

DAFTAR PUSTAKA

- Abbas, E., E. El-Gendy, A. Youssef, M.Z. El-Deen, S. El-Tantawy, M. Ahmed, and M. Helal. 2026. Monitoring changes in genetic parameters for growth traits over generations of selection in local chickens in Egypt. *J. Livest. Sci. Technol.* 14 (2): 25 - 30.
- Abdelqader, A., C.B.A. Wollny, and M. Gauly. 2007. Characterization of local chicken production systems and their potential under different levels of management practice in Jordan. *Trop. Anim. Health Prod.* 39 (3): 155 - 164.
- Abubakar, G.T., R. Pambudi, dan Sunarto. 2005. Performans ayam buras dan biosekuritas di Balai Pembibitan Ternak Unggul sapi dwiguna dan ayam. *Pros. Lokakarya Nas. Inovasi Teknol. Pengembangan Ayam Lokal.* 61 - 85.
- Ade, S., I. Udeh, P. Akporhwarho, and O.J. Sanubi. 2025. Multi-trait animal model analysis of body weight and linear traits in Nigerian local chickens: A selection index approach. *J. Agric. Environ.* 20: 125 - 135.
- Adedeji, T.A., O.A. Adebambo, M.O. Ozoje, M.A. Depolo, and S.O. Peter. 2015. Genetic parameter estimation early growth trait of pure and crossbreed chicken progenies in the humid environment of Nigeria. *JEIADC.* 7 (2): 2141 - 2731.
- Adejoh-Ubani, E.O., B.I. Nwagu, I.A. Adeyinka, M. Orunmuyi, O.M. Akinsola, A.K. Olunmogun, and A.U. Umar. 2018. Repeatability estimates for some growth and reproductive traits in Napri-X broiler foundation stock. *Niger. J. Genet.* 32: 16 - 21.
- Adeleke, M. A., S.O. Peters, M.O. Ozoje, C.O.N. Ikeobi, A.M. Bamgbose, and O.A. Adebambo. 2011. Growth performance of Nigerian local chickens in crosses involving an exotic broiler breeder. *Trop. Anim. Health Prod.* 43 (3): 643 - 650.
- Afrin, S., Y.M. Lee, M.A. Haque, A. Iqbal, H. Choo, and J.J. Kim. 2024. Estimation of genetic parameters and breeding value accuracy for growth and egg production traits in Korean native chicken pure lines. *Livest. Sci.* 282: 105436.
- Ahmed, A.A., H.H. Musa, and A.Z. Sifaldin. 2016. Prenatal corticosterone exposure programs growth, behavior, reproductive function and genes in the chicken. *Asian Pac. J. Reprod.* 5 (4): 271 - 278.
- Aipipidely, R.L., J.H.P. Sidadolog, dan T. Yuwanta. 2006. Analisis genetik dan fenotip sifat produksi dan reproduksi ayam Merawang (The analyses genetic and phenotype traits of production and reproduction of Merawang chicken). *Agrosains.* 19 (4): 451 - 463.
- Aklilu, E., K. Kebede, T. Dessie, and A.K. Banerjee. 2013. Phenotypic characterization of indigenous chicken population in Ethiopia. *IJIMS.* 1: 24 - 32.

- Al Farizi, M.S., R. Jan, M. Maskur, T. Rozi, and M. Muhsinin. 2024. Body weight and morphometric characteristics of KUB chicken at 60 days of age. *J. Biol. Trop.* 24 (3): 66 - 73.
- AL-Anbari, E. H., M. M. AL-Rekabi, and O. K. Attallah. 2023. Study some genetic variance and breeding value on productive performance for local chicken differ in polymorphism of growth hormone gene. *IOP Conf. Ser. Earth Env. Sci.* 1252 (1): 012118.
- Albugis, F., J. Polii-Mandang, A. Pinaria, dan B. Doodoh. 2008. Variabilitas genetik dan heritabilitas 12 genotipe kedelai. *Eugenia.* 14 (2): 121 - 128.
- Alewi, M. and A. Melesse. 2013. Evaluating the growth performance of local Kei chickens and their F1-crosses with Rhode Island Red and Fayoumi breeds in watershed areas of Guraghe Administrative Zone, Southern Ethiopia. *Trop. Subtrop. Agroecosyst.* 16: 39 - 50.
- Alfiyanto, A.R., A. Kunarni, A.P.Z.N.L. Sari, Y.V. Saraswati, H. Sasongko, M.H. Wibowo, and D. Maharani. 2023. Egg production performance of crossbred Merawang × KUB chicken. *Proc. 3rd Int. Conf. Smart Innov. Agric. (ICoSIA 2022).* Atlantis Press. 29: 505 - 511.
- Al-Marshadi, A.H., M. Aslam, and A. Abdullah. 2021. Uncertainty-based trimmed coefficient of variation with application. *J. Math.* 1 - 6.
- Almuhiddin, F., J.M. Sihombing, dan R.R. Dewi. 2025. Daya tetas dan bobot tetas telur ayam Kampung Unggul Balitbangtan (KUB) dengan lama penyimpanan yang berbeda. *JPU.* 8 (1): 1 - 8.
- Altınçekiç, Ş., H. Hanoğlu, and S. Duru. 2022. Estimation of breeding values and genetic trend of some growth traits in Merino sheep. *Small Rumin. Res.* 213.
- Álvarez-Castro, J.M., A. Le Rouzic, L. Andersson, P.B. Siegel, and Ö. Carlborg. 2012. Modelling of genetic interactions improves prediction of hybrid patterns – a case study in domestic fowl. *Genet. Res.* 94 (5): 255 - 266.
- Amlia, M.A. Pagala, dan R. Aka. 2016. Studi karakteristik sifat kualitatif dan kuantitatif ayam Kampung di Kecamatan Lasalimu Kabupaten Buton. *JITRO.* 3 (1): 31 - 39.
- Anggita, A.D., E. Wahyuni, D. Maharani, and Nurliyani. 2023. The quality and chemical composition of eggs derived from Kampung Unggul Balitbangtan (KUB) crossed with Merawang and Murung Panggang local chickens. *Proc. Int. Conf. Food Agric. Nat. Resour. Sci.* 5: 35 - 41.
- Angove, J.L., and R.E.A. Forder. 2020. The avian maternal environment: exploring the physiological mechanisms driving progeny performance. *Worlds Poult. Sci. J.* 76 (1): 100 - 118.

- Anjum, M.A., A.W. Sahota, M. Akram, K. Javed, and S. Mehmood. 2012. Effect of selection on productive performance of Desi chicken for four generations. *J. Anim. Plant Sci.* 22 (1): 1 - 5.
- Arifin, M.C. 2018. *Buku Kamus dan Rumus Peternakan & Kesehatan Hewan*. Gita Pustaka, Jakarta.
- August, T., M. Harvey, P. Lightfoot, D. Kilbey, T. Papadopoulos, and P. Jepson. 2015. Emerging technologies for biological recording. *Biol. J. Linn. Soc.* 115 (3): 731 - 749.
- Ayele, E., M. Abera, M. Addis, and Z. Tesema. 2026. Estimating genetic parameter estimates for productive and reproductive traits in high-grade crossbred dairy cattle at Chokie Enterprise Dairy Farm, northwestern Ethiopia. *J. Appl. Anim. Res.* 54 (1).
- Ayu, P.I., N. Suyasa, dan E.S. Rohaeni. 2016. Pertumbuhan dan persentase karkas ayam Kampung Unggul Badan Litbang (KUB) pada pemberian ransum yang berbeda. *Pros. Semnas Inov. Tek. Pertanian*. Banjarbaru, Kalimantan Selatan.
- Badaruddin, R., T. Saili, L.O. Nafiu, M.A. Pagala, F. Albar, D. Zulkarnain, L.O.M. Munadi. 2024. Performance of body weight and body dimension measurements of Tolaki chickens ages 1 to 8 weeks. *IJAAS*. 6 (1): 21 - 28.
- Badi, M., K. Al-Salhie, and A. Ayied. 2023. Effect of age and gender on the body weight and some physiological parameters of local chickens. *EJAS*. 15 (1): 298 - 303.
- Bakrie, B., E.S. Rohaeni, Y. Yusriani, and S. Tirajoh. 2021. The development of a newly formed superior local chicken in Indonesia. A review. *J. Hunan Univ. Nat. Sci.* 48 (9): 112 - 121.
- Bardak, A., K. Hayat, H. Tekerek, D. Parlak, S. Celik, R.S.A. Khan, A.C. Sever, R. Ucar, R.S. Guvercin, and R. Ekinici. 2019. Analysis of genetic variability and heritability for seedcotton yield in a single seed decent population. *Fresenius Environ. Bull.* 28 (5): 4093 - 4100.
- Bastomi, B.C. 2024. *Estimasi Nilai Ripitabilitas Ukuran Tubuh Fase Starter Keturunan F1 Persilangan Ayam Merawang dengan Ayam Kampung Unggul Balitbangtan (KUB)*. Skripsi Sarjana Peternakan. Fakultas Peternakan, Universitas Gadjah Mada, Yogyakarta.
- Becker, A. 1992. *Manual of Quantitative Genetics*. 5th ed. Academic Enterprises, Pullman.
- Begli, H.E., R.V. Torshizi, A.A. Masoudi, A. Ehsani, and J. Jensen. 2016. Longitudinal analysis of body weight, feed intake and residual feed intake in F2 chickens. *Livest. Sci.* 184: 28 - 34.

