

DAFTAR PUSTAKA

- Adomako, K., E. Asiedu, J. A. Hamidu, dan O. S. Olympio. 2020. The level of defective eggs among three strains of commercial egg-type chickens and its economic implications. *Ghanian Journal of Animal Science*. 11(1): 39-48.
- Agus, A., C. Hanim, M. A. Anas, dan A. Agussalim. 2022. Feed, animal and human health: designing functional egg. In 6th International Seminar of Animal Nutrition and Feed Science (ISANFS 2021) (hal. 313-319). Atlantis Press.
- Akbarian, A., J. Michiels, A. Golian, J. Buyse, Y. Wang, and S. De Smet. 2014. Gene expression of heat shock protein 70 and antioxidant enzymes, oxidative status, and meat oxidative stability of cyclically heat-challenged finishing broilers fed *Origanum compactum* and *Curcuma xanthorrhiza* essential oils. *Poultry science*. 93(8): 1930-1941.
- Akbarian, A., J. Michiels, J. Degroote, M. Majdeddin, A. Golian, dan S. D. Smet. 2016. Association between heat stress and oxidative stress in poultry; mitochondrial dysfunction and dietary interventions with phytochemicals. *Journal of Animal Science and Biotechnology*. 7(37): 1-14.
- Alagawany, M., S. S. Elnesr, M. R. Farag, R. Tiwari, M. I. Yattoo, K. Karthik, I. Michalak, dan K. Dhama. 2021. Nutritional significance of amino acids, vitamins and minerals as nutraceuticals in poultry production and health - a comprehensive review. *Veterinary Quarterly*. 41(1): 1-29.
- Alaraji, F. 2024. An innovative protocol to increase egg production of chicken layers. *PLOS ONE*. 19(6): 1-13.
- Albers, S., B. Beckert, M. C. Matthies, C. S. Mandava, R. Schuster, C. Seuring, M. Riedner, S. Sanyal, A. E. Torda, D. N. Wilson, dan Z. Ignatova. 2021. Repurposing tRNAs for nonsense suppression. *Nature Communications*. 12(3850): 1-10.
- Ali, A., M. Farooq, D. Altakrouni, S. M. Najimudeen, M. S. H. Hassan, I. M. Isham, A. A. Shalaby, R. A. Gallardo, dan M. F. A. Careem. 2024. Comparative pathogenicity of CA1737/04 and mass infectious bronchitis virus genotypes in laying chickens. *Frontiers in Veterinary Science*. 11(1): 1-17.
- Alkan, S., A. Galic, T. Karsli, dan K. Karabag. 2015. Effects of egg weight on egg quality traits in partridge (*Alectoris chukar*). *Journal of Applied Animal Research*. 43(4): 450-456.

- Allaily, A., R. Hanum, dan M. A. Yaman. 2024. The potential of azolla and maggot flour in fermented feed for poultry and their effect on the quality of hybrid chicken eggs. *IOP Conference Series: Earth and Environmental Science*. 1297(1): 1-9.
- Alotiby, A. 2024. Immunology of stress: a review article. *Journal of Clinical Medicine*. 13(21): 1-10.
- Amin, M., R. A. Putra, A. Suhardiani, R. Andriati, O. Yanuarianto, S. H. Dilaga, dan N. Muhammad. 2023. Kandungan mineral hijauan pakan yang diberikan kepada sapi bali di pulau lombok. *Jurnal Ilmu dan Teknologi Peternakan Indonesia*. 9(1): 1-8.
- Anene, D. O., Y. Akter, P. C. Thomson, P. Groves, dan C. J. O. Shea. 2020. Variation and association of hen performance and egg quality traits in individual early-laying ISA brown hens. *Animals*. 10(9): 1-14.
- Areco, V. A., R. Kohan, G. Talamoni, N. G. T. D. Talamoni dan M. E. P. Lopez. 2020. Intestinal Ca²⁺ absorption revisited: a molecular and clinical approach. *World Journal of Gastroenterology*. 26(24): 3344-3364.
- Areco VA, Kohan R, Talamoni G, Tolosa de Talamoni NG, Peralta López ME. Intestinal Ca²⁺ absorption revisited: A molecular and clinical approach. *World J Gastroenterol* 2020; 26(24): 3344-3364 [PMID: 32655262 DOI: 10.3748/wjg.v26.i24.3344]
- Ashrafi, A., H. Hamid, A. A. Sadeghi, dan M. Chamani. 2024. Effect of organic selenium supplementation on the antioxidant status, immune response, and the relative expression of IL-2 and IFN- γ genes in ewes during the hot season. *Biological Trace Element Research*. 202(5): 2052-2061.
- Aslani, B. A. dan S. Ghobadi. 2016. Studies on oxidants and antioxidants with a brief glance at their relevance to the immune system. *Life Sciences*. 146(1): 163-173.
- Ayalew, H., C. Xu, Q. Liu, J. Wang, T. Wassie, S. Wu, K. Qiu, G. Qi, dan H. Zhang. 2025. Maternal derived antibodies and avian β -defensins expression patterns and their correlation in the yolk sac tissue of different chicken breeds (*Gallus gallus*). *Poultry Science*. 104(2): 1-9.
- Azizah, N., H. H. Harmita, dan H. Suryadi. 2021. Production of organically selenium yeast by fermentation and analysis by atomic absorption spectrophotometry. *International Journal of Pharmaceutical Investigation*. 11(3): 278-282.
- Badan Pusat Statistik. 2023. Rata-Rata Konsumsi per Kapita Seminggu Beberapa Macam Bahan Makanan Penting, 2007-2023. Badan Pusat Statistik. Dilihat pada 5 Oktober 2024. (<https://www.bps.go.id/id/statistics-table/1/OTUwIzE=/rata-rata>)

[konsumsi-per-kapita-seminggu-beberapa-macam-bahan-makanan-penting--2007-2023.html](#)

