DAFTAR PUSTAKA

Abdel –Rahem, S.M and Abd–Allah, S.M.S 2011. The effect of singer or combined diatery suplementattion of mannan oligosaccharide and probiotic on performance of slaughter characteristic of broilers. Internasonal Journal of Poultry Sciences, 10(11): 854-862.

Abdel-Hafeez, H. M., E. S. E. Saleh, S. S. Tawfeek, I. M. I. Youssef, and A. S. A. Abdel- Daim. 2017. Effects of probiotic, prebiotic, and synbiotic with and without feed restriction on performance, hematological indices and carcass characteristics of broiler chick ens. Asian-Australas. J. Anim. Sci. 30:672–682.

Arif, M., Akteruzzaman, M. D., Al-Ferdous, T., Shaheenur Islam, S. K., Bas, B. C., Siddique, M. P., Lutful Kabir, S. M. 2022. Dietary supplementation of Bacillus-based probiotics on the growth performance, gut morphology, intestinal microbiota and immune response in low biosecurity broiler chickens. Veterinary and Animal Science 14 (2021) 100216. Journal homepage: www.elsevier.com/locate/vas

Bozkurt, M.; Aysul, N.; Kucukyilmaz, K.; Aypak, S.; Ege, G.; Catli, A.U.; Aksit, H.; Coven, F.; Seyrek, K.; Cinar, M. Efficacy of in-feed preparations of an anticoccidial, multienzyme, prebiotic, probiotic, and herbal essential oil mixture in healthy and Eimeria spp.-infected broilers.Abdel Hafeez, H.M., E.S. Saleh., S.S. Tawfeek., I.M.I. Youssef and A.S.A. Abdel Daim. 2017. Effects of probiotic, prebiotic, and synbiotic with and without feed restriction on performance, hematological indices and carcass characteristics of broiler chickens. Asian-Australasian Journal. Animal. Sciences, 30 (5): 672-682.

Gussem, M. D. Broiler Signals: A Practical Guide to Broiler Focused Management. 2018. Vetbooks.Ir

Dong, Z. L. Wang, Y. W. Song, D. Hou, Y. J. Wang, W. W. Qi, W. T. Yun, T. T. Li, A. K. 2016. The effect of dietary supplementation of microencapsulated enterococcus fecalis and the extract of camellia oleifera seed on growth performance, intestinal morphology, and intestinal mucosal immune functions in broiler chickens. Animal Feed Science And Technology 212, 42-51.

Duan A-y, Ju A-q, Zhang Y-n, Qin Y-j, Xue L-g, Ma X, Luan W-m and Yang S-b (2021) The Effects of In Ovo Injection of Synbiotics on the Early Growth Performance and Intestinal Health of Chicks. Front. Vet. Sci. 8:658301. doi: 10.3389/fvets.2021.658301

Fadillah, R., Polana, A., Alam, S and Purwanto, E .2007. Sukses beternak ayam broiler (success farming in broiler chickens) Agromedia Pustaka., Malang. Pp. 110-120.

Fayed, R.H., Razek, A.H.A., Ouf, M., 2015. Effect of dietary garlic supplementation on performance, carcass traits, and meat quality in broiler chickens effect of dietary garlic supplementation on performance, carcass traits, and meat quality in broiler chickens. J. Parameters. 100, 1000–1004.

Froebel, L. K. Jalukar, S. Lavergne, T. A. Lee, J. T. Duong, T. 2019. Administration of dietary prebiotics improves growth performance and reduces pathogen colonization in broiler chickens. 2019 Poultry Science 98:6668–6676. http://dx.doi.org/10.3382/ps/pez537.

Gadde, U., W. H. Kim, S. T. Oh, and H. S. Lillehoj. 2017. Alternatives to antibiotics for maximizing growth performance and feed efficiency in poultry: a review. Anim. Health. Res. Rev. 18:26–45.

Giacomo., Biagi, C.G., Vecchiato., and Pinna, C. 2017. The Utilization of Prebiotics, Probiotics, Organic Acids and Antibiotics in Monogastric Animals" in 2nd International Conference on Sustainable Agriculture and Food Security: A Comprehensive Approach, KnE Life Sciences, 17: 55–62.

