

DAFTAR PUSTAKA

- Abu, M.H., O. J. Alabi, and E. Z. Jiya. 2023. Pellet Versus marsh: assessing the impact of feed forms on growth performance, nutrient digestibility, carcass characteristics and health of broiler chickens—A Review. *Nigerian Journal of Animal Science and Technology (NJAST)*. 6(1): 52-64.
- Aisyah, R. 2023. Preferensi konsumen dalam memilih daging ayam broiler di pasar tradisional kecamatan suwawa. *Prosiding Semnas Politani Pangkep*. 4: 375-379.
- Aloanis, A. A., dan V. I. Paat. 2024. *Buku Bahan Ajar Senyawa Bioaktif*. Penerbit Tahta Media.
- Amaya E., P. Becquet, S. Carné, S. Peris, and P. Miralles. 2014. Carotenoids in Animal Nutrition; FEFANA (European Union Association of Specialty Feed Ingredients and their Mixtures).
- Amrullah, D.T., N. Widodo, H. Khasanah, dan M. W. Jadmiko. 2024. Analisis performa produksi ayam broiler *strain* Cobb 500 dan Cobb 700 pada fase starter di kandang closed house PT DMC Malang. *Jurnal Peternakan Lingkungan Tropis*. 7(2): 7-13.
- Ananda, R.A., S. Bahri, dan I. Nirmala. 2022. Monitoring dan kontrol pemberian pakan pada peternakan unggas berbasis *internet of things*. *Coding Jurnal Komputer Dan Aplikasi*. 10(03):387-398.
- Anonim. 2025. Reptiles in The Vertebrate Integumentary System. Available at <https://www.britannica.com/science/integument/Reptiles>. Accession date 21st Jan 2026.
- Azizah, N. A., L. D. Mahfudz, dan D. Sunarti. 2017. Kadar lemak dan protein karkas ayam broiler akibat penggunaan tepung limbah wortel (*daucus carota l.*) dalam ransum. *Jurnal Sain Peternakan Indonesia*. 12(4): 389-396.
- Basuki, A. T., dan I. Nazaruddin. 2015. *Analisis statistik dengan spss*. Yogyakarta: Danisa Media.
- Bharathi, S., I. V. Raj, K. M. Lucy, S. Maya, A. R. Sreeranjini, V. N. Vasudevan, and C. Sunanda. 2019. Histological studies on the skin of broiler chicken. *J. Vet. Anim. Sci.* 50(2):117-121.
- Castaneda, M. D. P., E. M. Hirschler, and A. R. Sams. 2005. Skin pigmentation evaluation in broilers fed natural and synthetic pigment. *Poultry Science*. 84(1): 143-147.
- Cobb-Ventress. 2022. *Performance & Nutrition Supplement TM Cobb500 Broiler. Performance & Nutrition Supplement*.
- Dansou, D.M., H. Zhang, Y. Yu, H. Wang, C. Tang, Q. Zhao, Y. Qin, and J. Zhang. 2023. Carotenoid enrichment in eggs: From biochemistry perspective. *Animal Nutrition*. 14:315-333.
- Daryatmo, D., 2021. Performa ayam broiler pada jarak inlet yang berbeda di kandang tipe *closed housed*. *Aves: Jurnal Ilmu Peternakan*. 15(1):25-30.
- de Lisboa Dutra, J.L., A. P. Del Vesco, M. M. de Lima, M. S. Bastos, L. C.