- Bao, T., J. Yao, S. Zhou, Y. Ma, J. Dong, C. Zhang, dan Y. Mi. 2022. Naringin prevents follicular atresia by inhibiting oxidative stress in the aging chicken. *Poultry Science*. 101(7): 1-11.
- Bekele, B., B. Wolde, S. Abraham, D. H. Mesikel, W. Ayele, F. Tadesse, T. Lambore, dan H. Abebe. 2023. Body weight performance, egg production and egg quality trait of lohmann chicken genotype in wachemo university poultry farm under intensive management system. *Uttar Pradesh Journal of Zoology*. 44(8): 29-39.
- Bortsi, M. A., S. T. Baidoo, dan S. Amiteye. 2022. Assessment of consumers' perception of chicken eggs consumption and associated health implications in the volta region of ghana. *Nutrition and Metabolic Insights*. 15(1): 1-12.
- Brandt-Kjelsen, A., B. Salbu, A. Haug, dan J. Szpunar. 2017. *Poultry Science*. Intech. London.
- Bryden, W. L., X. Li, I. Ruhnke, D. Zhang, dan S. Shini. 2021. Nutrition, feeding and laying hen welfare. *Animal Production Science*. 61(10): 893-914.
- Buchner, J., R. Sitia, dan H. L. Svilenov. 2025. Understanding IgM structure and biology to engineer new antibody therapeutics. *BioDrugs*. 39(1): 347-357.
- Carrillo, C. A., C. B. Reyes, J. D. L. Mozos, N. D. Gasca, E. S. Rodriguez, A. I. G. Ruiz, dan A. B. R. Navarro. 2021. Relationship between bone quality, egg production and eggshell quality in laying hens at the end of an extended production cycle (105 weeks). *Animals*. 11(3): 1-12.
- Cebula, M., E. E. Schmidt, dan E. S. Arner. 2015. TrxR1 as a potent regulator of the Nrf2-Keap1 response system. *Antioxidants & Redox Signaling*. 23(10): 823-853.
- Chandimali, N., S. G. Bak, E. H. Park, H. J. Lim, Y. S. Won, E. K. Kim, S. I. Park, dan S. J. Lee. 2025. Free radicals and their impact on health and antioxidant defenses: a review. *Cell Death Discovery*. 11(19): 1-17.
- Chang, X., B. Wang, H. Zhang, K. Qiu, dan S. Wu. 2024. The change of albumen quality during the laying cycle and its potential physiological and molecular basis of laying hens. *Poultry Science*. 103(10): 1-11.
- Chaudhary, P., P. Janmeda, A. O. Docea, B. Yeskaliyeva, A. F. A. Razis, B. Modu, D. Calina, dan J. S. Rad. 2023. Oxidative stress, free radicals and antioxidants: potential crosstalk in the pathophysiology of human diseases. *Frontiers in Chemistry*. 11(1): 1-24.

- Chen, Y., H. He, X. Bi, Y. Zhang, dan H. Yin. 2024. Effects of various selenium-enriched yeasts, selenomethionine, and nanoselenium on production performance, quality, and antioxidant capacity in laying hens. *Poultry Science*. 103(3): 1-8.
- Chen, Y., S. Yu, L. Zhang, M. Xiao, dan L. An. 2023. Effects and mechanisms investigation of heat stress on egg yolk quality in huaixiang chickens. *Animals*. 13(22): 1-13.
- Chen, Y., Z. Hao, Z. Lv, Z. Ning, Y. Gu, dan J. Yuan. 2025. Comparative effects of organic and nano-selenium on egg quality and antioxidant capacity in layer hens. *Foods*. 14(9): 1-12.
- Cherian, G. dan N. Quezada. 2016. Egg quality, fatty acid composition and immunoglobulin Y content in eggs from laying hens fed full fat camelina or flax seed. *Journal of Animal Science and Biotechnology*. 7(1): 1-8.
- Chueh, C. C., L. J. Lin, W. C. Lin, S. H. Huang, M. S. Jan, S. C. Chang, S. C., and T. T. Lee. 2019. Antioxidant capacity of banana peel and its modulation of Nrf2-ARE associated gene expression in broiler chickens. *Italian Journal of Animal Science*. 18(1): 1394-1403.
- Cousins, R. J. 1999. Nutritional regulation of gene expression. 106(1): 20-23.
- Dai, D., L. Gao, Y. Pan, C. Chen, K. Ma, H. Zhang, S. Wu, G. Qi, dan J. Wang. 2025. Eggshell depigmentation in the late phase of production is associated with altered Microbiota and Metabolism of the uterus in laying hens. *Poultry Science*. 104(8): 1-11.
- Damaziak, K., M. Kieliszek, dan M. Buclaw. 2020. Characterization of structure and protein of vitelline membrane of precocial (ring-necked pheasant, gray partridge) and superaltricial (cockatiel parrot, domestic pigeon) birds. *PLoS ONE*. 15(1): 1-24.
- Dazhi, T., W. Jianmin, J. Hongchao, W. Xiaojuan, Z. Jingpeng, dan L. Hai. 2019. The development of antioxidant system in the intestinal tract of broiler chickens. *Poultry Science*. 98(2): 664-678.
- Delezie, E., M. Rovers, A. V. D. Aa, A. Ruttens, S. Wittoox, dan L. Segers. 2014. Comparing responses to different selenium sources and dosages in laying hens. *Poultry Science*. 93(12): 3083-3090.
- Derese, D. B., L. Lu, dan F. Shi. 2024. Major regulatory factors for reproductive performances of female chickens. *Asian Pacific Journal of Reproduction*. 13(5): 197-206.
- Duman, M., A. Sekeroglu, A. Yildirim, H. Eleroglu, dan O. Camci. 2016. Relation between egg shape index and egg quality. *European Poultry Science*. 80(1): 1-9.

- Evanuarini, H., I. Thohari, dan A. R. Safitri. 2021. Industri Pengolahan Telur. UB Press. Malang.
- Fadhilah, A., M. Hartono, L. Liman, dan P. E. Santosa. 2023. Pengaruh pemberian kombinasi vitamin E, selenium dan zinc melalui air minum terhadap titer antibodi ND dan AI pada ayam kampung jantan. *Jurnal Riset dan Inovasi Peternakan*. 7(1): 40-47.
- Fadillah, F. 2022. Pengaruh nutrisi pakan komersil terhadap kualitas telur ayam ras (*Gallus domesticus*) pada peternak ayam di kecamatan samarinda utara. *Jurnal Peternakan Lingkungan Tropis*. 5(1): 36-44.
- Ferreira, R. L. U., K. C. M. S. Evangelista, E. P. D. Azevedo, F. I. Pinheiro, R. N. Cobucci, dan L. F. C. Pedrosa. 2021. Selenium in human health and gut microflora: bioavailability of selenocompounds and relationship with diseases. *Frontiers in Nutrition*. 8(1): 1-19.
- Fitriyani, S., K. Praseno, dan S. Tana¹. 2014. Pemberian kombinasi mikromineral (Cu, Fe, Zn, Co) dan vitamin (A, B1, B12, C) melalui drinking water terhadap pertumbuhan puyuh (*Coturnix-coturnix japonica* L). *Jurnal Biologi*. 3(3): 75-81.
- Fisinin, V. I., T. T. Papazyan, dan P. F. Surai. 2009. Producing selenium-enriched eggs and meat to improve the selenium status of the general population. *Critical Reviews in Biotechnology*. 29(1): 18-28.
- Fu, Y., J. Zhou, M. Schroyen, H. Zhang, S. Wu, G. Qi, dan J. Wang. 2024. Decreased eggshell strength caused by impairment of uterine calcium transport coincide with higher bone minerals and quality in aged laying hens. *Journal of Animal Science and Biotechnology*. 15(37): 1-20.
- Gan, L., H. Fan, W. Nie, dan Y. Guo. 2018. Ascorbic acid synthesis and transportation capacity in old laying hens and the effects of dietary supplementation with ascorbic acid. *Journal of Animal Science and Biotechnology*. 9(71): 1-12.
- Godbert, S. R., N. Guyot, dan Y. Nys. 2019. The golden egg: nutritional value, bioactivities, and emerging benefits for human health. *Nutrients*. 11(3): 1-26.
- Goyani, P., R. Christodoulou, dan E. Vassiliou. 2024. Immunosenescence: aging and immune system decline. *Vaccines*. 12(12): 1-13.
- Groenendyk, J. dan M. Michalak. 2023. Interplay between calcium and endoplasmic reticulum stress. *Cell Calcium*. 113(1): 1-9.
- Grzegorzewska, A. K., D. Wolak, dan A. Hrabia. 2024. Effect of tamoxifen treatment on catalase (CAT) and superoxide dismutase (SOD) expression and localization in the hen oviduct. *Theriogenology*. 214(1): 73-80.