Gunal, M., Yayli, G., Kaya O., Karahan, N. Dan Sulak, O. (2006). The effect of antibiotics growth promotor, probiotic or organic acid suplementation on performance, intestinal microflora and tissue af Broilers. *Internasional Journal of Poultry Science* 5: 149-155.

Gyawali, I., Zeng, Y. Zhou, J. Li, J. Wu, T. Shu, G. Jiang, Q. Zhu, C. Effect of novel Lactobacillus paracaesi microcapsule on growth performance, gut health and microbiome community of broiler chickens. 2022 Poultry Science 101:101912.

Hamasalim, H. J. 2016. Symbiotic as feed additives relating to animal health and performance. Adv. Microb. 6:288–302.

Harimurti, S. dan Rahayu, E. S. Morfologi Usus Ayam Broiler Yang Disuplementasi. AGRITECH, Vol. 29, No. 3, Agustus 2009.

Hartono, E.F. Iriyanti, N. Suhermiyati, S. 2016. Efek Penggunaan Sinbiotik Terhadap Kondisi Miklofora dan Histologi Usus Ayam Sentul Jantan. Agripet Vol 16, No. 2.

He, T., S. Long, S. Mahfuz, D. Wu, X. Wang, X. Wei, and X. Piao. 2019. Effects of probiotics as antibiotics substitutes on growth performance, serum biochemical parameters, intestinal morphology, and barrier function of broilers. Animals 9:985.

Iji, P. A., R. J. Hughes, M. Choct and D. R. Tivey. 2001. Intestinal structure and function of broiler chickens on wheat-based diets supplemented with microbial enzyme. Asian-Aust. *J. Anim. Sci.* 14(1):54-60.

Iriyanti, N., Suhermiyati, S., Irianto, A and Hartoyo, B. 2015. Effect of Dietary Herbs as Feed Additif on Cholesterol Profile and Blood Metabolic Protein in Broiler Chicken. Seminar International AINI. Menado.

Jan, T., R. Negi, B. Sharma, D. Kour, S. Kumar, A. K. Rai, S. Rustagi, S. Singh, M. A. Sheikh, K. Kumar, N. Ahmed, and A. N. Yadav. 2023. Diversity, distribution and role of probiotics for human health: current research and future challenges. Biocatal. Agric. Biotechnol. 102889, doi:10.13140/RG.2.2.36596.12167.

Lhermie, G., Y. T. Grohn, and D. Raboisson. 2016. Addressing antimicrobial resistance: an overview of priority actions to prevent suboptimal antimicrobial use in food-animal production. Front. Microbiol. 7:2114.

Li, C. L., J. Wang, H. J. Zhang, S. G. Wu, Q. R. Hui, C. B. Yang, R. J. Fang, and G. H. Qi. 2018a. Intestinal morphologic and microbiota responses to dietary Bacillus spp. in a broiler chicken model. Front. Physiol. 9:1968.

Li, Z., Q. Guo, F. Lin, C. Li, L. Yan, H. Zhou, Y. Huang, B. Lin, B. Xie, Z. Lin, and Y. Huang. 2024. Lactobacillus plantarum supernatant inhibits growth of Riemerella anatipestifer and medi ates intestinal antimicrobial defense in Muscovy ducks. Poult. Sci. 103216:1–9.

Listyasari, N., Soeharsono., Purnama, MTE. 2022. Peningkatan bobot badan, konsumsi dan konversi pakan dengan pengaturan komposisi seksing ayam broiler jantan dan betina. Acta Veterinaria Indonesiana. 10(3): 275–280.

Lokapirnasari, W. P., T. B. Pribadi, A. A. Arif, S. Soeharsono, S. Hidanah, N. Harijani, R. Najwan, K. Huda, H. C. P. Wardhani, N. F. N. Rahman, and A. B. Yulianto. 2019. Potency of probiotics Bifidobacterium spp. and Lactobacillus casei to improve growth performance and business analysis in organic laying hens. Vet. World. 12:860–867.