- Santos, G. M. de Oliveira Junior, V. Ribeiro Júnior, A. A. Calderano, A. Corassa, and C. O. Brito. 2025. Effect of dietary energy and nutrient levels on performance and liver expression of respiratory chain genes in broiler chickens. *Archives of Veterinary Science*. 30(3): 1-7.
- Deng, S., W. Yang, S. Hu, L. Li, J. He, and G. Bian. 2025. Integrated Analysis of Carotenoid Metabolism, Lipid Profiles, and Gut Microbiota Reveals Associations Fundamental to Skin Pigmentation in Lingshan Chickens. *Animals*. 15(19):2832.
- EFSA Panel on Additives and Products or Substances used in Animal Feed (FEEDAP)., R. E. Villa, G. Azimonti, E. Bonos, H. Christensen, M. Durjava, B. Dusemund, R. Gehring, B. Glandorf, M. Kouba, and M. López-Alonso. 2024. Safety and efficacy of a feed additive consisting of lutein-rich extract of *Tagetes erecta* L. for turkeys for fattening (EW Nutrition). *EFSA Journal*. 22(10): 9027.
- EFSA Panel on Additives and Products or Substances used in Animal Feed (FEEDAP), 2016. Safety and efficacy of ethyl ester of β -apo-8'-carotenoic acid as a feed additive for poultry for fattening and poultry for laying. *EFSA Journal*. 14(4): 4439.
- European Food Safety Authority (EFSA). 2009. Safety of use of colouring agents in animal nutrition-Part III: β -apo-8'-carotenal, ethyl ester of β -apo-8'-carotenoic acid, lutein, zeaxanthin and concluding remarks. *EFSA Journal*. 7(5):1098.
- European Union. 2020. Commission implementing regulation (EU) 2020/1400 of 5 october 2020 concerning the authorisation of ethyl ester of β -apo-8'-carotenoic acid as a feed additive for chickens for fattening, laying hens and minor poultry species for laying and for fattening. *Official Journal of the European Union*. 324(6): 32-34.
- European Union. 2021. Commission implementing regulation (EU) 2021/420 of 9 march 2021 correcting implementing regulation (EU) 2020/1097 concerning the authorisation of lutein-rich and lutein/zeaxanthin extracts from *Tagetes erecta* as feed additives for poultry (except turkeys) for fattening and laying and for minor poultry species for fattening and laying (text with EEA relevance). *Official Journal of the European Union*. 83(10): 17-21.
- Garcia-Chavarria, M., and M. Lara-Flores. 2013. The use of carotenoid in aquaculture. *Research Journal of Fisheries and Hydrobiology*. 8(2): 38-49.
- Geng, T., S. Bao, X. Sun, D. Ma, H. Zhang, Q. Ge, X. Liu, and T. Ma. 2023. A clarification of concepts related to the digestion and absorption of carotenoids and a new standardized carotenoids bioavailability evaluation system. *Food Chemistry*. 400: 134060.
- Girsang, A., N. Setianto, dan N. Hidayat. 2023. Mortalitas, berat panen, dan *feed conversion ratio* pada usaha ayam broiler pt. Cemerlang unggas lestari. *Jurnal Riset Rumpun Ilmu Hewani*. 2(1):09-21.
- Hidayat, D.F., A. Widodo, D. Diyanoro, and M. G. A. Yuliani. 2020. The

- effect of providing fermented milk on the performance of gallus domesticus. *Journal Of Applied Veterinary Science And Technology*. 1(2):43-47.
- Ilham, N. 2023. Pengaruh Penggantian Sebagian Ransum Komersil Dengan Tepung Maggot (*Hermetia illucens*) Terhadap Pertumbuhan Ayam Broiler (*Gallus domesticus*). *Stock Peternakan*. 5(1):92-100.
- Jing, Y., Y. Wang, D. Zhou, J. Wang, J. Li, J. Sun, Y. Feng, F. Xin, and W. Zhang. 2022. Advances in the synthesis of three typical tetraterpenoids including β -carotene, lycopene and astaxanthin. *Biotechnology Advances*. 61: 108033.
- Karadas, F., S. Erdoğan, D. Kor, G. Oto, and M. Uluman. 2016. The effects of different types of antioxidants (Se, vitamin E and carotenoids) in broiler diets on the growth performance, skin pigmentation and liver and plasma antioxidant concentrations. *Revista Brasileira de Ciencia Avicola*. 18(1): 101-116.
- Kurnadi, B., M. Zali, dan H. Saleh. 2022. Elastisitas permintaan daging ayam broiler di pasar gading kabupaten sumenep. *Jurnal Peternakan Indonesia*. 24(1):104-109.
- Kurniawan, J., E. Tugiyanti, dan E. Susanti. 2021. The effect of additive feeding as a substitute for antibiotics against feed consumption and body weight gain broiler chicken. *Angon: Journal Of Animal Science And Technology*. 3(2):134-140.
- Lee, C. Y., B. D. Lee, J. C. Na, and G. An. 2010. Carotenoid accumulation and their antioxidant activity in spent laying hens as affected by polarity and feeding period. *Asian-Australasian Journal of Animal Sciences*. 23(6):799-805.
- Listyasari, N., dan M. T. E. Purnama. 2022. Peningkatan bobot badan, konsumsi dan konversi pakan dengan pengaturan komposisi seksing ayam broiler jantan dan betina. *Acta Veterinaria Indonesiana*. 10(3):275-280.
- Liu, G. D., G. Y. Hou, D. J. Wang, S. J. Lv, X. Y. Zhang, W. P. Sun, and Y. Yang. 2008. Skin pigmentation evaluation in broilers fed different levels of natural okra and synthetic pigments. *Journal of Applied Poultry Research*. 17(4):498-504.
- Lizana, R. R., O. Z. Mendoza, and C. V. Perales. 2020. Evaluation of tarsus pigmentation in chickens fed with different levels of xanthophyll pigment: A practical application of the CIELab system. *International Journal of Poultry Science*. 19(6):265-269.
- Lunardi, W. and A. F. Husen. 2023. Budi Daya Ayam Broiler. Edu Farmers International Foundation.
- Mahardika, C.B.D.P., W. Y. Pello, dan M. Pallo. 2020. Performa usaha kemitraan ayam ras pedaging. *Partner*. 25(1): 1270-1281.
- Maoka, T. 2011. Carotenoids in marine animals. *Marine Drugs*. 9(2): 278-293.
- Marounek, M., and A. Pebriansyah. 2018. Use of carotenoids in feed mixtures for poultry: a review. *Agricultura Tropica Et Subtropica*.

