

DAFTAR PUSTAKA

- Adil, S., T. Banday, G. A. Bhat, M. S. Mir, dan M. Rehman. 2010. Effect of dietary supplementation of organic acids on performance, intestinal histomorphology, and serum biochemistry of broiler chicken. *Veterinary Medicine International*. 2010: 1–7.
- Badan Pusat Statistik Nasional. 2022. Produksi Tanaman dan Buah-buahan. <https://www.bps.go.id/id/statistics-table/2/NjljMg==/produksi-tanaman-buah-buahan.html>. Diakses pada 10 Agustus 2023 pukul 10.00 WIB.
- Badrussalam A., Isroli, dan T. Yudiarti. 2020. Pengaruh penggunaan aditif kunyit terhadap bobot relatif organ pencernaan ayam kampung super. *Jurnal Sain Peternakan Indonesia*. 15(3): 273–279.
- Bhaskar, B., dan M. Shantaram. 2013. Morphological and biochemical characteristics of *Averrhoa* fruit. *International Journal of Pharmaceutical, Chemical and Biological Sciences*. 3(3): 924–928.
- Bolton, W., dan W. A. Dewar. 1965. The digestibility of acetic, propionic and butyric acids by the fowl. *British Poultry Science*. 6(2): 103–105.
- Cheled-Shoval, S. L., E. Amit-Romach, M. Barbakov, dan Z. Uni. 2011. The effect of in ovo administration of mannan oligosaccharide on small intestine development during the pre- and posthatch periods in chickens. *Poultry Science*. 90(10): 2301–2310.
- Chen, J., P. Wang, C. Liu, Q. Yin, J. Chang, L. Wang, S. Jin, T. Zhou, Q. Zhu, dan F. Lu. 2023. Effects of compound feed additive on growth performance and intestinal microbiota of broilers. *Poultry Science*. 102(1): 1–4.
- Dono, N. D. 2012. Nutritional strategies to improve enteric health and growth performance of poultry in the post antibiotic era. *Veterinary and Life Science*, University of Glasgow. Glasgow.
- Gauthier, R. 2002. Intestinal health, the key to productivity (The case of organic acids) Precongreso Cientifico Avicola IASA. Saint-Hyacinthe.
- Gilani, S. M. H., Z. Rashid, S. Galani, S. Ilyas, S. Sahar, Zahoor-ul-Hassan, K. Al-Ghanim, S. Zehra, A. Azhar, F. Al-Misned, Z. Ahmed, N. Al-Mulham, dan S. Mahboob. 2021a. Growth performance, intestinal histomorphology, gut microflora and ghrelin gene expression analysis of broiler by supplementing natural growth promoters: A nutrigenomics approach. *Saudi Journal of Biological Science*. 28(6): 3438–3447.
- Gilani, S. M. H., Z. Rashid, S. Galani, S. Ilyas, S. Sahar, Zahoor-ul-Hassan, K. Al-Ghanim, S. Zehra, A. Azhar, F. Al-Misned, Z. Ahmed, N. Al-