- Belay, S., G. Belay, and M. Resom. 2024. Morphometric and morphologic traits of indigenous chicken ecotypes of Tigray, northern Ethiopia. *Sci. World J.* 2024. (1): 5537827.
- Bello, A. P., and G. Polanco. 2003. Backyard poultry production on small scale farms in Santa Clara Province, Cuba. *Livest. Res. Rural Dev.* 15 (2).
- Bennett, B.M. 2016. On an approximate test for homogeneity of coefficients of variation. *Euphytica*. 208 (1): 169 - 171.
- Birteeb, P.T., and T. Boakye. 2020. Variant forms of qualitative traits of indigenous chickens reared under extensive system in Tolon district, Ghana. *Anim. Prod. Sci.* 60 (5): 705 - 712.
- Boopathi, N.M. 2020. Genetic Mapping and Marker Assisted Selection. Springer Nature Singapore, Singapore.
- Bourdon, R.M. 2000. Understanding Animal Breeding. Prentice Hall. Upper Saddle River, New Jersey.
- Brah, G.S. 2016. Animal Breeding: Principles and Applications. pp. 636. Kalyani Publisher, New Delhi.
- Brahmantiyo, B., T. Sartika, dan S. Sopiya. 2011. Pendugaan jarak genetik ayam Merawang (studi kasus di BPTU sapi dwiguna dan ayam, Sembawa dan Pulau Bangka, Sumatera Selatan). *Pros. Semnas Teknol. Peternakan dan Veteriner*. 632 - 640.
- Brown, M.M., B. Alenyorege, G.A. Teye, and R. Roessler. 2017. Phenotypic diversity, major genes and production potential of local chickens and guinea fowl in Tamale, Northern Ghana. *Asian-Australas. J. Anim. Sci.* 30 (10): 1372 - 1381.
- Budaarsa, K. 2019. Kamus Istilah Dunia Peternakan. Zifatama Jawara, Sidoarjo.
- Budiarto, A., L. Hakim, S. Maylinda, G. Ciptadi, dan V.M.A. Nurgiartiningih. 2022. Manajemen Pemuliaan Ternak. Media Nusa Creative, Malang.
- Bunning, H., E. Wall, M.G.G. Chagunda, G. Banos, and G. Simm. 2019. Heterosis in cattle crossbreeding schemes in tropical regions: meta-analysis of effects of breed combination, trait type, and climate on level of heterosis, *J. Anim. Sci.* 97 (1): 29 - 34.
- Çağlayan, T., K. Kirikçi, A. Günlü, and S. Alasahan. 2011. Some body measurements and their correlations with live weight in the rock partridge (*Alectoris graeca*). *Int. J. Nematol. Entomol.* 4 (7): 1 - 5.
- Cai, G., T. Xia, T. Shao, H. Y. A. Darwish, J. Xu, X. Deng, and J. Li. 2025. Isolation and fixation of the sex-linked barring feather gene from White Leghorn for chick sexing. *Poult. Sci.* 104 (8): 105252.

- Calus, M.P.L. 2010. Genomic breeding value prediction: Methods and procedures. *Anim. Int. J. Anim. Biosci.* 4: 157 - 64.
- Casagrande, S., G. Dell'Omo, D. Costantini, J. Tagliavini, and T. Groothuis. 2011. Variation of a carotenoid-based trait in relation to oxidative stress and endocrine status during the breeding season in the Eurasian kestrel: a multi-factorial study. *Comp. Biochem. Physiol. - Mol. Integr. Physiol.* 160 (1): 16 - 26.
- Castellini, C., C. Mugnai, L. Moscati, S. Mattioli, M.G. Amato, A.C. Mancinelli, and A. Dal Bosco. 2016. Adaptation to organic rearing system of eight different chicken genotypes: behaviour, welfare and performance. *Ital. J. Anim. Sci.* 1 - 10.
- Chai, H., Y. Yang, D. Wang, C. Ning, X. Zhang, W. Wang, Q. Zhang, H. Bao, and H. Tang. 2026. Comparative accuracy of machine learning and GBLUP for predicting genomic estimated breeding values in chickens. *Genes.* 17 (3).
- Chakraborty, S., H.K. Borah, B.K. Borah, D. Pathak, A.S.N. Zaman, B.K. Baruah, H. Kalita, and B. Barman. 2011. Genetic correlation and coheritability between F1 and F2 generations for quantitative traits in some crosses of green gram (*Vigna radiata* L. Wilczek). *Acta Agron. Hung.* 59 (1): 57 - 63.
- Choi, J.W., E.Y. Lee, J.H. Shin, Y. Zheng, B.W. Cho, J. Kim, H. Kim, and J.Y. Han. 2007. Identification of breed-specific DNA polymorphisms for a simple and unambiguous screening system in germline chimeric chickens. *J. Exp. Zool. Part Ecol. Genet. Physiol.* 307A (4): 241 - 248.
- Chomchuen, K., V. Tuntiyasawasdikul, V. Chankitisakul, and W. Boonkum. 2022. Genetic evaluation of body weights and egg production traits using a multi-trait animal model and selection index in Thai native synthetic chickens (Kaimook E-San2). *Animals* 12 (3).
- Ciptadi, G., Aulanni'am, A. Budiarto, dan Y. Oktanella. 2019. *Genetika dan Pemuliaan: Peternakan-Veteriner*. UB Press, Malang.
- Cohen, J. 1988. Statistical power analysis for the behavioral sciences. In: Lawrence Erlbaum Associates ed. 2nd ed. pp. 1 - 567. Hillsdale, New Jersey.
- Dakhlan, A., R. Sutrisna, and P.E. Santosa. 2023. Performance and growth curve prediction of crossbred chickens from crossing between local roosters and layer hens. *J. Ilmu Ternak dDan Vet.* 28 (1): 46 - 56.
- Dana, N., E.H. vander Waaij, and J.A.M. van Arendonk. 2011. Genetic and phenotypic parameter estimates for body weights and egg production in Horro chicken of Ethiopia. *Trop. Anim. Health Prod.* 43 (1): 21 - 28.
- Darwati, S., E. Sutanto, dan E. Sinaga. 2017. Peningkatan produktivitas ayam lokal melalui persilangan tiga rumpun ayam lokal pada generasi kedua. *Pros. Semnas Biologi 2017*. Aceh.

- Darwati, S., H. Nurcahya, R. Afnan, V.S. Maulana, dan P. Rohamtullah. 2018. Pertumbuhan generasi pertama (G1) hasil silangan Merawang Arab umur 1-12 minggu. *J. Ilmu Prod. Teknol. Hasil Peternak.* 6 (2): 67 - 72.
- Daryono, B.S. dan A.B.I. Perdamaian. 2019. *Karakteristik dan Keragaman Genetik Ayam Lokal Indonesia.* Gadjah Mada University Press, Yogyakarta.
- Davoodi, P., A. Ehsani, R. Vaez Torshizi, and A.A. Masoudi. 2022. New insights into genetics underlying of plumage color. *Anim. Genet.* 53 (1): 80 - 93.
- De Barros Rocha, M.D.G., I.E. Pires, R.B. Rocha, A. Xavier, and C.D. Cruz. 2006. Genetic evaluation of half-sib *Eucalyptus grandis* progenies by means of the REML/BLUP least squares procedures. *Sci. For. Sci.* (71): 99 - 107.
- de Verdal, H., A. Narcy, D. Bastianelli, N. Mème, S. Urvoix, A. Collin, E. le Bihan-Duval, and S. Mignon-Grasteau. 2013. Genetic variability of metabolic characteristics in chickens selected for their ability to digest wheat. *J. Anim. Sci.* 91 (6) : 2605 - 2615.
- Decuypere, E., O. Onagbesan, Q. Swennen, J. Buyse, and V. Bruggeman. 2007. The endocrine and metabolic interface of genotype-nutrition interactions in broilers and broiler breeders. *Worlds Poult. Sci. J.* 63 (1): 115 - 128.
- 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).
- Duchateau, L., and P. Janssen. 2005. Understanding heterogeneity in generalized mixed and frailty models. *Am. Stat.* 59 (2): 143 - 146.
- Duru, S., S.C. Baycan, N. Özhelvaci, B. Gündoğan, and H. Akgün. 2017. Estimation of variance components and genetic parameters for the various body measurements in Turkish Arabian horse. *Yuzuncu Yil Univ. J. Agric. Sci.* 27 (3): 378 - 386.
- Edowai, E., E.L.S. Tumbal, dan F.M. Maker. 2019. Penampilan sifat kualitatif dan kuantitatif ayam Kampung di Distrik Nabire Kabupaten Nabire. *J. Fapertanak.* 4 (1): 50 - 57.
- Egena, S.S.A, A.T. Ijaiya, D.M. Ogah, and V.E. Aya. 2014. Principal component analysis of body measurements in a population of indigenous Nigerian chickens raised under extensive management system. *Slovak. J. Anim. Sci.* 47 (2): 77 - 82.
- Eghbalsaid, S., L. Akasheh, M. Honarvar, A.D. Foroozandeh, A. Ghazikhani-Shad, F. Bankizadeh, and R. Abdollahpour. 2016. Fine-tuning of season definition for genetic analysis of fertility, productivity, and longevity traits in Iranian Holstein dairy cows. *Kuwait J. Sci.* 43 (1): 193 - 207.