- Gu, Y. F., Y. P. Chen, R. Jin, C. Wang, C. Wen, and Y. M. Zhou. 2021. A comparison of intestinal integrity, digestive function, and egg quality in laying hens with different ages. *Poultry Science*. 100(3): 1-8.
- Gu, Y. F., Y. P. Chen, R. Jin, C. Wang, C. Wen, and Y. M. Zhou. 2021. Age-related changes in liver metabolism and antioxidant capacity of laying hens. *Poultry Science*. 100(12): 1-8.
- Guni, F. S., S. H. Mbagha, A. M. Katule, dan E. H. Goromela. 2021. Effects of breed and management system on egg quality traits of two improved dual-purposes chicken breeds. *Livestock Research for Rural Development*. 33(12).
- Guo, J., X. Huang, L. Dou, M. Yan, T. Shen, W. Tang, dan J. Li. 2022. Aging and aging-related diseases: from molecular mechanisms to interventions and treatments. *Signal Transduction and Targeted Therapy*. 7(391): 1-40.
- Han, X. J., P. Qin, W. X. Li, Q. G. Ma, C. Ji, J. Y. Zhang, dan L. H. Zhao. 2017. Effect of sodium selenite and selenium yeast on performance, egg quality, antioxidant capacity, and selenium deposition of laying hens. *Poultry Science*. 96(11): 3973-3980.
- Han, Y., H. Gao, J. Xu, J. Luo, B. Han, J. Bao, G. Pan, T. Li, dan Z. Zhou. 2020. Innate and adaptive immune responses against microsporidia infection in mammals. *Frontiers in Microbiology*. 11(1): 1-11.
- Handy, D. E. dan J. Loscalzo. 2022. The role of glutathione peroxidase-1 in health and disease. *Free Radical Biology and Medicine*. 188(1): 146-161.
- Hanusova, E., C. Hrncar, A. Hanus, dan M. Oravcova. 2015. Effect of breed on some parameters of egg quality in laying hens. *Acta Fytotechnica et Zootechnica*. 18(1): 20-24.
- Haryuni, N., H. Hartutik, E. Widodo, dan S. Wahjuningsih. 2022. Effect of energy and dose of vitamin E selenium on improving the reproduction performance of joper brood stock. *The 2nd International Conference on Environmentally Sustainable Animal Industry (The 2nd ICESAI 2021)*. 335(1): 1-10.
- Hassan, M. S. H. dan M. F. A. Careem. 2020. Review: avian viruses that impact table egg production. *Animals*. 10(10): 1-13.
- Hee, H. L., N. Abdullah, M. Hamid, dan Y. W. Ho. 2017. Production of IgY by layers injected with *Salmonella typhimurium*. *Malaysian Journal of Animal Science*. 20(1): 45-57.
- Huang, J. Q., D. L. Li, H. Zhao, L. H. Sun, X. J. Xia, K. N. Wang, X. Luo, dan X. G. Lei. 2011. The selenium deficiency disease exudative diathesis in chicks is associated with down regulation of seven common selenoprotein genes in liver and muscle 1-3. *The Journal of*

- Nutrition: Biochemical, Molecular, and Genetic Mechanisms. 141(9): 1605-1610.
- Huang, J., L. Xie, A. Song, A., dan C. Zhang. 2022. Selenium status and its antioxidant role in metabolic diseases. *Oxidative Medicine and Cellular Longevity*. 2022(1): 1-15.
- Huang, Q., S. Wang, X. Yang, X. Han, Y. Liu, N. A. Khan, dan Z. Tan. 2023. Effects of organic and inorganic selenium on selenium bioavailability, growth performance, antioxidant status and meat quality of a local beef cattle in china. *Frontiers in Veterinary Science*. 10(1): 1-11.
- Huang, Z., H. Dai, J. Jiang, N. Ye, S. Zhu, Q. Wei, Z. Lv, dan F. Shi. 2022. Dietary mulberry-leaf flavonoids improve the eggshell quality of aged breeder hens. *Theriogenology*. 179(1): 177-186.
- Hussain, C. N. B. 2017. Isolation and estimation of chicken immunoglobulins (IgY) from egg yolk by optimizing polyethylene glycol (PEG) precipitation method. *Scholars Journal of Agriculture and Veterinary Sciences*. 4(7): 286-292.
- Ibrahim, D. , A. T. Y. Kishawy, S. I. Khater, A. H. Arisha, H. A. Mohammed, A. S. Abdelaziz, G. I. A. El-Rahman, dan M. T. Elabbasy. 2019. Effect of dietary modulation of selenium form and level on performance, tissue retention, quality of frozen stored meat and gene expression of antioxidant status in ross broiler chickens. *Animals*. 9(6): 1-19.
- Ichikawa, A., T. Toyama, H. Taguchi, S. Shiina, H. Takashima, K. Takahashi, Y. Ogra, A. Mizuno, K. Arisawa, dan Y. Saito. 2025. The selenoprotein P/ApoER2 axis facilitates selenium accumulation in selenoprotein P-accepting cells and confers prolonged resistance to ferroptosis. *Redox Biology*. 83(1): 1-11.
- Ighodaro, O. M. dan O. A. Akinloye. 2018. First line defence antioxidants-superoxide dismutase (SOD), catalase (CAT) and glutathione peroxidase (GPX): Their fundamental role in the entire antioxidant defence grid. *Alexandria Journal of Medicine*. 54(4): 287-293.
- Irma, I., F. Fathul, dan Y. Widodo. 2012. Identifikasi kandungan mineral (Na, K, Cl, S) tanaman air kiambang (*Salvinia molesta*) di Waduk Batu Tegi Kecamatan Air Nainingan Kabupaten Tanggamus. *Jurnal Ilmiah Peternakan Terpadu*. 1(1): 1-4.
- Jayani, R. A., K. A. Kamil, dan A. Mushawwir. 2015. Profil urea dan asam urat darah ayam petelur fase layer pada temperature humidity index yang berbeda. *Students e-Journal*. 4(1): 1-6.
- Jemiseye, F. O., O. A. Ogunwole, A. O. Mosuro, B. S. Adedeji, dan O. O. Alonge. 2021. Quality of eggs from laying hens fed supplemental selenium and α -tocopherol. *Nigerian Journal of Animal Production*. 1(1): 375-379.