- Mulham, dan S. Mahboob. 2021b. Growth performance, intestinal histomorphology, gut microflora and ghrelin gene expression analysis of broiler by supplementing natural growth promoters: A nutrigenomics approach. *Saudi Journal of Biological Science*. 28(6): 3438–3447.
- Hamid, H., H. Q. Shi, G. Y. Ma, Y. Fan, W. X. Li, L. H. Zhao, J. Y. Zhang, C. Ji, dan Q. G. Ma. 2018. Influence of acidified drinking water on growth performance and gastrointestinal function of broilers. *Poultry Science*. 97(10): 3601–3609.
- Han, M., B. Chen, Y. Dong, Z. Miao, Y. Su, C. Liu, dan J. Li. 2023. Evaluation of liquid organic acids on the erformance, chyme pH, nutrient utilization, and gut microbiota in broilers under high stocking density. *Animals*. 13(2): 1–17.
- Jamilah, N. Suthama, dan L. D. Mahfudz. 2014. Pengaruh penambahan jeruk nipis sebagai acidifier pada pakan step down terhadap kondisi usus halus ayam pedaging. *Jurnal Ilmu dan Teknologi Peternakan*. 3(2): 90–95.
- Krauze, M. 2021. *Pythobiotics, a Natural Growth Promoter for Poultry. Advanced Studies in the 21st Century Animal Nutrition*. IntechOpen. London.
- Leliqia, N. P. E., dan I. Safitri. 2021. A review of phytochemical properties, antibacterial activity, and toxicity study of *Averrhoa bilimbi* leaves and fruit. *Journal of Pharmaceutical Science and Application*. 3(1): 32–39.
- Mabelebele, M., O. J. Alabi, J. W. Ngambi, D. Norris, and M. M. Ginindza. 2014. Comparison of gastrointestinal tracts and pH values of digestive organs of ross 308 broiler and indigenous venda chickens fed the same diet. *Asian Journal of Animal Veterinary Advances*. 9(1): 71–76.
- Mareta, I., G. Nathaniel, T. Yudiarti, E. Widiastuti, H. I. Wahyuni, dan S. Sugiharto. 2020. Effect of *Averrhoa bilimbi* fruit filtrate and shrimp paste mixture on performance, gut microbes and blood profile of broilers. *Jurnal Ilmu Ternak dan Veteriner*. 25(4): 182–189.
- Maria Cardinal, K., M. Kipper, I. Andretta, dan A. Machado Leal Ribeiro. 2019. Withdrawal of antibiotic growth promoters from broiler diets: performance indexes and economic impact. *Poultry Science*. 98(12): 6659–6667.
- Maryam, S., S. Juniasti, dan R. Kosman. 2015. Uji aktivitas antibakteri ekstrak etanol buah belimbing wuluh (*Averrhoa bilimbi* L.) asal kota Watampone. *As-Syifaa Jurnal Farmasi*. 7(1): 60–69.
- Mehdi, Y., M. P. L  tourneau-Montminy, M. Lou Gaucher, Y. Chorfi, G. Suresh, T. Rouissi, S. K. Brar, C. C      , A. A. Ramirez, dan S. Godbout.

2018. Use of antibiotics in broiler production: global impacts and alternatives. *Animal Nutrition*. 4(2): 170–178.
- Mustafa, A., S. Bai, Q. Zeng, X. Ding, J. Wang, Y. Xuan, Z. Su, dan K. Zhang. 2021. Effect of organic acids on growth performance, intestinal morphology, and immunity of broiler chickens with and without coccidial challenge. *AMB Express*. 11(1): 1–18.
- Muzaiifa, M. 2018. Perubahan komponen kimia belimbing wuluh (*Averrhoa bilimbi* L.) selama pembuatan asam sunti. *Jurnal Teknologi Pertanian Andalas*. 22(1): 37–43.
- Nair, M. S., K. Soren, V. Singh, dan B. Boro. 2016. Anticancer activity of fruit and leaf extracts of *Averrhoa bilimbi* on MCF-7 human breast cancer cell lines: A preliminary study. *Austin Journal of Pharmacology and Therapeutics*. 4(2): 1–5.
- Pandey, A. K., P. Kumar, dan M. J. Saxena. 2019. Feed additives in animal health. In: Gupta, R., Srivastava, A., Lall, R. (eds) *Nutraceuticals in Veterinary Medicine*, Springer.
- Patil, A. G., S. P. Koli, dan D. A. Patil. 2013. Pharmacognostical standardization and HPTLC fingerprint of *Averrhoa bilimbi* (L.) fruits. *Journal of Pharmacy Research*. 6(1): 145–150.
- Paul, S. K., G. Halder, M. K. Mondal, dan G. Samanta. 2007. Effect of organic acid salt on the performance and gut health of broiler chicken. *Poultry Science*. 44(4): 389–395.
- Pertiwi, D. D. R., R. Murwani, dan T. Yudiarti. 2017. Bobot relatif saluran pencernaan ayam broiler yang diberi tambahan air rebusan kunyit dalam air minum. *Jurnal Peternakan Indonesia*. 19(2): 61–65.
- Pirgozliev, V. R., S. P. Rose, dan S. Ivanova. 2019. Feed additives in poultry nutrition. *Bulgarian Journal of Agriculture Science*. 25: 8–11.
- Pratama, A. R., I. Mareta, T. Yudiarti, H. I. Wahyuni, E. Widiastuti, dan S. Sugiharto. 2021. Administration of fermented *Averrhoa bilimbi* L. fruit filtrate on growth, hematological, intestinal, and carcass indices of broilers. *Tropical Animal Science Journal*. 44(1): 79–89.
- Rahman, A., dan A. Hamid. 2016. Effect of belimbing buluh (*Averrhoa bilimbi*) juice extract on oxidative stability and microbiological quality of spent chicken meat. *International Food Research Journal*. 23(6): 2675–2680.
- Sapsuha, Y., Y. Syafie, N. Sjafani, dan H. Ishak. 2019. Campus intellectual product business development program (PPUPIK): Utilization of herbs