- Elhefnawy, M., E. El-Gendy, A. El-Kaiaty, and M. Helal. 2022. Genotype-by-sex interaction effect on growth traits at different ages in slow-growing chickens. *J. Anim. Health Prod.* 10 (2): 226 - 23110.
- El-Sabrou, K., A. El-Deek, S. Ahmad, M. Usman, M.R. Tavares Dantas, and J.B. Freire Souza-Junior. 2022. Lighting, density, and dietary strategies to improve poultry behavior, health, and production. *J. Anim. Behav. Biometeorol.* 10 (1): 2212.
- Elston, R.C. 2006. Segregation ratios. In: *Encyclopedia of Biostatistics*. John Wiley & Sons Ltd., Chichester.
- Emrani, H., A.A. Masoudi, R. Vaez Torshizi, and A. Ehsani. 2020. Genome-wide association study of *shank* length and diameter at different developmental stages in chicken F2 resource population. *Anim. Genet.* 51 (5): 722 - 730.
- Evangelista, A.F., D.H. Cavalcante, W.J.L. Fonseca, C.P. Barros Junior, J.E.G. Campelo, and S.C. Sousa Júnior. 2019. Heritability of growth traits in Nellore cattle using restricted maximum likelihood and Bayesian inference methods. *Arch. Zootec.* 68 (263): 440 - 446.
- Ewens, W.J. 2013. Additive genetic variance. *Brenners Encycl. Genet.* 19 - 20.
- Falconer, D.S. dan T.F.C. Mackay. 1996. *Introduction to quantitative genetics*. 4th ed. Longman Group Ltd, Harlow.
- FAO. 2012. Phenotypic characterization of animal genetic resources. *FAO Animal Production and Health Guidelines No. 11*. Rome.
- Fathi, M., O. Abou-Emera, I. Al-Homidan, A. Galal, and G. Rayan. 2022. Effect of genotype and egg weight on hatchability properties and embryonic mortality pattern of native chicken populations. *Poult. Sci.* 101 (11).
- Fayeye, T., K. Ayorinde, V. Ojo, and O. Adesina. 2006. Frequency and influence of some major genes on body weight and body size parameters of Nigerian local chickens. *Livest. Res. Rural Dev.* 18: 37.
- Firdaus, C.R., Y.V. Saraswati, D. Maharani, Y. Erwanto, B. Guntoro, M.H. Wibowo, and H. Sasongko. 2024. Comparative analysis of early growth phase performance in F3 crossbred Indonesian chickens. 4th Int. Conf. Environ. Sustain. Dev. IOP Conf. Ser. Earth Environ. Sci. 1317 (012014).
- Fogelholm, J., R. Henriksen, A. Höglund, N. Huq, M. Johnsson, R. Lenz, P. Jensen, and D. Wright. 2020. *CREBBP* and *WDR 24* identified as candidate genes for quantitative variation in red-brown plumage colouration in the chicken. *Sci. Rep.* 10 (1): 1161.
- Fulla, S.T. 2022. Review on potential and impact of chicken crossbreeding in developing countries. *World Sci. News.* 166 (2022): 28 - 42.

- Gamelon, M., B.K. Sandercock, and B.E. Sæther. 2019. Does harvesting amplify environmentally induced population fluctuations over time in marine and terrestrial species? *J. Appl. Ecol.* 56 (9): 2186 - 2194.
- Garel, M.E.C., and V. Philippe. 2022. Estimating of additive, dominance, and epistatic genetic variance in eucalypt hybrid population. *Silvae Genet.* 71 (1): 39 - 46.
- Gill, S.S., P. Garraghan, V. Stankovski, G. Casale, R.K. Thulasiram, S.K. Ghosh, K. Ramamohanarao, and R. Buyya. 2019. Holistic resource management for sustainable and reliable cloud computing: an innovative solution to global challenge. *J. Syst. Softw.* 155: 104 - 129.
- Glazko, V.I., G. Yu. Kosovsky, T.T. Glazko, and L.M. Fedorova. 2023. DNA markers and microsatellite code (review). *Selskokhozyaistvennaya Biol.* 58 (2): 223 - 248.
- Gueye, E.F. 1998. Village egg and fowl meat production in Africa. *Worlds Poult. Sci. J.* 54: 73 - 86.
- Guni, F. S., A. M. Katule, and P. A. A. Mwakilembe. 2013. Characterization of local chickens in selected districts of the southern highlands of Tanzania: ii. production and morphometric traits. *Livest. Res. Rural Dev.* 25 (11): 190.
- Guo, X.L., X.L. Li, Y. Li, Z.L. Gu, C.S. Zheng, Z.H. Wei, J.S. Wang, R.Y. Zhou, L.H. Li, and H.Q. Zheng. 2010. Genetic variation of chicken *MC1R* gene in different plumage colour populations. *Br. Poult. Sci.* 51 (6): 734 - 739.
- Guo, Y., K. Zhang, W. Geng, B. Chen, D. Wang, Z. Wang, W. Tian, H. Li, Y. Zhang, R. Jiang, Z. Li, Y. Tian, X. Kang, and X. Liu. 2023. Evolutionary analysis and functional characterization reveal the role of the insulin-like growth factor system in a diversified selection of chickens (*Gallus gallus*). *Poult. Sci.* 102 (3): 102411.
- Habashy, W., A. Enab, and W. El-Tahawy. 2021. Prediction of body weight and other linear body weight measurements of Leghorn versus two Egyptian strains of chicken. *JAPPMU.* 12 (8): 287 - 291.
- Hailu, A. 2013. Phenotypic Characterization of Indigenous Chicken Ecotypes in Northwollo, Amhara Regional State, Ethiopia. GRIN Verlag, Munich.
- Hanh, N.T.H., L.T. Thuy, J. Han, P. Silva, M.N.M. Ibrahim, and A.M. Okeyo. 2015. Morphological characteristics and growth performance of F1 hybrids of Red Junglefowl cocks crossed with Fayoumi or H'mong hens. *TAR.* 26 (4): 655 - 665.
- Hansen, L.S., S.F. Laursen, S. Bahrndorff, M. Kargo, J.G. Sørensen, G. Sahana, H.M. Nielsen, and T.N. Kristensen. 2024. Estimation of genetic parameters for the implementation of selective breeding in commercial insect production. *Genet. Sel. Evol.* 56 (21).

- Hardjosubroto, W. 1994. Aplikasi Pemuliabiakan Ternak di Lapangan. Grassindo, Jakarta.
- Hartatik, T. 2014. Analisis Genetik Ternak Lokal. Gadjah Mada University Press, Yogyakarta.
- Helal, M.M. and E.A. El-Gendy. 2023. Marker-assisted selection for improving body weight in local chickens in Egypt. J. Agric. Sci. 161 (1): 135 - 147.
- Hidayat, Z., Nuraini, dan Asmarhansyah. 2016. Studi karakteristik dan ukuran-ukuran tubuh ayam Merawang F2 di KP Petaling Kepulauan Bangka Belitung. Pros. Semnas. Agroinovasi Spesifik Lokasi Untuk Ketahanan Pangan pada Era Masyarakat Ekonomi ASEAN. Bandar Lampung.
- Hikmawaty, A. Gunawan, R.R. Noor, dan Jakaria. 2014. Identifikasi ukuran tubuh dan bentuk tubuh sapi Bali di beberapa pusat pembibitan melalui pendekatan analisis komponen utama. J. Ilmu Produksi Teknol. Hasil Peternakan. 02: 231 - 237.
- Hilmia, N., R.R. Noor, C. Sumantri, R. Priyanto, dan D. Rahmat. 2019. Identifikasi sifat kualitatif dan kuantitatif sapi Rancah. ZIRAA'AH. 44 (3): 382 - 387.
- Hrabia, A. 2022. Reproduction in the female. In: Scanes C.G., and S. Dirdi eds. Sturkie's Avian Physiology 7th ed. pp. 941–986. Academic Press, Cambridge, Massachusetts.
- Hua, G., J. Chen, J. Wang, J. Li, and X. Deng. 2021. Genetic basis of chicken plumage color in artificial population of complex epistasis. Anim. Genet. 52 (5): 656 - 666.
- Huang, X., L. Zhang, Z. Zhong, Z. Weng, Y. Xu, J. Wen, C. Ma, and B. Du. 2026. *PMEL* governs autosomal dominant inheritance of white-tail independent of yellow body plumage in chickens (*Gallus gallus domesticus*). Poult. Sci. 105 (1): 106127.
- Hughes, R.J. and S.J. Wilkinson. 2021. Flock Uniformity and Sample Size Requirements for Accurate Prediction of Live Weight During Mixed-Sex Rearing of Chickens. Online Agricultural Community. <https://en.engormix.com>. (Diakses tanggal 31 Agustus, 2021).
- Hunton, P. 2005. Poultry genetics, breeding and biotechnology. CABI Publishing, Wallingford.
- Hutu, I., K. Oldenbroek, and L. Waaij. 2020. Animal Breeding and Husbandry. Agroprint Publishing House, Timisoara.
- Ibtisham, F., L. Zhang, M. Xiao, L. An, M.B. Ramzan, A. Nawab, Y. Zhao, G. Li, and Y. Xu. 2017. Genomic selection and its application in animal breeding. Thai J. Vet. Med. 47 (3): 301 - 310.