- Jomova, K., R. Raptova, S. Y. Alomar, S. H. Alwasel, E. Nepovimova, K. Kuca, dan M. Valko. 2023. Reactive oxygen species, toxicity, oxidative stress, and antioxidants: chronic diseases and aging. *Archives of Toxicology*. 97(10): 2499-2574.
- Jomova, K., S. Y. Alomar, S. H. Alwasel, E. Nepovimova, K. Kuca, dan M. Valko. 2024. Several lines of antioxidant defense against oxidative stress: antioxidant enzymes, nanomaterials with multiple enzyme-mimicking activities, and low-molecular-weight antioxidants. *Archives of Toxicology*. 98(1): 1323-1367.
- Joshi, N., T. G. Wandita, S. Yang, H. Park, dan S.G. Hwang. 2019. Effects of supplementing laying hens with purified amino acid prepared from animal blood. *Tropical Animal Science Journal*. 42(1): 46-52
- Khaleel, R. M. T. 2019. Prediction of haugh unit through albumen height and egg weight. *Mesopotamia Journal of Agriculture*. 47(3): 37-43.
- Khatlab, A. D. S., A. P. D. Vesco, A. R. D. O. Neto, R. P. M. Fernandes, dan E. Gasparino. 2019. Dietary supplementation with free methionine or methionine dipeptide mitigates intestinal oxidative stress induced by *Eimeria* spp. challenge in broiler chickens. *Journal of Animal Science and Biotechnology*. 10(1) :1-17
- Ketta, M. dan E. Tumová. 2016. Eggshell structure, measurements, and quality-affecting factors in laying hens: a review. *Czech Journal of Animal Sciences*. 61(7): 299-309.
- Kim, H. R., C. H. Ryu, S. D. Lee, J. H. Cho, dan H. K. Kang. 2024. Effects of heat stress on the laying performance, egg quality, and physiological response of laying hens. *Animals*. 14(7): 1-12.
- Kim, Y. B., S. H. Lee, D. H. Kim, dan K. W. Lee. 2022. Effects of dietary methyl sulfonyl methane and selenium on laying performance, egg quality, gut health indicators, and antioxidant capacity of laying hens. *Animal Bioscience*. 35(10): 1566-1574.
- Kowalczyk, J., M. Smialek, B. Tykalowski, D. Dziewulska, T. Stenzel, dan A. Koncicki. 2019. Field evaluation of maternal antibody transfer from breeder turkey hens to egg yolks, egg whites, and poults. *Poultry Science*. 98(8): 3150-3157.
- Łacka, I. K., B. Słowikowski, T. Piekut, M. Hurła, N. Banaszek, O. Szymanowicz, P. P. Jagodzinski, W. Kozubski, A. P. Pachuta, dan J. Dorszewska. 2023. Disorders of endogenous and exogenous antioxidants in neurological diseases. *Antioxidants*. 12(10): 1-28.
- Larson, E. A., Z. Zhao, K. S. B. Larsen, dan F. Magkos. 2024. Egg consumption and growth in children: a meta-analysis of interventional trials. *Frontiers in Nutrition*. 10(1): 1-9.

- Li, C., T. Jiang, M. Li, Y. Zou, dan Y. Yan. 2022. Fine-tuning gene expression for improved biosynthesis of natural products: from transcriptional to post-translational regulation. *Biotechnology Advances*. 54(1): 1-10.
- Li, Q., Y. Zhao, M. D. Chordia, X. Xia, B. Zhang, dan H. Zheng. 2025. Enhanced prediction of antigen and antibody binding interface using ESM-2 and Bi-LSTM. *Human Immunology*. 86(3): 1-10.
- Li, Y., T. Mu, R. Li, S. Miao, H. Jian, X. Dong, dan X. Zou. 2024. Effects of different selenium sources and levels on the physiological state, selenoprotein expression, and production and preservation of selenium-enriched eggs in laying hens. *Poultry Science*. 103(2): 1-13.
- Liu, H., Q. Yu, C. Fang, S. Chen, X. Tang, K. M. Ajuwon, dan R. Fang. 2020. Effect of selenium source and level on performance, egg quality, egg selenium content, and serum biochemical parameters in laying hens. *Foods*. 9(1): 1-9.
- Liu, J. C., K. Zhang, X. Zhang, F. Guan, H. Zeng, M. Kubo, P. Lee, F. Candotti, L. K. James, N. O. S. Camara, K. Benlagha, J. H. Lei, H. Forsman, L. Yang, W. Xiao, Z. Liu, dan C. H. Liu. 2024. Immunoglobulin class-switch recombination: Mechanism, regulation, and related diseases. *MedComm*. 5(8): 1-22.
- Liu, Y. C., T. H. Chen, Y. C. Wu, dan F. J. Tan. 2017. Determination of the quality of stripe-marked and cracked eggs during storage. *Asian-Australasian Journal of Animal Sciences*. 30(7): 1013-020.
- Liu, Z., Y. Cao, Y. Ai, G. Lin, X. Yin, L. Wang, M. Wang, B. Zhang, K. Wu, Y. Guo, dan H. Han. 2023. Effects of selenium yeast on egg quality, plasma antioxidants, selenoproteins deposition and eggshell formation in ages laying hens. *Animals*. 13(5): 1-21.
- Livak, K. J. dan T. D. Schmittgen. 2001. Analysis of relative gene expression data using real-time quantitative PCR and the 2- $\Delta\Delta$ CT method. *Methods*. 25(4): 402-408.
- Lu, J., L. Qu, M. Ma, Y. F. Li, X. G. Wang, Z. Yang, dan K. H. Wang. 2020. Efficacy evaluation of selenium-enriched yeast in laying hens: effects on performance, egg quality, organ development, and selenium deposition. *Poultry Science*. 99(11): 6267-6277.
- Lv, L., H. Zhang, Z. Liu, L. Lei, Z. Feng, D. Zhang, Y. Ren, dan S. Zhao. 2020. Comparative study of yeast selenium vs. sodium selenite on growth performance, nutrient digestibility, anti-inflammatory and anti-oxidative activity in weaned piglets challenged by *Salmonella typhimurium*. *Innate Immunity*. 26(4): 248-258.