Majid, W.N., Supratman, H., and Saefulhadjar, D. 2022. The Effect of New Probiotic Heryaki in Ration on Weight Gain and Feed Conversion Ratio in Broiler. Jurnal Nutrisi Ternak Tropis dan Ilmu Pakan. 4(2):59-65.

Marshall BM, Levy SB. Food animals and antimicrobials: impacts on human health. Clin Microbiol Rev 2011;24(4):718e33.

Mile, R.D., Buthcer, G.D., Henry, P.R. dan Littel, R.C (2006). Effect of antibiotic growth promoters on broiler performance, intestinal growth parameters, and quantitative morphology. *Journal of Poultry Science* 85: 476-485.

Min, Y. N., H. L. Yang, Y. X. Xu, and Y. P. Gao. 2016. Effects of die tary supplementation of synbiotics on growth performance, intesti nal morphology, sIgA content and antioxidant capacities of broilers. J. Anim. Physiol. Anim. Nutr. 100:1073–1080.

Mohamed, T.M., W. Sun., G.Z. Bumbie., D.M. Dosoki., Z. Rao, P. Hu., L. Wu and Z. Tang. 2022. Effect of dietary supplementation of *Bacillus subtilis* on growth performance, organ weight, digestive enzyme activities, and serum biochemical indices in broiler. Animals, 12(12), 1558.

Mohammed, A. A. Jacobs, J. A. Murugesan, G. R. Cheng, H. W. 2018. Effect of dietary synbiotic supplement on behavioral patterns and growth performance of broiler chickens reared under heat stress. Poultry Science 97, 1101-1108.

Mohammed, A., J. Hu, R. Murugesan, and H. W. Cheng. 2022. Effects of a synbiotic as an antibiotic alternative on behavior, production per formance, cecal microbial ecology, and jejunal histomorphology of broiler chickens under heat stress. Plos one 17:e0274179.

Obianwuna, U. E., K. Qiu, J. Wang, H. J. Zhang, G. H. Qi, L. L. Huang, and S. G. Wu. 2023. Effects of dietary Clostridium butyricum and fructooligosaccharides, alone or in combination, on performance, egg quality, amino acid digestibility, jejunal mor phology, immune function, and antioxidant capacity of laying hens. Front. Microbiol. 14:1125897.

Peng, Q.X., Zeng, F., Zhu, J.L., Wang, S., Liu, X.T., Hou, C.L., Thacker, P.A., Qiao, S.Y., 2016. Effects of Dietary Lactobacillus Plantarum B1 on Growth Performance, Intestinal Microbiota, and Short Chain Fatty Acid Profiles in Broiler Chickens. Poult. Sci. 16, 1–8.

Pourabedin, M., Z. Xu, B. Baurhoo, E. Chevaux, and X. Zhaoa. 2014. Effects of mannan oligosaccharide and virginiamycin on the cecal microbial community and intestinal morphology of chickens raised under suboptimal conditions. Can. J. Microbiol. 60:255–266.

Rahardja, D. P. Yusuf, M. Lestari, V. S. Hakim, M. R. 2021. Effects of pre-, pro-, and synbiotic supplementation on the growth performance and feed convertion rates of Indonesian native chicken – The offspring of *in ovo* L-gln fed hen. The 3rd International Conference of Animal Science and Technology. IOP conf. Series: Earth and Environment Science 788 (2021) 012090. doi: 10.1088/1755-1315/788/1/012090.

Rahardja, DP., M. Yusuf., I.K. Prahesti., S.L. Veronica. 2022. Efficacy of Early Nutrition Programming for Improving the Performance of Kampung Chicken. European Journal Veterinary Medical, 2(5): 9-15.

Rehman, A. Arif, M. Sajjad, N. Al-Ghadi, M. Q. Alagawany, M. Abd El-Hack, M. E. Alhimaidi, A. R. Elnesr, S. S. Almutairi, B. O. Amran, R. A. Hussain, E. O. S. Swelum, A. A. Dietary effect of probiotics and prebiotics on broiler performance, carcass, and immunity. 2020 Poultry Science 99:6946–6953. https://doi.org/10.1016/j.psj.2020.09.043.