- In Lee, S., M.R. Ji, Y.J. Jang, M.H. Jeon, J.S. Kim, J.K. Park, I.S. Jeon, and S.J. Byun. 2015. Characterization and miRNA-mediated posttranscriptional regulation of vitelline membrane outer layer protein I in the adult chicken oviduct. *In Vitro Cell. Dev. Biol. Anim.* 51 (3): 222 - 229.
- Irianto, A., Muladno, and A. Gunawan. 2021. Evaluasi program pemuliaan berdasarkan parameter genetik dan fenotipik pada sapi Peranakan Ongole. *J. I. Produksi Teknol. Hasil Peternakan.* 9 (3): 144 - 150.
- Irmawanti, S. 2017. Estimasi Parameter Genetik Bobot Badan dan Statistik Vital Sapi Madura. Tesis Magister Peternakan. Fakultas Peternakan, Universitas Brawijaya, Malang.
- Iskandar, S. and T. Sartika. 2014. KUB chicken: "the first Indonesian Kampung chicken selected for egg production". *Proc. 16th AAAP Anim. Sci. Congr. Vol. II.* Universitas Gadjah Mada, Yogyakarta.
- Islam, F., S.C. Sarker, M.N.M. Ibrahim, A.M. Okeyo, H. Jianlin, M.A. Hoque, and A.K.F.H. Bhuiyan. 2015. Effect of breeding strategies to increase productivity of indigenous chicken in-situ in Bangladesh. *TAR.* 2 (3): 517 - 527.
- Ismoyowati, I. 2017. Keragaman genetik dan konservasi unggas lokal. *STAP.* 5: 12 - 22.
- Jannah, R., Junaedi, Khaeruddin, and B. Syamsuryadi. 2022. Comparison of the morphometric traits and body weight of pure Kampung Chicken with Kampung-Bangkok crosses chicken. *JlIP.* 32 (3): 363 - 372.
- Junaedi, J., K. Khaeruddin, and M. Amin. 2025. Growth performance of sensi native chickens under an intensive rearing system. *Tarjih Trop. Livest. J.* 5: 53 - 61.
- Kantaqwa, A.C., A.P.Z.N.L. Sari, Y.V. Saraswati, H. Sasongko, M.H. Wibowo, and D. Maharani. 2023. Body size performance of F1 Murung panggang x KUB chicken. *Proc. 3rd Int. Conf. Smart Innov. Agric. (ICoSIA 2022). Adv. Biol. Sci. Res.* 489 - 493.
- Kassa, B., M. Taye, W. Esatu, A. Kebede, M. Girma, F.G. Kebede, G. Banos, K. Watson, O. Hanotte, and T. Dessie. 2025. Genetic and phenotypic parameter estimates of body weight and egg production traits of Tilili chicken in Ethiopia. *Animals.* 15 (18).
- Kementerian Pertanian. 2006. Peraturan Menteri Pertanian Nomor 49 Tahun 2006 tentang Pedoman Pembibitan Ayam Lokal yang Baik (*Good Native Chicken Breeding Practice*).
- Kementerian Pertanian. 2012. Keputusan Menteri Pertanian Nomor 2846/Kpts/Lb.430/8/2012 tentang Penetapan Rumpun Ayam Merawang.
- Kementerian Pertanian. 2014. Keputusan Menteri Pertanian Republik Indonesia Nomor 274/Kpts/SR.120/2/2014 tentang Pelepasan Galur Ayam KUB-1.

- Kementerian Pertanian. 2025. Peraturan Menteri Pertanian Republik Indonesia Nomor 13 Tahun 2025 tentang Penetapan dan Pelepasan Rumpun atau Galur dari Sumber Daya Genetik Hewan.
- Khawaja, T., S.H. Khan, N. Mukhtar, and A. Parveen. 2012. Comparative study of growth performance, meat quality and haematological parameters of Fayoumi, Rhode Island Red and their reciprocal crossbred chickens. *Ital. J. Anim. Sci.* 11: 39.
- Kiat, Y., and N. Sapir. 2022. Evolutionary trade-off between male colouration and feather moult extent also indirectly determines female moult. *J. Evol. Biol.* 35 (2): 278 - 287.
- Kilatsih, R. and B.S. Daryono. 2019. The inheritance of phenotype character of second generation (F2) on chicken (*Gallus gallus domesticus*, Linnaeus 1758) derived from crossing of pelung and broiler. *AIP Conf. Proc.* 2260 (1): 1 - 9.
- Klein, de J. 2012. *Biology of the Mouse Histocompatibility-2 Complex*. Springer, Berlin.
- Kodak, O. and I. Nagy. 2019. Historical overview of the selection indices applied in pig breeding. *Acta Agraria Kaposváriensis*. 23 (1): 22 - 31.
- Koli, N. R., C. Prakash, R.K. Mahawar, B.L. Kumhar, and S.S. Punia. 2014. Detection of epistasis, additive and dominance variation in rice (*Oryza sativa* L.) using triple test cross analysis. *Electron. J. Plant Breed.* 5 (4): 632 - 635.
- Komarudin, T. Sartika, T. Kostaman, S. Sopiyan, and H. Zainal. 2020. Analisis bobot badan dan karakteristik semen ayam Gaok terseleksi generasi ke-6. *J. Agripet.* 20 (2): 143 - 149.
- Komarudin, K., T. Sartika, N. Pratiwi, and T. Kostaman. 2021. Growth performance of 6th generation KUB-2 chicken. *IOP Conf. Ser.: Earth Environ. Sci.* 888 012015.
- Kominakis, A.P. 2008. Effect of unfavourable population structure on estimates of heritability, systematic effects and breeding values. *Arch. Tierz.* 51 (6): 601 - 610.
- Korato, M., A. Seid, W. Hassen, and M. Aliy. 2021. Growth performance of F1 and F2 crosses of Horro, Potchefstroom Koekoek, and Bovan Brown chicken breeds under intensive management system. *Glob. J. Anim. Sci. Res.* 9 (1): 90 - 105.
- Kukovics, S. 2022. *Animal Husbandry*. Intech Open, London.
- Labroo, M.R., A.J. Studer, and J.E. Rutkoski. 2021. Heterosis and hybrid crop breeding: A multidisciplinary review. *Front. Genet.* 12: 643761.

- Lapihu, Y.L., F.M.S. Telupere, dan H. Sutedjo. 2019. Kajian fenotip dan genetik performa pertumbuhan dari persilangan ayam lokal dengan ayam ras petelur Isa Brown. *J. Sains Pet. Ind.* 14: 298 - 305.
- Latshaw, J. and B. Bishop. 2001. Estimating body weight and body composition of chickens by using noninvasive measurements. *Poult. Sci.* 80: 868 - 73.
- Lawal, R.A., S.H. Martin, K. Vanmechelen, V. Laudet, J.M. Mwacharo, L.B. Han, J.-L. Han, K.F. Flink, J. Peters, and O. Hanotte. 2020. The wild species genome ancestry of domestic chickens. *BMC Biol.* 18 (1): 1 - 18.
- Leeson, S. and J.D. Summers. 2005. *Commercial poultry nutrition* (3rd ed.). University Books, Guelph.
- Leroy, G., T. Mary-Huard, E. Verrier, S. Danvy, E. Charvolin, and C. Danchin-Burge. 2013. Methods to estimate effective population size using pedigree data: examples in dog, sheep, cattle and horse. *Genet. Sel. Evol.* 45 (1): 1.
- Leroy, G., R. Baumung, P. Boettcher, B. Scherf, and I. Hoffmann. 2016. Review: Sustainability of crossbreeding in developing countries; definitely not like crossing a meadow. *Animal.* 10 (2): 262 - 273.
- Li, G., D. Li, N. Yang, L. Qu, Z. Hou, J. Zheng, G. Xu, and S. Chen. 2014. A genome-wide association study identifies novel single nucleotide polymorphisms associated with dermal *shank* pigmentation in chickens. *Poult. Sci.* 93 (12): 2983 - 2987.
- Li, R., Y. Wang, Y. Liu, D. Li, Y. Tian, X. Liu, X. Kang, and Z. Li. 2023. Effects of *SLC45A2* and *GPNUMB* on melanin deposition based on transcriptome sequencing in chicken feather follicles. *Animals* 13 (16): 2608.
- Li, J., R. Wu, Y. Wang, J. Ma, Z. Peng, W. Luo, T. Liu, D. Shu, and H. Qu. 2024. A selection breeding pattern for sexually dimorphic breast plumage color in Guangxi Yao chickens. *Poult. Sci.* 103 (11): 104218.
- Li, J., L. Wang, S. Yang, X. Zhou, Q. Gou, J. Cai, H. Yang, Q. Wang, and S. Li. 2026. Chicken *shank* color determined by inhibition of dermal melanin (Id) is mediated by a structural variation regulating *CDKN2A* expression. *Pigment Cell Melanoma Res.* 39 (1): e70072.
- Lisnahan, C.V., O.R. Nahak, dan A. Abi. 2020. Dimensi tubuh ayam Kampung fase pullet yang disuplementasi L-threonine dan L-tryptophan dalam pakan. *JTAST.* 2 (1): 12 - 22.
- Liswaniso, S., B.H. Haachilala, O. Chibinga, J. Simbaya, L.T. Tyasi, X. Sun, N. Qin, and R. Xu. 2026. Prediction of growth rate and body weight of Sasso chickens from linear body measurements using path analysis. *Pak. J. Zool.* 57 (5): 2165 - 2170.
- Liu, J., M. Li, Q. Zhang, X. Wei, and X. Huang. 2020. Exploring the molecular basis of heterosis for plant breeding. *J Integr Plant Biol.* 62 (3): 287 - 298.