- Lv, Y., M. Sun, Y. He, X. Zhang, Y. Min, L. Liu, dan W. Yu. 2025. Effects of induced molting on lipid accumulation in liver of aged laying hens. *Poultry Science*. 104(4): 1-12.
- Mangiapine, E., A. Pessione, dan E. Pessione. 2014. Selenium and selenoproteins: an overview on different biological systems. *Current Protein and Peptide Science*. 15(6): 598-607.
- Markovic, R., M. Glisic, M. Boskovic, dan M. Z. Baltic. 2017. New scientific challenges - the possibilities of using selenium in poultry nutrition and impact on meat quality. *IOP Conf. Series: Earth and Environmental Science*, 59th International Meat Industry Conference MEATCON2017. 85(1): 1-6.
- Marshall, J. S., R. Warrington, W. Watson, dan H. L. Kim. 2018. An introduction to immunology and immunopathology. *Allergy, Asthma & Clinical Immunology*. 14(49): 5-14.
- Martemucci, G., C. Costagliola, M. Mariano, L. D. Andrea, P. Napolitano, dan A. G. D. Alessandro. 2022. Free radical properties, source and targets, antioxidant consumption and health. *Oxygen*. 2(2): 48-78.
- Metheenukul, P., W. Surachetpong, N. Prasertsincharoen, P. Arreesrisom, dan N. Thengchaisri. 2024. Comparison of immunoglobulin Y antibody production in new and spent laying hens. *Veterinary World*. 17(9): 2177-2184.
- Minich, W. B. 2022. Review: selenium metabolism and biosynthesis of selenoproteins in the human body. *Biochemistry (Moscow)*. 87(1): S168-S177.
- Miranda, J. M., X. Anton, C. R. Valbuena, P. R. Saavedra, J. A. Rodriguez, A. Lamas, C. M. Franco, dan A. Cepeda. 2015. Egg and egg-derived foods: effects on human health and use as functional foods. *Nutrients*. 7(1): 706-729.
- Mitsis, T., A. Efthimiadou, F. Bacopoulou, D. Vlachakis, G. P. Chrousos, dan E. Eliopoulos. 2020. Transcription factors and evolution: an integral part of gene expression. *World Academy of Sciences Journal*. 2(1): 3-8.
- Mizuno, A., T. Toyama, A. Ichikawa, N. Sakai, Y. Yoshioka, Y. Nishito, R. Toga, H. Amesaka, T. Kaneko, K. Arisawa, R. Tsutsumi, Y. Mita, S. Tanaka, N. Noguchi, dan Y. Saito. 2023. An efficient selenium transport pathway of selenoprotein P utilizing a high-affinity ApoER2 receptor variant and being independent of selenocysteine lyase. *Journal of Biological Chemistry*. 299(8): 1-17.
- Moghadam, A. R. E., M. T. Moghadam, M. Hemadi, dan G. Saki. 2022. Oocyte quality and aging. *JBRA Assisted Reproduction*. 26(1): 105-122.

- Mohammadsadeghi, F., M. Afsharmanesh, M. Salarmoini, dan M. K. Bami. 2023. The effect of replacing sodium selenite with selenium-chitosan in laying hens on production performance, egg quality, egg selenium concentration, microbial population, immunological response, antioxidant enzymes, and fatty acid composition. *Poultry Science*. 102(10): 1-17.
- Morris, G., M. Gevezova, V. Sarafian, dan M. Maes. 2022. Redox regulation of the immune response. *Cellular & Molecular Immunology*. 19(10): 1079-1101.
- Muhammad, A. I., D. A. Mohamed, L. T. Chwen, H. Akit, dan A. A. Samsudin. 2021. Effect of selenium sources on laying performance, egg quality characteristics, intestinal morphology, microbial population and digesta volatile fatty acids in laying hens. *Animals*. 11(6): 1-23.
- Myers, M. dan C. H. S. Ruxton. 2023. Eggs: healthy or risky? a review of evidence from high quality studies on hen's eggs. *Nutrients*. 15(12): 1-28.
- Nadia, R., S. Sumiati, dan T. Suryati. 2022. Effect of vitamin E supplementation and storage duration on egg physical quality of IPB-D2 candidate chicken strain. *International Conference on Agriculture and Applied Science (ICoAAS)*. 1(1): 98-106.
- Nasri, H., H. V. D. Brand, T. Najjar, dan M. Bouzouaia. 2020. Egg storage and breeder age impact on egg quality and embryo development. *Journal of Animal Physiology and Animal Nutrition*. 104(1): 257-268.
- Ningtiyas, W. D., A. N. Mukhlisah, S. P. Syah, M. Irfan, S. A. Rab, dan A. Mutmainna. 2024. Internal quality of layer eggs from traditional market majene. *Jurnal Ilmu Produksi dan Teknologi Hasil Peternakan*. 12(1): 34-38.
- Obianwuna, U. E., V. U. O. Okoleh, J. Wang, H. J. Zhang, G. H. Qi, K. Qiu, dan S. G. Wu. 2022. Natural products of plants and animal origin improve albumen quality of chicken eggs. *Frontiers in Nutrition*. 9(1): 1-19.
- Oke, O. E., O. A. Akosile, A. I. Oni, I. O. Opowoye, C. A. Ishola, J. O. Adebisi, A. J. Odeyemi, B. A. Mensah, V. A. Uyanga, dan M. O. Abioja. 2024. Oxidative stress in poultry production. *Poultry Science*. 103(9): 1-22.
- Palupi, R., F. N. L. Lubis, S. Sandi, A. R. Arjuna, C. Satori, dan M. Nurrahmadani. 2022. Pengaruh suplementasi kalsium butirat dalam ransum terhadap pencernaan nutrisi, performa produksi dan kualitas telur ayam umur 75 minggu. *Livestock and Animal Research*. 20(1): 59-68.