51(3):107-111.

- Martinez, D.A., J. T. Weil, N. Suesuttajit, C. Umberson, A. Scott, and C. N. Coon. 2022. The relationship between performance, body composition, and processing yield in broilers: A systematic review and meta-regression. *Animals*. 12(19): 2706.
- Marzuki, A. and B. Rozi. 2018. Pemberian pakan bentuk crumble dan mash terhadap produksi ayam petelur. *Jurnal ilmiah INOVASI*. 18(1): 29-34.
- Miao, Q., X. Si, Q. Zhao, H. Zhang, Y. Qin, C. Tang, and J. Zhang. 2024. Deposition and enrichment of carotenoids in livestock products: An overview. *Food Chemistry: X*. 21: 101245.
- Mihrani, M., A. Anzar, dan M. Azhar. 2022. Penggunaan ekstrak daun pandan wangi (*pandanus amaryllifolius*) pada air minum terhadap kualitas daging ayam broiler. *Jurnal Triton*. 13(2):264-271.
- Muwarni, R. (2010). *Broiler Modern*. Semarang: Widya Karya.
- Nabi, F., M. A. Arain, N. Rajput, M. Alagawany, J. Soomro, M. Umer, F. Soomro, Z. Wang, R. Ye, and J. Liu. 2020. Health benefits of carotenoids and potential application in poultry industry: A review. *Journal Of Animal Physiology And Animal Nutrition*. 104(6):1809-1818.
- Nolan, J. M., K. A. Meagher, A. N. Howard, R. Moran, D. I. Thurnham, and S. Beatty. 2016. Lutein, zeaxanthin and meso-zeaxanthin content of eggs laid by hens supplemented with free and esterified xanthophylls. *Journal of Nutritional Science*. 5(e1):1-10.
- Okur, O. D. 2019. Lutein and Zeaxanthin: health-friendly nutrients. *Karaelmas Fen ve Mühendislik Dergisi*. 9(1):56-61.
- Oroh, F. N., S. P. Pengamanan, dan G. V. Pandiangan. 2023. Perilaku konsumen daging ayam broiler di pasar tradisional dan modern. *Jambura Journal Of Animal Science*. 5(2): 58-65.
- Pasarin, D., dan C. Rovinaru. 2018. Sources of carotenoids and their uses as animal feed additives-a review. 40(2):74-85.
- Pérez-Vendrell, A. M., J. M. Hernandez, L. Llaurodo, J. Schierle, and J. Brufau. 2001. Influence of source and ratio of xanthophyll pigments on broiler chicken pigmentation and performance. *Poultry Science*. 80(3):320-326.
- Prananda, F., D. Kurnia, dan J. Jiyanto. 2021. Pertumbuhan bobot badan ayam breeding *strain* cobb 500 di PT. Charoen pokphand jaya farm 2 pekanbaru. *Journal of Animal Center (JAC)*. 3(2): 111-131.
- Purnamasari, D.K., S. Syamsuhaidi, S. Sumiati, and G. M. A. Alfian. 2022. Productivity and feed of laying hens by efficient use of concentrates: ayam ras petelur. *Jurnal Ilmu dan Teknologi Peternakan Indonesia (JITPI) Indonesian Journal of Animal Science and Technology*. 8(2): 112-119.
- Rahman, A., S. Hasan, Ruknuzzaman, and I. Rayhanul. 2018. A comparative study on the performance of cobb-500 and hybard classic broiler strains under farm condition. *Jurnal Of Agriculture And*