- Liu, J., Y. Jin, S. Zhou, X. Wang, Y. Li, P. Luan, H. Li, L. Leng, and Y. Wang. 2024. A study on the growth and development characteristics of Lindian chickens. *Animals*. 14 (2): 354.
- Lynch, M. and Walsh, B. 1998. *Genetics and Analysis of Quantitative Traits*. Sinauer Associates Inc., Sunderland.
- Lonkar, V.D. 2024. Role of poultry nutrition in fertility and hatchability. *Poult. Prod. Manag. Recent Trends*. 159 - 172.
- Lou, X.-Y., and M.C.K. Yang. 2006. Estimating effects of a single gene and polygenes on quantitative traits from a diallel design. *Genetica*. 128 (1-3): 471 - 484.
- Lukmanudin, M., C. Sumantri, dan S. Darwati. 2018. Ukuran tubuh ayam lokal silangan IPB D-1 generasi kelima umur 2 sampai 12 minggu. *JIPTHP*. 6 (3): 113 - 120.
- Ma, Y., L. Lizhi, Q. Chen, X. Hua, X. Zhang, X. Zhao, and X. Liu. 2025. Comparison of laying performance and egg quality between peak and late laying phases in Korean quail. *Poult. Sci*. 104 (8): 105262.
- Maharani, D., Wihandoyo, G.A.I. Insani, L. Adinda, and D.N.H. Hariyono. 2019. Phenotypic characterization of Indonesian native chicken with different combs. *Int. J. Poult. Sci*. 18 (3): 136 - 143.
- Maharani, D., F. Mustofa, A.P.Z.N.L. Sari, A. Fathoni, H. Sasongko, and D.N.H. Haryono. 2021. Phenotypic characterization and principal component analyses of indigenous chicken breeds in Indonesia. *Vet. World J*. 14 (6): 1665 - 1676.
- Makarova, A. V., O.V. Mitrofanova, A.B. Vakhrameev, and N.V. Dementeva. 2019. Molecular-genetic bases of plumage coloring in chicken. *Vavilovskii Zhurnal Genet. Sel*. 23 (3): 343 - 354.
- Malinovskaya, L.P., K.V. Tishakova, N.A. Volkova, A.A. Torgasheva, Y.A. Tsepilov, and P.M. Borodin. 2019. Interbreed variation in meiotic recombination rate and distribution in the domestic chicken *Gallus gallus*. *Arch. Anim. Breed*. 62 (2): 403 - 411.
- Mancinelli, A.C., L. Menchetti, M. Birolo, G. Bittante, D. Chiattelli, and C. Castellini. 2023. Crossbreeding to improve local chicken breeds: predicting growth performance of the crosses using the Gompertz model and estimated heterosis. *Poult. Sci*. 102 (8): 1 - 11.
- Mariandayani, H.N., D.D. Solihin, S. Sulandari, dan C. Sumantri. 2013. Keragaman fenotipik dan pendugaan jarak genetik pada ayam lokal dan ayam broiler menggunakan analisis morfologi. *J. Veteriner*. 14 (4): 475 - 484.
- Mariandayani H.N., S. Darwati, I. Khaerunnisa, and V.D. Prasasty. 2023. Growth performance of Indonesian three-breed cross chicken associated with growth

hormone and insulin-like growth factor 2 genes. *Vet. World.* 16 (12): 2471 - 2478.

Mekonnen, K.T., D.H. Lee, Y.G. Cho, A.Y. Son, and K.S. Seo. 2023. Biometric trait characterization and multivariate discriminant analysis of traditionally bred autochthonous chickens in Ethiopia. *Agriculture.* 13 (11): 2142.

Melesse, A., M. Alewi, and Y. Teklegiorgis. 2013. Evaluating the reproductive and egg production traits of local chickens and their F1 crosses with Rhode Island Red and Fayoumi breeds under farmers' management conditions. *Iran. J. Appl. Anim. Sci.* 3 (2): 379 - 385.

Menéndez, S., A. Steiner, U. Witschi, J. Danuser, U. Weber, and G. Regula. 2008. Data quality of animal health records on Swiss dairy farms. *Vet. Rec.* 163 (8): 241 - 246.

Mesele, T. L. 2023. Reproduction and production performance of improved chickens, their production constraints, and opportunities under Ethiopian conditions. *Trop. Anim. Health Prod.* 55 (4): 245.

Mevan, B. 2023. Genetic and non-genetic factors affecting the body weight of the Kurdish local chicken. *KUJAS.* 14 (3): 141 - 149.

Misztal, I., S. Tsuruta, D. Lourenço, I. Aguilar, A. Legarra, and Z. Vitezica. 2018. Manual for BLUPF90 family of programs. University of Georgia, Athens, Georgia.

Moawad, S.A., M.M. Osman, E.-H. A. Rady, K.M. El-Bayomi, and A.F. Farag. 2021. Principle component analysis of breeding values estimated by six animal models for evaluating some productive and reproductive traits of Holstein dairy cattle. *Adv. Anim. Vet. Sci.* 9 (8): 1 - 10.

Moroudi, R.S., S.A. Mahyari, R.V. Torshizi, and H. Ahmadi. 2020. Description of growth patterns in a crossbred population of native × commercial broiler chicken. *J. Agric. Sci. Technol.* 22 (6): 1449 - 1462.

Mrode, R. A. 2014. *Linear Models for the Prediction of Animal Breeding Values* (3rd ed.). CABI Publishing, Wallingford.

Mrode, R. A., and I. Pocrnic. 2023. Non-additive animal models. *Linear Models Predict. Genet. Merit Anim.* 225–238.

Mrode, R.A., I. Pocrnic, and R. Thompson. 2023. Estimation of genetic parameters. *Linear Models Predict. Genet. Merit Anim.* 293–302.

Muir, W.M. and S.E. Aggrey. 2003. *Poultry Genetics, Breeding and Biotechnology.* CABI Publishing, Wallingford.

Muladno and O. Thieme. 2009. Production systems and poultry genetic resources utilized by small producers in areas of West Java and Central Java, Indonesia. GCP/RAS/228/GER Working Paper No. 11. FAO, Rome.

- Musa, S.A., K. Kebede, and Y. Yusuf. 2024. Identification of farmers' breeding objective and traits preferences of local chicken in Doba and Mesala Districts, West Hararghe Zone, Ethiopia. *Int. J. Vet. Sci. Res.* 10 (3): 034 - 045.
- Mustofa, F., A.P.Z.N.L. Sari, E. Suryanto, D. Maharani, A. Agus, S. Widodo, A.A.K. Putra, and H. Sasongko. 2021. The body weight performance of indigenous Indonesian chickens in the *grower* phase. *IOP Conf. Ser. Earth Environ. Sci.* 888 (2021): 012010.
- Nafiu, L.A., M. Abadi, and I. Wati. 2020. Characteristics of qualitative and quantitative properties of chicken village in the Sub-District Lasusua, North Kolaka District. *Anjoro.* 1 (2): 64 - 74.
- Narinc, D., E. Karaman, T. Aksoy, and M.Z. Firat. 2014. Genetic parameter estimates of growth curve and reproduction traits in Japanese quail. *Poult. Sci.* 93 (1): 24 - 30.
- Nataamijaya, A.G. 2010. The native chicken of Indonesia: Genetic resources for rural development. *J. Litbang Pert.* 29 (4): 131 - 138.
- Nawab, A., F. Ibtisham, G. Li, B. Kieser, J. Wu, W. Liu, Y. Zhao, Y. Nawab, K. Li, M. Xiao, and L. An. 2018. Heat stress in poultry production: mitigation strategies to overcome the future challenges facing the global poultry industry. *J. Therm. Biol.* 78: 131 - 139.
- Nematbakhsh, S., J. Selamat, L.H. Idris, and A.F.A. Razis. 2021. Chicken authentication and discrimination via live weight, body size, carcass traits, and breast muscle fat content clustering as affected by breed and sex varieties in Malaysia. *Foods.* 10 (7): 1575.
- Neuner, S., C. Edel, R. Emmerling, K.U. Götz, and F. Reinhardt. 2009. Precision of genetic parameters and breeding values estimated in marker assisted BLUP genetic evaluation. *Genet. Sel. Evol.* 41 (1): 26.
- Nilotpai, G. 2019. *Livestock Production Management*. PHI Learning Private Limited, Delhi.
- Nirsatmanto, A., S. Sunarti, A.I. Putri, L. Haryjanto, N.K. Kartikawati, T. Herawan, F. Lestari, S. Pudjiono, and A. Rimbawanto. 2023. Genetic stability observed in third-generation progeny trial of *Acacia mangium*: the importance of genotype by environment interaction assessment in advance generation breeding strategy. *For. Sci. Technol.* 19 (4): 285 - 295.
- Nissa, S.S., I.U. Sheikh, H.A.A. Altaie, S. Adil, M.T. Banday, M. Kamal, A.H. Alqhtani, A.A. Swelum, A.F. Khafaga, M. Al-Shehri, and M.E. Abd El-Hack. 2024. Impacts of various lighting programs on chicken production and behavior - a review. *Ann. Anim. Sci.* 24 (4): 1065 - 1079.
- Niu, J., D. Xu, Y. Liu, and X. Zhao. 2024. Research progress on genetic regulation mechanism of barring feather trait in chicken. *Acta Vet. Zootech. Sin.* 55 (5): 1883 - 1892.

