 75-80.
- Rangkuti, N. A., Hamdan, & Daulay, A. H. 2014. Identifikasi morfometriks dan jarak genetik ayam kampung di Labuhan Batu Selatan. *Jurnal Peternakan Intergratif*. 3(1): 96-119.
- Ratriyanto, A. & Sunarto. 2020. Small intestine characteristics and nutrient retention in broiler chickens submitted to different protein regimes and betaine supplementation. *Bulletin of Animal Science*. 44(1): 15-21.
- Reicher, N., Zehavi, T. M., Dayan, J., Wong, E. A. & Uni, Z. 2022. Nutritional stimulation by in-ovo feeding modulates cellular proliferation and differentiation in the small intestinal epithelium of chicks. *Animal Nutrition*. 8(1): 91-101.
- Rusmiatik. 2019. Perbandingan fiksasi larutan bouin dan formalin pada sediaan preparat histologi testis marmut. *Jurnal Kedokteran Media Informasi Ilmu Kedokteran dan Kesehatan*. 4(2): 5-10.
- Sadurni, M., Barroeta, A. C., Sol, C., Puyalto, M. & Castillejos, L. 2022. Short communication: evaluatin of intestinal release of butyric acid from sodium butyrate protected by salts of medium-chain fatty acids in broiler chicken. *Animals*. 12(24): 1-7.
- Saragih, H. T. S. S. G., Alawi, M. F., Rafieiy M., Lesmana, I. & Sujadmiko, H. 2017. Pakan aditif ekstrak etanol lumut hati meningkatkan pertumbuhan morfologi duodenum dan perkembangan otot dada ayam pedaging. *Jurnal Veteriner*. 18(4): 617-623.
- Saragih, H. & Ndruma, M. L. 2020. Pengaruh pemberian ampas kelapa fermentasi dalam ransum terhadap performan ayam broiler. *Jurnal Ilmu Peternakan*. 1(1): 8-14.
- Sardin, S. M., Nodet, P., Coton, E. & Jany, J. L. 2017. Mucor: a janus-faced fungal genus with human health impact and industrial applications. *Fungal Biology Review*. 31(2): 12-32.
- Sari, Y. S. I., Suthama, N. & Sukamto, B. 2019. Perkembangan duodenum dan penambahan bobot badan pada ayam broiler yang diberi ransum dengan protein mikropartikel ditambah probiotik *Lactobacillus* sp.. *Jurnal Penelitian Peternakan Terpadu*. 1(1): 4-12.
- Sariati, Masyitha, D., Zainuddin, Fitriani, Balqis, U., Iskandar, C. D. & Thasmi, C. N. 2019. Jumlah sle goblet dan kelenjar liberkuhn pada usus halus sapi aceh. *Jurnal Ilmiah Mahasiswa Veteriner*. 3(2): 108-115.
- Satimah, S., Yunianto, V. D. & Wahyono, F. 2019. Bobot relatif dan panjang usus halus ayam broiler yang diberi ransum menggunakan cangkang telur mikropartikel dengan suplementasi probiotil *Lactobacillus* sp.. *Jurnal Sain Peternakan Indonesia*. 14(4): 396-403.

- Sieo, C. C., Abdullah, N., Tan, W. S. & Hot, Y. W. 2005. Influence of glucanase-producing lactobacilli strains on intestinal characteristic and feed passage rate of broiler chickens. *Journal of Poultry Science*. 84(5): 734-741.
- Slizewska, K., Kopec, P. M., Zbikowski, A. & Szeleszczuk, P. 2020. The effect of symbiotic preparations on the intestinal microbiota and her metabolism in broiler chickens. *Scientific Reports Nature Research*. 10(4281): 1-13.
- Subowo, Y. B. S. 2010. Uji aktifitas enzim selulase dan ligninase dari beberapa jamur dan potensinya sebagai pendukung pertumbuhan tanaman terong (*Solarium melongena*). *Berita Biologi Jurnal Ilmu-Ilmu Hayati LIPI*. 10(1): 1-6.
- Sukaryana, Y. 2010. Peningkatan energi metabolis produk fermentasi campuran bungkil inti sawit dan dedak padi. *Jurnal Penelitian Pertanian Terapan*. 10(2): 138-143.
- Sumarmin, R., Yuniarti, E. & Yaulandary, A. 2017. Pengaruh emisi gas buang kendaraan bermotor berbahan bakar pertamax 92 terhadap histologis paru. *Berkala Ilmiah Bidang Biologi*. 1(2): 1-9.
- Sunata, K. W., Wibowo, A. A., Oktaviyanti, I. K., Budiwinata, W. & Rosida, L. 2023. Hubungan derajat displasia dengan jumlah sel goblet pada gambaran histopatologi kolitis di RSUD Ulin Banjarmasin pada tahun 2020-2022. *Molucca Medica*. 6(1): 41-50.
- Suryani, A., Suryahadi, S. & Santosa S. 2019. Evaluasi tingkat produktivitas dan efisiensi usaha ternak ayam broiler di Kabupaten Bantul Yogyakarta. *Jurnal Ilmu-Ilmu Agribisnis*. 7(1): 45-53.
- Suvarna, S. K., Layton, C. & Bancroft, J. D. 2019. *Bancroft's Theory and Practice of Histological Techniques*. 8th edition. Elsevier. Amsterdam. Pp 57-58, 75-76.
- Syamsuriadi, B., Hamsah., Banong, S., Pakiding, W. & Hakim, M. R. 2014. Performa dan kondisi usus halus ayam pedaging dengan berat tetas berbeda apabila dipuasakan setelah menetas. *Jurnal Ilmu dan Teknologi Peternakan*. 3(2): 81-89.
- Tamzil, M. H., Indarsih, B. & Syamsuhaidi. 2023. Morphometric measurements of several body parts of laying phase arabian chickens. *Jurnal Biologi Tropis*. 23(2): 505-509.
- Wang, J., Wang, B., Du, H., Zhang, H., Li, H., Wang, F. & Zhao, X. 2019. Effects of *Diutina rugosa* SD-17 on growth performance, intestine morphology, and immune status of chickens. *Poultry Science*. 98(12): 6311-6318.
- Wang, X., Farnell, Y. Z., Peebles, E. D., Kiess, A. S., Wamsley, K. G. S & Zhai, W. 2016. Effects of prebiotics, probiotics, and their combination on growth performance, small intestine morphology, and resident *Lactobacillus* of male broilers. *Poultry Science*. 95(2): 1332-1340.

- Wijayanti, G. E., Setyawan, P. & Kurniawati, D. I. 2017. A simple paraffin embedded protocol for fish egg, embryo, and larvae. *Scripta Biologica*. 4(2): 85-89.
- Yuliyanti, S., Yuanita, I., Suthama, N. & Wahyuni, I. H. 2019. Kecernaan protein dan massa protein daging pada ayam broiler yang diberi kombinasi ekstrak bawang dayak dan *Lactobacillus acidophilus*. *Jurnal Ilmiah Peternakan Terpadu*. 11(2): 82-93.