- Veterinary Sciences. 5(2): 104-123.
- Raita, S., L. Feldmane, Z. Kusnere, K. Spalvins, I. Kuzmika, I. Berzina, and T. Mika. 2023. Microbial carotenoids production: strains, conditions, and yield affecting factors. *Rigas Tehniskas Universitates Zinatniskie Raksti*. 27(1): 1027-1048.
- Rajput, N., M. Naeem, S. Ali, J. F. Zhang, L. Zhang, and T. Wang. 2013. The effect of dietary supplementation with the natural carotenoids curcumin and lutein on broiler pigmentation and immunity. *Poultry Science*. 92(5): 1177-1185.
- Rohim, M. N., V. P. Bintoro, dan I. Estiningdriati. 2016. Uji (warna, tekstur dan susut masak) daging dari ayam pedaging lohman yang diberi tepung daun kayambang (*salvinia molesta*) sebagai campuran pakan. *Jurnal Pengembangan Penyuluhan Pertanian*. 13(23):1-6.
- Safitri, E., dan H. Plumerastuti. 2023. Ayam broiler-aspek fisiologi reproduksi & patologinya. Airlangga University Press.
- Schaeffer, J.L., J. K. Tyczkowski, and P. B. Hamilton. 1988. Depletion of oxycarotenoid pigments in chickens and the failure of aflatoxin to alter it. *Poultry science*. 67(7): 1080-1088.
- Sekretariat Jendral Kementrian Pertanian. 2024. Outlook komoditas peternakan daging ayam ras pedaging. Pusat Data Dan Sistem Informasi Pertanian Sekretariat Jenderal Kementerian Pertanian. Jakarta.
- Sirri, F., N. Iaffaldano, G. Minelli, A. Meluzzi, M. P. Rosato, and A. Franchini. 2007. Comparative pigmentation efficiency of high dietary levels of apo-ester and marigold extract on quality traits of whole liquid egg of two strains of laying hens. *Journal of Applied Poultry Research*. 16(3): 429-437.
- Syukri, D. 2021. Pengetahuan Dasar Tentang Senyawa Karotenoid Sebagai Bahan Baku Produksi Produk Olahan Hasil Pertanian. Padang (ID): Andalas University Pers.
- Tuwaitan, N.W. 2023. Aditif Pakan Ruminansia. Cv. Patra Media Grafindo Bandung. Bandung.
- Ufie, E.K., D. Malle, dan S. C. H. Hehanussa. 2024. Hubungan konsumsi pakan dengan pertumbuhan dan konversi pakan broiler pada kemitraan PT Mitra Sinar Jaya. *Jurnal Agrosilvopasture-Tech*. 3(1): 134-145.
- Van het Hof, K.H., I. A. Bouwer, C. E. West, E. Haddeman, R. P. Steegers-Theunissen, M. van Dusseldorp, J. A. Weststrate, T. K. Eskes, and J. G. Hautvast. 1999. Bioavailability of lutein from vegetables is 5 times higher than that of β -carotene. *The American Journal Of Clinical Nutrition*. 70(2): 261-268.
- Wang, S., L. Zhang, J. Li, J. Cong, F. Gao, and G. Zhou. 2016. Effects of dietary marigold extract supplementation on growth performance, pigmentation, antioxidant capacity and meat quality in broiler chickens. *Asian-Australasian Journal Of Animal Sciences*. 30(1):71.
- Weaver, R. J., E. S. Santos, A. M. Tucker, A. E. Wilson, and G. E. Hill. 2018.

- Carotenoid metabolism strengthens the link between feather coloration and individual quality. *Nature communications*. 9(1): 73.
- Wei, Y., K. Qin, X. Qin, F. Song, and X. Xu. 2023. Effects of different types of xanthophyll extracted from marigold on pigmentation of yellow-feathered chickens. *Animal Bioscience*. 36(12):1853.
- Widiandini, D. A., R. M. N. Karim, A. Susilowati, C. A. Hadi, H. H. Gianina, Y. M. Siregar, S. H. Mufliha, dan G. A. Yuliani. 2022. Efek pemberian probiotik terhadap profil hematologi ayam kampung (*Gallus domesticus*). *Journal of Basic Medical Veterinary*. 11(1): 12-20.
- Xu, Y., C. R. Stark, P. R. Ferket, C. M. Williams, and J. Brake. 2015. Effects of feed form and dietary coarse ground corn on broiler live performance, body weight uniformity, relative gizzard weight, excreta nitrogen, and particle size preference behaviors. *Poultry Science*. 94(7): 1549-1556.
- Zainuddin, Z., E. Rahmi, M. Akmal, D. Masyitha, Ismail, Hamny, S. Pratiwi, and B. Zulkifli. 2024. Histology and histomorphometry of the skin in the ventral abdominal region of domestic fowl (*Gallus gallus domesticus*), duck (*Anas platyrhynchos*), and doves (*Columba livia*). *The International Journal of Tropical Veterinary and Biomedical Research*. 9(1):47-55.
- Zia-Ul-Haq, M., S. Dewanjee, and M. Riaz. 2021. Carotenoids: structure and function in the human body. Cham: Springer International Publishing. 16: 859.