- Patimah, T. dan H. Burhanuddin. 2020. Pengaruh penambahan ekstrak *Centella asiatica* L. terhadap jumlah leukosit dan diferensiasi leukosit ayam petelur. *Jurnal Nutrisi Ternak Tropis dan Ilmu Pakan*. 2(4): 234-241.
- Pawelec, G. 2018. Age and immunity: What is “immunosenescence”? *Experimental Gerontology*. 105(1): 4-9.
- Peng, C., Z. Li, dan X. Yu. 2021. The role of pancreatic infiltrating innate immune cells in acute pancreatitis. *International Journal of Medical Sciences*. 18(2): 534-545.
- Peric, L., M. D. Stojcic, dan S. Bjedov. 2017. The effect of storage and age of hens on the quality of table eggs. *Advanced Research in Life Sciences*. 1(1): 64-67.
- Petrujkic, B. T., D. S. Sefer, I. B. Jovanovic, M. Jovicin, S. Jankovic, G. Jakovljevic, R. C. Beier, dan R. C. Anderson. 2014. Effects of commercial selenium products on glutathione peroxidase activity and semen quality in stud boars. *Animal Feed Science and Technology*. 197(1): 194-205.
- Pilarczyk, B., A. T. Marciniak, R. Pilarczyk, J. Kuba, D. Hendzel, J. Udała, dan Z. Tarasewicz. 2019. Eggs as a source of selenium in the human diet. *Journal of Food Composition and Analysis*. 78(1): 19-23.
- Prytkov, Y. N., A. A. Kistina, dan M. Y. Chervyakov. 2016. Influence of different dosages of selenium yeast in the diets of laying hens cross lohmann brown on metabolic indices and egg productivity. *Biosciences Biotechnology Research Asia*. 13(2): 991-997.
- Puspitaningrum, I., L. Kusmita, dan Y. Franyoto. 2017. Aktivitas imunomodulator fraksi etil asetat daun som jawa (*Talinum triangulare* (Jacq.) Willd) terhadap respon imun non spesifik. *Jurnal Ilmu Farmasi dan Farmasi Klinik*. 14(1): 24-29.
- Rad, M. S., N. V. A. Kumar, P. Zucca, E. M. Varoni, L. Dini, E. Panzarini, J. Rajkovic, P. V. T. Fokou, E. Azzini, I. Peluso, A. P. Mishra, M. Nigam, Y. E. Rayess, M. E. Beyrouthy, L. Polito, M. Iriti, N. Martins, M. Martorell, A. O. Docea, W. N. Setzer, D. Calina, W. C. Cho, dan J. S. Rad. 2020. Lifestyle, oxidative stress, and antioxidants: back and forth in the pathophysiology of chronic diseases. *Frontiers in Physiology*. 11(694): 1-21.
- Ramakrishnan, S. dan D. Kappala. 2019. Avian infectious bronchitis virus. *Recent Advances in Animal Virology*. 16(1): 301-319.
- Reyes, C. B., E. Folegatti, N. D. Gasca, G. Litta, E. S. Rodriguez, A. B. R. Navarro, dan M. U. Faruk. 2021. Research note: changes in eggshell quality and microstructure related to hen age during a production cycle. *Poultry Science*. 100(9): 1-5.

- Qin, B., Z. Li, M. A. K. Azad, T. Chen, Y. Cui, W. Lan, H. Wang, dan X. Kong. 2024. Fermented blueberry pomace supplementation improves egg quality, liver synthesis, and ovary antioxidant capacity of laying hens. *Poultry Science*. 103(12): 1-14.
- Qiu, K., J. J. Zheng, U. E. Obianwuna, J. Wang, H. J. Zhang, G. H. Qi, dan S. G. Wu. 2021. Effects of dietary selenium sources on physiological status of laying hens and production of selenium enriched eggs. *Frontiers in Nutrition*. 8(1): 1-11.
- Qiu, K., Y. Ma, U. E. Obianwuna, J. Wang, H. Zhang, G. Qi, dan S. Wu. 2021. Application of selenium conjugated to animal protein in laying hens' diet for the production of selenium-enriched eggs. *Foods*. 10(6): 1-14.
- Rath, P. K., P. K. Mishra, B. K. Mallick, dan N. C. Behura. 2015. Evaluation of different egg quality traits and interpretation of their mode of inheritance in white leghorns. *Veterinary World*. 8(4): 449-452.
- Raziq, F., J. Hussain, S. Ahmad, M. A. Hussain, M. T. Khan, A. Ullah, M. Kumar, F. Wadood, dan G. Faran. 2024. Effect of body weight at photostimulation on productive performance and welfare aspects of commercial layers. *Animal Bioscience*. 37(3): 500-508.
- Redwan, E. M., A. A. Aljadawi, dan V. N. Uversky. 2021. Simple and efficient protocol for immunoglobulin Y purification from chicken egg yolk. *Poultry Science*. 100(3): 1-8.
- Riawan, R., R. Riyanti, dan K. Nova. 2017. Pengaruh perendaman telur menggunakan larutan daun kelor terhadap kualitas internal telur ayam ras. *Jurnal Ilmiah Peternakan Terpadu*. 5(1): 1-7.
- Rifdatari, A., E. Sudjarwo, dan O. Sjojfan. 2024. Evaluation and analysis of the effects of feed supplements, including both organic and inorganic selenium, on the production of layer eggs. *International Journal of Current Science Research and Review*. 7(5): 2907-2911.
- Rondoni, A., D. Asioli, dan E. Millan. 2020. Consumer behaviour, perceptions, and preferences towards eggs: a review of the literature and discussion of industry implications. *Trends in Food Science & Technology*. 106(1): 391-401.
- Safitri, N. R., R. Rosidi, dan N. Hidayat. 2022. Pengaruh suplementasi selenium yeast terhadap bobot albumen, bobot yolk, rasio yolk dan albumen ayam niaga petelur. *Journal of Animal Science and Technology*. 4(2): 152-160.
- Sah, N., D. L. Kuehu, V. S. Khadka, Y. Deng, R. Jha, S. Wasti, dan B. Mishra. 2021. RNA sequencing-based analysis of the magnum tissues revealed the novel genes and biological pathways involved in the egg-white formation in the laying hen. *BMC Genomics*. 22(1): 1-16.

- Said, N. S. dan S. Sulmiyati. 2019. Pengaruh injeksi selenium dan vitamin E pada ayam petelur fase molting (force molting) terhadap performa produksi. *Jurnal Ilmu dan Teknologi Peternakan Tropik*. 6(1): 48-51.
- Samiullah, S., J. R. Roberts, dan K. Chousalkar. 2015. Eggshell color in brown-egg laying hens – a review. *Poultry Science*. 94(10): 2566-2575.
- Schmucker, S., T. Hofmann, V. Sommerfeld, K. Huber, M. Rodehutschord, dan V. Stefanski. 2021. Immune parameters in two different laying hen strains during five production periods. *Poultry Science*. 100(11): 1-14.
- Schrauzer, G. N. 2006. Selenium yeast: composition, quality, analysis, and safety. *Pure Applied Chemistry*. 78(1): 105-109.
- Sedighi, O., M. Zargari, dan G. Varshi. 2014. Effect of selenium supplementation on glutathione peroxidase enzyme activity in patients with chronic kidney disease: A randomized clinical trial. *Nephro-urology monthly*. 6(3): 1-4.
- Setiawati, T., R. Afnan, dan N. Ulupi. 2016. Performa produksi dan kualitas telur ayam petelur pada sistem litter dan cage dengan suhu kandang berbeda. *Jurnal Ilmu Produksi dan Teknologi Hasil Peternakan*. 4(1): 197-203.
- Shahidin, S., Y. Wang, Y. Wu, T. Chen, X. Wu, W. Yuan, Q. Zhu, X. Wang, dan C. Zi. 2025. Selenium and selenoproteins: mechanisms, health functions, and emerging applications. *Molecules*. 30(3): 1-35.
- Shan, Y., D. Tang, R. Wang, A. Tu, Y. Yi, X. Wang, B. Liu, Y. Zhou, Q. Huang, dan X. Lu. 2020. Rheological and structural properties of ovomucin from chicken eggs with different interior quality. *Food Hydrocolloid*. 100(1): 1-10.
- Shatskikh, E., E. Latypova, V. Fisinin, S. Denev, dan P. Surai. 2015. Molecular mechanisms and new strategies to fight stresses in egg-producing birds. *Agricultural Science and Technology*. 7(1): 3-10.
- Shields, H. J., A. Traa, dan J. M. V. Raamsdonk. 2021. Beneficial and detrimental effects of reactive oxygen species on lifespan: a comprehensive review of comparative and experimental studies. *Frontiers in Cell and Developmental Biology*. 9(1): 1-27.
- Sihite, N. W. dan M. S. Hutasoit. 2023. Potensi bahan pangan lokal indonesia sebagai pangan fungsional dan manfaatnya bagi kesehatan: review. *Jurnal Riset Gizi*. 11(2): 133-138.
- Silversides, F. G. dan T. A. Scott. 2001. Effect of storage and layer age on quality of eggs from two lines of hens. *Poultry Science*. 80(8): 1240-1245.