- as phytobiotic in Broiler Chicken. *Journal of Physics Conferece Series*. 1364(1): 1–8.
- Satimah, S., V. D. Yuniarto, dan F. Wahyono. 2019. Bobot relatif dan panjang usus halus ayam broiler yang diberi ransum menggunakan cangkang telur mikropartikel dengan suplementasi probiotik *Lactobacillus sp.* *Jurnal Sain Peternakan Indonesia*. 14(4): 396–403.
- Sohail, M. U., M. E. Hume, J. A. Byrd, D. J. Nisbet, A. Ijaz, A. Sohail, M. Z. Shabbir, dan H. Rehman. 2012. Effect of supplementation of prebiotic mannan-oligosaccharides and probiotic mixture on growth performance of broilers subjected to chronic heat stress. *Poultry Science*. 91(9): 2235–2240.
- Šťastník, O., J. Novotný, A. Roztočilová, D. Zálešáková, M. Řiháček, L. Horáková, H. Pluháčková, L. Pavlata, dan E. Mrkvicová. 2022. Caraway (*Carum carvi L.*) in fast-growing and slow-growing broiler chickens' diets and its effect on performance, digestive tract morphology and blood biochemical profile. *Poultry Science*. 101(9): 1–9.
- Sugiharto, S. 2016. Role of nutraceuticals in gut health and growth performance of poultry. *Journal of the Saudi Society of Agricultural Sciences*. 15(2): 99–111.
- Sugiharto, S., E. Widiastuti, T. Sartono, H. Wahyuni, A. Pratama, dan T. Yudiarti. 2022. Growth, blood, and intestinal indices of broilers at high density pens provided with fermented *Averrhoa bilimbi* fruit filtrate. *Tropical Animal Science Journal*. 45(2): 202–212.
- Svihus, B. 2011. The gizzard: Function, influence of diet structure and effects on nutrient availability. *Worlds Poultry Science Journal*. 67(2): 207–223.
- Tosi, G., P. Massi, M. Antongiovanni, A. Buccioni, S. Minieri, L. Marenchino, dan M. Mele. 2013. Efficacy test of a hydrolysable tannin extract against necrotic enteritis in challenged broiler chickens. *Ital Journal Animal Science*. 12(3): 386–389.
- Ulfah, M., L. Konservasi, E. S. Liar, D. Konservasi, S. Hutan, dan D. Ekowisata. 2006. The Potency of Medicinal Plants as A Multi Function Phytobiotic to Improve Performance and Health Condition of Wild Animals in Captivity. *Media Konservasi*. 11(3): 109–114.
- Wang, X., Y. Z. Farnell, E. D. Peebles, A. S. Kiess, K. G. S. Wamsley, dan W. Zhai. 2016. Effects of prebiotics, probiotics, and their combination on growth performance, small intestine morphology, and resident *Lactobacillus* of male broilers. *Poultry Science*. 95(6): 1332–1340.

- Windisch, W., K. Schedle, C. Plitzner, dan A. Kroismayr. 2008. Use of phytogetic products as feed additives for swine and poultry. *Journal of Animal Science*. 86(14): 140–148.
- Wiradimadja, R., W. Tanwiriah, dan D. Rusmana. 2015. Efek penambahan belimbing wuluh (*Averrhoa bilimbi* L.) dalam ransum terhadap performan, karkas, dan income over feed cost ayam kampung. *Jurnal Ziraa'ah*. 40(2): 86–91.
- Wu, G. 2018. *Principles of animal nutrition* (1st ed.). CRC Press. New York.
- Yegani, M., dan D. R. Korver. 2008. Factors affecting intestinal health in poultry. *Poultry Science*. 87(10): 2052–2063.
- Zuprizal., R. E. Indarto, N. D. Dono., A. P. Baskara., M. Kamal., L. M. Yusiati. 2023. *Nutrisi dan Metabolisme Ternak Unggas*. Deepublish. Yogyakarta.