- Noor, R.R. 2010. Genetika Ternak. Penebar Swadaya, Jakarta.
- Norman, M., S. Chapman, and S. Brando. 2023. The importance of meaningful record-keeping in caring for ageing wild animals. *Optim. Wellbeing Ageing Wild Anim. Hum. Care.* 25 - 35.
- North, M. O., and D.D. Bell. 1990. Commercial chicken production manual (4th ed.). Chapman & Hall, New York.
- Nuningtyas, Y.F., M.H. Natsir, V.M.A. Nurgiartiningsih, S.P. Lestari, and M.N. Athariq. 2022. Variation of qualitative and quantitative traits in day old chick crossbred of Bangkok and Lohman laying hens. *E3S Web Conf.* 335.
- Nuraeni, P., L.O. Nafiu, dan R. Badaruddin. 2021. Karakteristik ukuran-ukuran tubuh ayam lokal umur 3–10 minggu pada strain berbeda. *JIPHO.* 3 (1): 62 - 66.
- Nuraini, N., Z. Hidayat, dan K. Yolanda. 2017. Performa bobot badan akhir, bobot karkas serta persentase karkas ayam Merawang pada keturunan dan jenis kelamin yang berbeda. *Livest. Anim. Res.* 16 (2): 23236.
- Nuraini, Z., Hidayat, S., Puspito, S., and Suyatno. 2021. Characteristics and growth of Merawang chicken in Bangka Belitung under traditional farming system. *IOP Conf. Ser. Earth Environ. Sci.* 807 (2021): 032051.
- Nurchahya, H., S. Darwati, and I.J. Tambunan. 2020. Performance and productivity of local chicken cross third generation at age 1 to 10 weeks. *J. Trop. Biodivers.* 1 (1): 63 - 73.
- Nurchahya, H., S. Darwati, I. Khaerunnisa, and I. Wiryanti. 2021. Identification of polymorphism growth hormone gene in local chickens resulting from three-breed crosses. *J. Trop. Biodivers.* 1 (2): 84 - 92.
- Nurchahya, H., S. Darwati, and P. Rohmatulloh. 2022. Performance of interse Merawangarab and Arabmerawang chicken cross at age 1 to 10 weeks. *J. Trop. Biodivers.* 2 (3): 160 - 168.
- Nurgiartiningsih, V.M.A. 2017. Pengantar Parameter Genetik pada Ternak. UB Press, Malang.
- Nuruddin, M. 2019. Jenis-Jenis Ayam Buras. <https://disnakbun.banjarkab.go.id/> (Diakses pada 12 Desember, 2021).
- Nurwahyuni, E., A.R.I. Putri, N. Febrianto, M.A. Marom, and R.F. Azhar. 2023. Performance analysis in quantitative traits of local chickens (*Gallus gallus* sp.) in Kediri regency East Java. *J. Sain Peternak. Indones.* 18 (1): 15 - 19.
- Nwachukwu, E.N., S.N. Ibe, K. Ejekwu, and U.K. Oke. 2006. Evaluation of growth parameters of main and reciprocal crossbred normal, naked neck and frizzle chickens in a humid tropical environment. *J. Anim. Vet. Adv.* 5: 542 - 546.

- Ochora, S., J.S. Kasima, W.M. Okot, and E.K. Ndyomugenyi. 2023. Performance of local and local x improved chicken crosses under semi-intensive management system in northern Uganda. *Cogent Food Agric.* 9 (1): 1 - 10.
- Ohagenyi, I.J., F.C. Iregbu, and V.C. Udeh. 2023. Estimation of genetic parameters for body weight and some colour traits in the seventh-generation index-selected Nigerian heavy local chicken ecotype. *Agric. Sci. Dig.* 43 (4): 551 - 555.
- Okon, B., L. Ibom, A. Dauda, and M. Udayi. 2025. Phenotypic variations in local chickens: Influence of strain and sex on morphometric traits. *J. Anim. Sci. Vet. Med.* 10: 123 - 128.
- Olawunmi, O., A. Salako, and A. Afuwape. 2008. Morphometric differentiation and assessment of function of the Fulani and Yoruba Ecotype indigenous chickens of Nigeria. *Int. J. Morphol.* 26: 71067471.
- Oldenbroek, J.K., and L. van der Waaij. 2011. Assessing the genetic diversity in small farm animal populations. *Animal.* 5 (11): 1669 - 1683.
- Onodugo, M.O., F.U. Udeh, H.O. Edeh, C.C. Nwoga, C. Ezenwosu, M.U. Eze, M.K. Obute, I.B. Umeorah, N.G. Onodugo, and H.M. Ndofor-Foleng. 2024. Evaluation of growth and genetic parameters of second filial generation (F2) offspring of crossbreed exotic and local birds. *J. Home Econ. Res.* 31 (1): 15 - 24.
- Osei-Amponsah, R., B.B. Kayang, and A. Naazie. 2012. Age, genotype and sex effects on growth performance of local chickens kept under improved management in Ghana. *Trop. Anim. Health Prod.* 44 (1): 29 - 34.
- Pagliarini, M., W.S. Kieras, J.P. Moreira, V.A. Sousa, J.Y. Shimizu, M.L.T. Moraes, E. Furlani, and A.V. Aguiar. 2017. Adaptability, stability, productivity and genetic parameters in slash pine second-generation families in early age. *Silvae Genet.* 65.
- Pakiding, W., M.R. Hakim, Daryatmo, T.R. Linggi, and Elis. 2021. The influence of protein levels on body weight, body dimensions, and reproductive characteristics of local chickens treated in-ovo feeding L-Arginine for two generations. *IOP Conf. Ser.: Earth Environ. Sci.* 788: 012188.
- Pal, A. and A.K. Chakravarty. 2020. Heritability, repeatability, and genetic correlation of disease-resistance traits. In: *Genetics and Breeding for Disease Resistance of Livestock*. Academic Press, London.
- Pan, R., T. Hua, Y. Ding, H. Bai, Y. Jiang, Z. Wang, M. Hu, G. Chen, X. Wu, and G. Chang. 2024. Study on changing disciplinarian of beak colors in ducks and the regulation network based on transcriptome sequencing. *Poult. Sci.* 103 (2): 1 - 16.