Rehman, A., M. Arif , N. Sajjad., M.Q. Al Ghadi., M. Alagawani., M.E. Abd El Hack., A.R. Alhimaidi., S.S. Elnesr., B.O. Almutairi., R.A. Amran.,E.O.S. Hussein and A.A. Swelum. 2020. Dietary effect of probiotics and prebiotics on broiler performance, carcass, and immunity. Poultry. Sciences, 99(12): 6946–6953.

Ren, H. Vahjen, W. Dadi, T. Saliu, E. M. Zentek, J. 2019. Synergistic effect of probiotics and phytobiotics on the intestinal microbiota in young broiler chicken. Microorganisms 7, 684.

Rodde, C., Chatain, B., Vandeputte, M., Trinh, T.Q., Benzie, J.A.H., and Verdal, H. 2020. Can individual feed convertion ratio at commercial size be predicted from juvenile performance in individually reared nile tilapia Oreochoromis niloticus. Aquaqulture Resports, 17: 100349.

Safitri, E., Plumerastuti, H., 2023. Ayam Broiler Aspek Fisiologi Reproduksi & Patologinya. Airlangga University Press. ISBN: 978-602-473-985-0.

Santoso, H dan Sudaryani, T. 2011. Pembesaran Ayam Pedaging. Penebar Swadaya: Jakarta. 9.

Sieo, C.C., Abdullah, N., Tan, W.S dan Hot, Y.W. (2005). Influence of glucanase- producing lactobacili strains on intestinal characteristics and feed passage rate of broiler chickens. *Journal of Poultry Science* 84: 734-741.

Song, D. Li, A. Wang, Y. Song, G. Cheng, J. Wang, L. Li, K. Min, Y. Wang, W. 2022. Effects of synbiotic on growth, digestibility, immune and antioxidant performance in broilers. Animal the international journal of animal biosciences. https//doi.org/10.1016/j.animal.2022.100497.

SongJ, Xiao K, KeY L, Jiao LF, Hu CH, Diao QY,et al.Effect of a probiotic mixture on intestinal micro flora, morphology, and barrier integrity of broilers subjected to heat stress. Poult. Sci. 2014; 93:581 588. https://doi.org/10.3382/ps.2013-03455 PMID: 24604851

Steel, R. G. D. and Torrie, J. H. 1991. *Prinsip dan Prosedur Statistika*. Terjemahan B. Sumantri. Pt. Gramedia Pustaka Umum. Jakarta.

Sugiharto, S., 2016. Role of nutraceuticals in gut health and growth performance of poultry. J. Saudi Society Agricultural Sci. 15 (2), 99–111.

Sugiharto, S., Yudiarti, T., Isroli, I., Widiastuti, E., Wahyuni, H.I., 2018. Hematological parameters and selected intestinal microbiota populations in the Indonesian indigenous crossbred chickens fed basal diet supplemented with multi-strain probiotic preparation in combination with vitamins and minerals. Veterinary World 11 (6), 874–882.

Sumarsih, S. Sulistiyanto, B. Sutrisno, C. I. Rahayu, E. S. 2012. Peran Probiotik Bakteri Asam Laktat Terhadap Produktivitas Unggas. Jurnal Litbang Provinsi Jawa Tengah, Vol.10 No.1.

Sunu, P., Sunarti, D., Mahfudz, L. D., & Yunianto, V. D. (2021). Effect of synbiotic from Allium sativum and Lactobacillus acidophilus on hematological indices, antioxidative status and intestinal ecology of broiler chicken. Journal of the Saudi Society of Agricultural Sciences, 20(2), 103–110. https://doi.org/10.1016/j.jssas.2020.12.005

Tavaniello, S., D. De Marzo, M. Bednarczyk, M. Palazzo, S. Zejnelhoxha, M. Wu, M. Peng, K. Stadnicka, and G.Maiorano.2023. Influence of a commercial synbiotic administered in ovo and in-water on broiler chicken performance and meat .