- Simanjuntak, M. C. dan M. S. Pangurian. 2024. Potensi peternakan dengan mengetahui kualitas telur ayam ras petelur cokelat (hibrida) yang dipelihara pada kandang berbeda. *Jurnal Wiyata Cederawasih*. 3(1): 27-34.
- Song, X., D. Wang, Y. Zhou, Y. Sun, X. Ao, R. Hao, M. Gao, Y. Xu, P. Li, C. Jia, dan Z. Wei. 2023. Yolk precursor synthesis and deposition in hierarchical follicles and effect on egg production performance of hens. *Poultry Science*. 102(7): 1-9.
- Soumya, N. P. P., S. Mini, S. K. Sivan, dan S. Mondal. 2021. Bioactive compounds in functional food and their role as therapeutics. *Bioactive Compounds in Health and Disease*. 4(3): 24-39.
- Stoop, D., A. Cobo, dan S. Silber. 2014. Fertility preservation for age-related fertility decline. *The Lancet*. 384(9950): 1311-1319.
- Suchy, P., E. Strakova, and I. Herzig. 2014. Selenium in poultry nutrition: a review. *Czech Journal of Animal Science*. 59(1): 495-503
- Suciati, F., N. Mukminah, dan D. Triastuti. 2022. Effect of egg white addition on pH, density, emulsion stability and color of mayonnaise. *Jurnal Ilmiah Peternakan Terpadu*. 10(2): 144-154.
- Sujana, E., A. Anang, I. Setiawan, dan T. Widjastuti. 2020. The egg characteristics of malon broiler, japanese quails and their cross. *Biodiversitas*. 21(3): 889-895.
- Sukaryani, S., E. A. Yakin, dan H. E. Rhamadanu. 2021. Quality of duck eggs at different soaking times in noni leaf extract stored for 15 days. *Bantara Journal of Animal Science*. 3(2): 85-91.
- Sulistyowati, Y. dan E. Yuniritha. 2015. *Metabolisme Zat Gizi*. Transmedika. Yogyakarta.
- Sun, N., H. Dang, Y. Zhang, M. Yang, W. Zhang, Y. Zhao, H. Zhang, H. Ji, dan B. Zhang. 2023. Inorganic selenium transformation into organic selenium by *Monascus purpureus*. *Foods*. 12(18): 1-15.
- Sunder, A., M. Wilkens, V. Bohm, dan F. Liebert. 2022. Egg yolk colour in organic production as affected by feeding – consequences for farmers and consumers. *Food Chemistry*. 382(1): 1-7.
- Surai, P.F., I. I. Kochish, dan V. I. Fisinin. 2018. Glutathione peroxidases in poultry biology: part 1. classification and mechanisms of action. *World's Poultry Science Journal*. 74(2): 185-198.
- Surai, P. F., I. I. Kochish, V. I. Fisinin, dan M. T. Kidd. 2019. Antioxidant defence systems and oxidative stress in poultry biology: an update. *Antioxidants*. 8(7): 1-36.

- Thaenert, A., A. Sevostyanova, C. Z. Chung, O. V. Rodriguez, S. V. Melnikov, dan D. Soll. 2024. Engineered mRNA–ribosome fusions for facile biosynthesis of selenoproteins. *PNAS*. 121(11): 1-9.
- Tolu, J., S. Bouchet, J. Helfenstein, O. Hausheer, S. Chekifi, E. Frossard, F. Tamburini, O. A. Chadwick, dan L. H. E. Winkel. 2022. Understanding soil selenium accumulation and bioavailability through size resolved and elemental characterization of soil extracts. *NatComm*. 13(6974): 1-16.
- Tumilaar, S. G., A. Hardianto, H. Dohi, dan D. Kurnia. 2024. A comprehensive review of free radicals, oxidative stress, and antioxidants: overview, clinical applications, global perspectives, future directions, and mechanisms of antioxidant activity of flavonoid compounds. *Journal of Chemistry*. 2024(1): 1-21.
- Swastike, W., I. A. Rum, Y. Fitri, A. N. Riandi, S. A. Akbar, M. Purnadianti, S. Lestari, S. A. Rasyid, K. Rahma, M. P. Putri, dan A. Susanty. 2024. *Biokimia Nutrisi dan Gizi*. Future Science. Malang.
- Ulbad, T. P. dan T. Andre. 2024. Factors affecting egg quality and functional properties. *International Journal of Advanced Research (IJAR)*. 12(8): 1235-1250.
- Usturoi, M. G., R. N. Rat, I. C. Crive, I. Ionut, D. Veles, A. Usturoi, F. Stoica, dan R. M. R. Rusu. 2025. Unlocking the power of eggs: nutritional insights, bioactive compounds, and the advantages of omega-3 and omega-6 enriched varieties. *Agriculture*. 15(3): 1-29.
- Verstegen, J. dan K. Gunther. 2023. Ubiquitous occurrence of nano selenium in food plants. *Foods*. 12(17): 1-15.
- Voiculescu, V. M., A. N. Twakor, N. Jerpelea, dan A. P. Stoian. 2025. Vitamin D: beyond traditional roles—insights into its biochemical pathways and physiological impacts. *Nutrients*. 17(5): 1-18.
- Vomund, S., A. Schafer, M. J. Parnham, B. Brune, dan A. V. Knethen. 2017. Nrf2, the master regulator of anti-oxidative responses. *International Journal of Molecular Sciences*. 18(12): 1-19.
- Wakur, N., E. S. Tangkere, L. J. Lambey, dan Y. H. S. Kowel. 2021. Kondisi fisik kerabang telur ayam ras petelur cokelat di pasar pinasungkulan manado. *Zootec*. 41(1): 1-10.
- Wallace, T. C., G. M. Bethancourt, P. Rohloff, E. Y. Jimenez, G. V. Proaño, G. P. McCabe, A. Steiber, A. Ruosch, I. Laessig, E. Ladwig, dan H. You. 2023. Comparison of the nutrient composition of eggs produced in the Guatemalan highlands during the wet and dry seasons. *Food Science & Nutrition*. 11(12): 8163-8173.