- Pélabon, C., C.H. Hilde, S. Einum, and M. Gamelon. 2020. On the use of the coefficient of variation to quantify and compare trait variation. *Evol. Lett.* 4 (3): 180 - 188.
- Peng, S., L. Zhang, S. Ali, S. Lin, Z. Liao, Q. Peng, P. Xie, and Z. Zhang. 2025. Whole genome resequencing uncovers candidate genes related to plumage color in Yuexi frizzled feather chicken. *Poult. Sci.* 104 (11): 105680.
- Perdamaian, I.V.U. and B.S. Daryono. 2018. Plumage uniformity, growth rate and growth hormone polymorphism in Indonesian hybrid chickens. *Int. J. Poult. Sci.* 17 (10): 486 - 492.
- Phuong, L.T. and P.T. Nha. 2024. Reproductive performance of local Noi chicken over two generations in the Mekong Delta of Vietnam. *Adv. Anim. Vet. Sci.* 12 (8): 1596 - 1603.
- Pratiwi, N., T. Sartika., Komarudin, dan F. Saputra. 2020. Karakteristik fenotipe ayam KUB-2 di Balai Penelitian Ternak. *Pros. Semnas Teknol. Peternak. Vet.*
- Prissia, A.H., Y.V. Saraswati, B. Guntoro, Y. Erwanto, H. Sasongko, M.H. Wibowo, and D. Maharani. 2024. Body weight performance of *starter* phase in F2 Indonesian chicken cross. *Proc. IOP Conf. Ser. Earth Environ. Sci.* 1360: 012025.
- Purwanti, C.S., E.A. Yakin, and F.N. Ramadhani. 2021. Performance of laying hen eggs on the addition of sprouts at Wakhid Farm, Magetan Regency. *BJAS.* 3 (2): 52 - 57.
- Puspita, U., H. Saragih, T. Hartatik, and B. Daryono. 2021. Body weight gain and carcass quality of the hybrid chicken derived from the crossing between female F1 Kampung Super and male F1 Kampung-Broiler. *JTBB.* 6 (2): 60934.
- Putra, W.P.B., Sumadi, dan T. Hartatik. 2014. Estimasi nilai pemuliaan dan most probable producing ability sifat produksi sapi Aceh di Kecamatan Indrapuri Provinsi Aceh. *Buletin Peternakan.* 38 (1): 1 - 7.
- Putranto, H.D., Nurmeiliasari, M. Dani, B. Brata, B.H. Sari, dan Y. Yumiati. 2024. Studi morfometrik bagian tubuh ayam KUB yang berkorelasi dengan prediksi berat badan akhir. *SENATASI.* 3 (1): 425 - 433.
- Putri, A.B.S.R.N., G. Gushairiyanto, dan D. Depison. 2020. Bobot badan dan karakteristik morfometrik beberapa galur ayam lokal. *J. Ilmu dan Teknol. Peternak. Trop.* 7 (3): 256.
- Qin, Q., A. Sun, R. Guo, M. Lei, S. Ying, and Z. Shi. 2013. The characteristics of oviposition and hormonal and gene regulation of ovarian follicle development in magang geese. *Reprod. Biol. Endocrinol.* 11 (1).

- Rabeye, T., A. K.F.H. Bhuiyan, M.A. Habib, and M.S. Hossain. 2009. Phenotypic and genetic parameters for growth traits in Red Chittagong Cattle of Bangladesh. *JBAU*. 7: 265 - 271.
- Rahardjo, M.F. 2022. *Ekologi Ikan Persebaran dan Keragaman Ikan*. IPB Press, Bogor.
- Rahayu, F., D. Depison, and G. Gushairiyanto. 2021. Performance of Kampung Super chicken and Bangkok chicken first generation (G1) until the age of 12 weeks. *Livest. Anim. Res.* 19 (3): 326 - 336.
- Rajkumar, U., R.P. Sharma, M.K. Padhi, K.S. Rajaravindra, B.L.N. Reddy, M. Niranjana, T.K. Bhattacharya, S. Haunshi, and R.N. Chatterjee. 2011. Genetic analysis of juvenile growth and carcass traits in a full diallel mating in selected colored broiler lines. *Trop. Anim. Health Prod.* 43 (6): 1129 - 1136.
- Rajkumar, U., L. Leslie Leo Prince, K.S. Rajaravindra, S. Haunshi, M. Niranjana, and R.N. Chatterjee. 2021. Analysis of (co) variance components and estimation of breeding value of growth and production traits in Dahlem Red chicken using pedigree relationship in an animal model. *PLoS ONE*. 16 (3): e0247779.
- Rajulani, C., S. Bahri, dan S. Zainudin. 2022. Performans ayam Kampung unggul balitnak (KUB) yang diberi ampas tahu fermentasi menggunakan *Microbacter alfaafa-11*. *GIJEA*. 1 (2): 81 - 86.
- Ram, T., R. Deen, B. Mishra, G. Padmavathi, A.S. Rama Prasad, and B.C. Viraktamath. 2007. Triple test cross analysis for yield and yield components in rice (*Oryza sativa*). *Indian J. Agric. Sci.* 77 (6): 393 - 395.
- Rana, M., A. Sood, W. Hussain, R. Kaldete, T.R. Sharma, R.K. Gill, S. Kumar, and S. Singh. 2019. Chapter 6-Gene pyramiding and multiple character breeding. In: Singh, M. eds. *Lentils* pp. 83 - 124. Academic Press, Cambridge.
- Redden, R. 2012. Understanding sheep estimated breeding value. *NDSU Ext. Serv. Bull. AS*. 1621: 1 - 7.
- Richter, J., J. Hidalgo, F. Bussiman, V. Breen, I. Misztal, and D. Lourenco. 2024. Temporal dynamics of genetic parameters and SNP effects for performance and disorder traits in poultry undergoing genomic selection. *J. Anim. Sci.* 102.
- Rieseberg, L.H., M.A. Archer, and R.K. Wayne. 1999. Transgressive segregation, adaptation and speciation. *Heredity*. 83 (4): 363 - 372.
- Rizzi, C. 2023. A study on egg production and quality according to the age of four Italian chicken dual-purpose purebred hens reared outdoors. *Animals*. 13 (19): 3064.
- Robert-Coudert, Y., and R.P. Wilson. 2005. Trends and perspectives in animal-attached remote sensing. *Front. Ecol. Environ.* 3 (8): 437 - 444.

- Rosalinda, E., H. Sasongko, D. Maharani. 2025. Polymorphism of the prolactin gene and its association with reproductive traits in F2 local crossed chickens. *Vet World*. 18 (1): 29 - 39.
- Sahota, A.W., B.M. Bhatti, dan L.A. Akhtar. 2003. Comparative productive performance of Desi parent chickens and their first progeny maintained on deep litter system. *Pak. Vet. J*. 23 (1): 7 - 10.
- Saleh, E.J., S.S. Zainudin, dan S. Djunu. 2023. Pelatihan usaha ternak ayam KUB pada petani ternak di Desa Lonuo, Kecamatan Tilongkabila Bone Bolango. *J. Pengabdian Masyarakat Teknologi Pertanian*. 2 (1): 98 - 102.
- Salvador, R. de C., A.A. Pereira, and T.J. Fernandes. 2025. Bayesian inference in nonlinear growth models and hypothesis testing of sexual dimorphism in black utrerana chickens. *Poult. Sci*. 104 (12).
- Santos, R.M. dos, P.C.S. de Sousa, H.P.S. Abrahão, D.D. Pereira, F.F.B. da Costa, É.R. de Alvarenga, E.M. Turra, and F.L.B. Toral. 2026. Long-term assessment of genetic variability and selection efficiency in a Nile tilapia (*Oreochromis niloticus*) breeding program. *Aquaculture*. 613.
- Sapkota, S., J.L. Boatwright, K. Jordan, K. Boyles, R. Kresovich, S. 2020. Multi-trait regressor stacking increased genomic prediction accuracy of sorghum grain composition. *Agronomy*. 10: 1221.
- Saputra, T.H., K. Nova, dan D. Septinova. 2015. Pengaruh penggunaan berbagai jenis litter terhadap bobot hidup, karkas, giblet, dan lemak abdominal broiler fase finisher di closed house. *JIPT*. 3 (1): 38 - 44.
- Saraswati, Y.V., F. Mustofa, A.P.Z.N.L. Sari, H. Sasongko, B. Ariyadi, and D. Maharani. 2023. Live weight uniformity on the day-old chick of Indonesian local chickens. *MAB*. 52 (2): 153 - 156.
- Sari, N.Y., E. Suryanto, R. Rusman, R.O. Sujarwanta, and E. Triyannanto. 2023. Meat quality of crossing indigenous chicken of Merawang, Murung Panggang and KUB. *IOP Conf. Ser.: Earth Environ. Sci*. 1183: 012039.
- Sartika, T. and R.R. Noor. 2005. Production performance of some local chicken genotypes in Indonesia. An overview. *AGTR Case Study*. International Livestock Research Institute (ILRI), Nairobi, Kenya.
- Sartika, T. dan S. Iskandar. 2007. Mengenal Plasma Nutfah Ayam Indonesia dan Pemanfaatannya. Balai Penel. Ternak, Pusat Penelitian dan Pengembangan Peternakan, Badan Litbang Pertanian, Bogor.
- Sartika, T. 2012. "Ayam KUB-1" Proposal Pelepasan Galur Hasil Pemuliaan. *Puslitbangnak*. Badan Litbang Pertanian. 57.
- Sartika, T., Desmayati, S. Iskandar, H. Resnawati, A. Setioko, Sumanto, A. Sinurat, Isbandi, B. Tiesnamurti, dan E. Romjali. 2013. Ayam KUB-1. *IAARD Press*, Bogor.