Timmerman, H. M. Veldman, A. Van den elsen, E. Rombouts, F. M. Beynen, A. C. 2006. Mortality and Growth Performance of Broilers Given Drinking Water Supplemented with Chicken-Specific Probiotics. 2006 Poultry Science 85:1383–1388.

Ulfa, D, suyatno, A, and Dew,i YSK. 2021. pola dan kinerja kemitraan pada usaha peternakan ayan broiler dikabupaten kubu raya Kalimantan barat. Analisis kebijakan pertanian, 19(2): 67-77.

Umiarti, Apni T. 2020. Manajemen Pemeliharaan Broiler. Bali. Pustaka Larasan.

Wang, L., M. Lilburn, and Z. Yu. 2016. Intestinal microbiota of broiler chickens as affected by litter management regimens. Front. Microbiol. 7:1–12.

Wang, W., H. Cai, A. Zhang, Z. Chen, W. Chang, G. Liu, X. Deng, W. L. Bryden, and A. Zheng. 2020. Enterococcus faecium modulates the gut microbiota of broilers and enhances phosphorus absorption and utilization. Animals 10:1232.

Wang, X. & Gibson, G.R. (1993). Effects of the in vitro fermentation of oligofructose and inulin by bacteria growing in the human large intestine. J. Appl. Bacteriol., 75, 373–380.

Wang, Y., C. Heng, X. Zhou, G. Cao, L. Jiang, J. Wang, K. Li, D. Wang, and X. Zhan. 2021b. Supplemental Bacillus subtilis DSM 29784 and enzymes, alone or in combination, as alternatives for antibiotics to improve growth performance, digestive enzyme activity, anti-oxidative status, immune response and the intestinal barrier of broiler chickens. Br. J. Nutr. 125:494–507.

Winarsih, W. 2005. Pengaruh Probiotik dalam Pengendalian Salmonellosis Subklinis pada Ayam : Gambaran Patologis dan Performan. (Disertasi). Pascasarjana IPB. Bogor.

Wu, Z., K. Yang, A. Zhang, W. Chang, A. Zheng, Z. Chen, H. Cai, and G. Liu. 2021. Effects of Lactobacillus acidophilus on the growth performance, immune response, and intestinal barrier function of broiler chickens challenged with Escherichia coli O78. Poult. Sci. 100:101323.

Yang H, Paruch L, Chen XJ, van Eerde A, Skomedal H, Wang YL, Liu D, Clarke JL. Antibiotic application and resistance in swine production in China: current situation and future perspectives. Front Vet Sci 2019;6:136e44.

Youssef, I. M., Elsherbeni, A. I., Almuraee, A. A., Nass, N. M., Beyari, E. A., Alshammarii, N. M., Abdel-Ghany, A. M., Ahmed, E.-S. G., Nasr, S., Youssef, K. M., Salem, H. M., Abd El-Hack, M. E., & Saber, H. S. (2024). Influence of using synbiotics by various routes on Mandarah male chicks: intestinal bacterial counts, gut morphology and histological status. Poultry Science, 103(5), 103601. https://doi.org/10.1016/j.psj.2024.103601

Zainuddin. Masyitha, D. Fitriani. Sarayulis. Jalaluddin, M. Rahmi, E. Nasution, I. Gambaran Histologi Kelenjar Intestinal Pada Duodenum Ayam Kampung (Gallus domesticus), Merpati (Columba domesticus) Dan Bebek (Anser anser domesticus). Jurnal Medika Veterinaria. Vol. 10 No. 1, Februari 2016.

Zulfia, H. A. Safira, D. Mawarni, T. A. Saragih, H. T. Jurnal Veteriner. pISSN: 1411-8327; eISSN: 2477-5665. Terakreditasi Nasional, Dirjen Penguatan Riset dan Pengembangan, Kemenristek Dikti RI S.K. No. 36a/E/KPT/2016. Juni 2021 Vol. 22 No. 2 : 237 – 245. DOI: 10.19087/jveteriner.2021.22.2.237. online pada http://ojs.unud.ac.id/index.php/jvet.