- Wang, J., H. Yue, S. Wu, H. Zhang, dan G. Qi. 2017. Nutritional modulation of health, egg quality and environmental pollution of the layers. *Animal Nutrition*. 3(2): 91-96.
- Wang, W., R. Kang, M. Liu, Z. Wang, L. Zhao, J. Zhang, S. Huang, dan Q. Ma. 2022. Effects of different selenium sources on the laying performance, egg quality, antioxidant, and immune responses of laying hens under normal and cyclic high temperatures. *Animals*. 12(8): 1-19.
- Wang, Y., H. Zhao, J. Liu, Y. Shao, J. Li, L. Luo, dan M. Xing. 2018. Copper and arsenic-induced oxidative stress and immune imbalance are associated with activation of heat shock proteins in chicken intestines. *International Immunopharmacology*. 60(1): 64-75.
- Wengerska, K., J. Batkowska, dan K. Drabik. 2023. The eggshell defect as factor affecting the egg quality after storage. *Poultry Science*. 102(7): 1-9.
- Wijayanti, D. A., A. O. Wianto, I. Nurtanti, dan A. Ratnaduhita. 2023. Pemberdayaan masyarakat di kecamatan jumantono kabupaten karanganyar dengan penerapan teknologi produksi telur asin sebagai pangan sumber gizi. *Jurnal Pengabdian Mandiri*. 2(2): 475-480.
- Wlazlak, S., E. Pietrzak, J. Biesek, dan A. Dunislawska. 2023. Modulation of the immune system of chickens a key factor in maintaining poultry production—a review. *Poultry Science*. 102(8): 1-15.
- Wu, H., J. Yuan, H. Yin, B. Jing, C. Sun, I. S. N. Tsopmejo, Z. Jin, dan H. Song. 2023. *Flammulina velutipes* stem regulates oxidative damage and synthesis of yolk precursors in aging laying hens by regulating the liver–blood–ovary axis. *Poultry Science*. 102(1): 1-16.
- Xie, Z., G. Shen, Y. Wang, and C. Wu. 2019. Curcumin supplementation regulates lipid metabolism in broiler chickens. *Poultry Science*. 98(1): 422-429.
- Xu, M., L. Liu, Z. Fan, L. Niu, W. Ning, H. Cheng, M. Li, W. Huo, P. Zhou, H. Deng, W. Chen, dan L. Che. 2025. Effect of different dietary oil sources on the performance, egg quality and antioxidant capacity during the late laying period. *Poultry Science*. 104(1): 1-7.
- Yang, J., J. Luo, X. Tian, Y. Zhao, Y. Li, dan X. Wu. 2024. Progress in understanding oxidative stress, aging, and aging-related diseases. *Antioxidants*. 13(4): 1-14.
- Yin, L., Q. Chen, Q. Huang, X. Wang, D. Zhang, Z. Lin, Y. Wang, dan Y. Liu. 2023. Physiological role of dietary energy in the sexual maturity: clues of body size, gonad development, and serum biochemical parameters of Chinese indigenous chicken. *Poultry Science*. 102(12): 1-11.

- Yu, A. C., M. A. Wang, L. Chen, C. Long, Y. Guo, X. H. Sheng, X. G. Wang, K. Xing, L. F. Xiao, H. M. Ni, J. T. Li, dan X. L. Qi. 2023. Effects of dietary pretreated chinese herbal medicine supplementation on production performance, egg quality, uterine histopathological changes, and antioxidant capacity in late-phase laying hens. *Frontiers in Physiology*. 14(1): 1-13.
- Yuan, L., X. Fu, X. Yang, X. Chen, G. Huang, X. Chen, W. Shi, dan L. Li. 2023. Non-destructive measurement of egg's haugh unit by Vis-NIR with iPLS-Lasso selection. *Foods*. 12(1): 1-15.
- Yunita, Y. dan S. A. Sumiwi. 2018. Selenium dan manfaatnya untuk kesehatan: review jurnal. *Farmaka Suplemen*. 16(2): 412-418.
- Yunitasari, F., A. Jayanegara, dan N. Ulupi. 2023. Performance, egg quality, and immunity of laying hens due to natural carotenoid supplementation: a meta-analysis. *Food Science of Animal Resources*. 43(2): 282-304.
- Yusuf, G. M., S. Sumiati, R. Mutia, W. W. Wardani, I. Akbar, dan N. D. S. Putri. 2023. Performance, egg quality, bone health, and immunity assessments of lohmann laying hens supplemented with vitamin D3 in the diet. *Tropical Animal Science Journal*. 46(4): 461-470.
- Zachariah, M., H. Maamoun, L. Milano, M. P. Rayman, L. B. Meira, dan A. Agouni. 2021. Endoplasmic reticulum stress and oxidative stress drive endothelial dysfunction induced by high selenium. *Journal of Cellular Physiology*. 236(6): 4348-4359.
- Zhang, F., X. Li, dan Y. Wei. 2023. Selenium and selenoproteins in health. *Biomolecules*. 13(5): 1-25.
- Zhang, J., X. Gao, W. Zheng, P. Wang, Z. Duan, dan G. Xu. 2023. Dynamic changes in egg quality, heritability and correlation of these traits and yolk nutrient throughout the entire laying cycle. *Foods*. 12(24): 1-16.
- Zhang, L., J. Zhou, U. E. Obianwuna, C. Long, K. Qiu, H. Zhang, X. Qi, dan S. Wu. 2025. Optimizing selenium-enriched yeast supplementation in laying hens: enhancing egg quality, selenium concentration in eggs, antioxidant defense, and liver health. *Poultry Science*. 104(1): 1-12.
- Zhang, Y., H. Zhu, L. Liu, H. Ma, Q. Shi, D. Li, dan X. Ju. 2023. Three-dimensional culture of rat ovarian granulosa cells shows increased SPP1 and FGF7 expression through the PI3K/Akt pathway. *Cell Biologi International*. 47(5): 1004-1016.
- Zhou, S., A. Zhao, Y. Wu, T. Bao, Y. Mi, dan C. Zhang. 2022. Protective effect of follicle-stimulating hormone on DNA damage of chicken follicular granulosa cells by inhibiting CHK2/p53. *Cells*. 11(8): 1-17.

- Zeng, L., G. Xu, C. Jiang, J. Li, dan J. Zheng. 2022. Research note: L*a*b* color space for prediction of eggshell pigment content in differently colored eggs. *Poultry Science*. 101(8): 1-5.
- Zurak, D., P. Slovonec, Z. Janjecic, X. D. Bedekovic, J. Pintar, dan K. Kljak. 2022. Overview on recent findings of nutritional and non-nutritional factors affecting egg yolk pigmentation. *World's Poultry Science Journal*. 78(2): 531-560.