- Sartika, T. and S. Iskandar. 2019. The productivity of 4th generation KUB-2 chicken. *JITV*. 24 (4): 151 - 157.
- Schmidt, G.S. and E.A.P. Figueiredo. 2005. Selection for reproductive traits in white egg stock using independent culling levels. *Braz. J. Poult. Sci.* 7 (4): 231 - 235.
- Schultz, B., N. Serão, and J.W. Ross. 2020. Chapter 23-Genetic improvement of livestock, from conventional breeding to biotechnological approaches. In: Bazer FW, Cliff L.G., and G. Wu. *Animal Agriculture: Sustainability, Challenges and Innovations*. pp. 393 - 405. Academic Press, New York.
- Schwarz, L., A.M. Križanac, H. Schneider, C. Falker-Gieske, J. Heise, Z. Liu, J. Bennewitz, G. Thaller, and J. Tetens. 2024. Genetic and genomic analysis of reproduction traits in Holstein cattle using SNP chip data and imputed sequence level genotypes. *BMC Genomics*, 25: 880.
- Semakula, J., P. Lusembo, D. Kugonza, D. Mutetikka, J. Ssenyonjo, and M. Mwesigwa. 2011. Estimation of live body weight using zoometrical measurements for improved marketing of indigenous chicken in the Lake Victoria basin of Uganda. *23. Livest. Res. Rural. Dev.* 23 (8): 1 - 8.
- Sen, S., R.K. Vandre, A.K. Jha, A. Singh, S. Sant, and A. Tewari. 2025. Genomics: a new breeding paradigm shift in farm animal genetic improvement. *Genet. Tools Improv. Livest. Perform.* 9 - 18.
- Shrestha, J.N.B., and M.H. Fahmy. 2007. Breeding goats for meat production. 3. Selection and breeding strategies. *Small Rumin. Res.* 67 (2 - 3): 113 - 125.
- Sidadolog, J.H.P. 2007. Pemanfaatan dan kegunaan ayam lokal Indonesia. Dalam: Diwyanto K., dan Prijono SN (Ed.). *Keanekaragaman Sumber Daya Hayati Ayam Lokal Indonesia: Manfaat dan Potensi*. Pusat Penelitian Biologi. Lembaga Ilmu Pengetahuan Indonesia. pp 43 - 93. LIPI Press, Bogor.
- Siegel, P.B., C.F. Honaker, and L. Andersson. 2024. Research note: phenotypic trends for the multigenerational advanced intercross of the Virginia body weight lines of chickens. *Poult. Sci.* 103 (4): 103480.
- Silva Neto, J.B., L.F.M. Mota, M. Londoño-Gil, P.I. Schmidt, G.R.D. Rodrigues, V.A. Ligor, L.M. Arikawa, C.U. Magnabosco, L.F. Brito, and F. Baldi. 2024. Genotype-by-environment interactions in beef and dairy cattle populations: a review of methodologies and perspectives on research and applications. *Anim. Genet.* 55 (6): 871 - 892.
- Simm, G., G. Pollott, R.A. Mrode, and K. Marshall. 2020. Predicting breeding values. In: *Genetic Improvement of Farmed Animals*. CABI Digital Library, London.
- Simm, G., G. Pollott, R.A. Mrode, R. Houston, and K. Marshall. 2021. *Genetic Improvement of Farmed Animals*. CABI Digital Library, London.

- Singh, V., P.K. Singh, R. Pandey, V.N. Pathak, and B.P. Shahi. 2012. Triple test-cross analysis for yield and its component traits in pea. *Plant Arch.* 12 (1): 191 - 193.
- Siwendu, N.A., D. Norris, J.W. Ngambi, H.A. Shimelis, and K. Benyi. 2013. Heterosis and combining ability for body weight in a diallel cross of three chicken genotypes. *Trop. Anim. Health. Prod.* 45 (4): 965 - 70.
- Slassie, L. G., A. Melesse, S. Banerjee, and G. Beyene. 2015. Characterization of the village chicken production system under traditional management in Gantaafeshum district of eastern Tigray, Ethiopia. *Livest. Res. Rural Dev.* 27 (9): 177.
- Smith, C. 2021. Introduction: Current animal breeding. *Anim. Breed.* CRC Press, Florida.
- Solekah, S, A.P.Z.N.L. Sari, Y.V. Saraswati, H. Sasongko, and D. Maharani. 2022. Repeatability and most probable producing ability of egg weight and one-day-old chick weight in Merawang chicken. *IOP Conf. Ser. Earth Environ. Sci.* 1114: 012094.
- Sørensen, P. 2010. Chicken genetic resources used in smallholder production systems and opportunities for their development. *FAO Smallholder Poultry Production Paper No. 5.* FAO, Rome.
- Souza, J.S., D.D. Silveira, B.B.M. Teixeira, and A.A. Boligon. 2020. Parameters and genetic associations of visual scores and weights in Hereford and Braford breeds. *Livest. Sci.* 241.
- Stansfield, W.D. 1991. Theory and problems of genetics. Terjemahan Apandi dan Hardi. *Genetika*, 2nd ed. Erlangga, Jakarta.
- Štrbac, L., D. Pracner, M. Šaran, D. Janković, S. Trivunović, M. Ivković, L. Tarjan, and N. Dedović. 2023. Mathematical modeling and software tools for breeding value estimation based on phenotypic, pedigree and genomic information of Holstein Friesian cattle in Serbia. *Animals.* 13 (4): 597.
- Suhada, H., Sumadi, and N. Ngadiyono. 2009. Estimasi parameter genetik sifat produksi sapi Simmental di Balai Pembibitan Ternak Unggul Sapi Potong Padang Mengatas, Sumatera Barat. *Buletin Peternakan.* 33 (1): 1 - 7.
- Sukprasert, C., S. Plaengkaew, P. Khumpeerawat, K. Lokaewmanee, A. Bashar, A. D. Parvez, and S. Suwanlee. 2026. Genetic parameters for egg production traits in Ku-Phuphan black bone chicken population. *J. Indones. Trop. Anim. Agric.* 51 (1): 12 - 20.
- Sulastri dan M.D.I. Hamdani. 2018. Dasar Pemuliaan Ternak. Anugrah Utama Raharja, Bandar Lampung.
- Sungkhapreecha, P., V. Chankitisakul, M. Duangjinda, and W. Boonkum. 2022. Combining abilities, heterosis, growth performance, and carcass

characteristics in a diallel cross from Black-bone chickens and Thai native chickens. *Animals*. 12: 1602.

Suprijatna, E. 2010. Strategi pengembangan ayam lokal berbasis sumber daya lokal dan berwawasan lingkungan. Semnas. Lokal ke IV. Fakultas Peternakan Universitas Diponegoro, Semarang.

Suryana. 2014. Ayam Murung panggang, Ayam Pedaging yang Juga Jago Bertelur. kalsel.litbang.pertanian.go.id. (Diakses pada 18 November, 2021).

Suyasa, N. and I.A. Parwati. 2019. Physical, anatomical and carcass diversity of superior native chicken Sensi Agrinak and KUB maintenance in farmers. *Proc. 2nd Int. Conf. Food Agric.* 2 (2019): 342 - 348.

Tamzil, M.H. dan B. Indarsih. 2020. Pengukuran beberapa bagian tubuh ayam Kampung Super yang dipelihara secara intensif. *JITPI*. 6 (2): 103 - 110.

Taylor, R. 1990. Interpretation of the correlation coefficient: A basic review. *JDMS*. 6 (1): 35 - 39.

Terčič, D. 2013. Divergent selection experiments in poultry. *Slov. Vet. Res.* 50 (3): 139 - 114.

Teshome, P., G. Goshu, W. Esatu, and T. Dessie. 2025. Estimation of heterosis, combining ability and reciprocal effects for body weight in four genetic groups of chicken from a full diallel cross. *Poult. Sci.* 104 (8).

Thakur, S.M. 2022. Basic Animal Breeding Methods. Intech Open. (Diakses tanggal 7 Juli, 2025).

Thompson, R., S. Brotherstone, and I.M.S. White. 2005. Estimation of quantitative genetic parameters. *Philos. Trans. R. Soc. B Biol. Sci.* 360 (1459): 1469 - 1477.

Thompson, R. 2008. Estimation of quantitative genetic parameters. *Proc. R. Soc. B Biol. Sci.* 275 (1635): 679 - 686.

Tixier-Boichard, M., F. Leenstra, P. Hocking, and S. Weigend. 2012. A century of poultry genetics. *Worlds Poult. Sci. J.* 68: 307 - 321.

Tribudi, Y.A., V.M.A. Nurgartiningih, M. Ulfah, M.H. Natsir, D. Maharani, A.P.Z. N. L. Sari, and A. Ibrahim. 2025. Phenotypic characterization of six Indonesian local chicken populations. *Cogent Food Agric.* 11 (1): 2523576.

Tringali, A., R. Bowman, and A. Husby. 2015. Selection and inheritance of sexually dimorphic juvenile plumage coloration. *Ecol. Evol.* 5 (22): 5413 - 5422.

Udeh, I., C. Onowhakpor, and U. G. Sorhue. 2020. Estimation of genetic parameters and breeding values for body weight and linear body measurements of mixed flock of cattle breeds. *J. Anim. Sci. Biotechnol.* 53 (2):105 - 109.

- Ulinuha, Y. 2021. Peforma Kuantitatif Ayam Merawang dari Sembawa dan Bangka. Skripsi Sarjana Peternakan. Fakultas Peternakan, Universitas Gadjah Mada, Yogyakarta.
- Ullengala, R., L.L.L. Prince, C. Paswan, S. Haunshi, and R. Chatterjee. 2021. Variance component analysis of growth and production traits in Vanaraja male line chickens using animal model. *Anim. Biosci.* 34 (4): 471 - 481.
- Ullengala, R., L.L.L. Prince, S. Haunshi, C. Paswan, and R. Chatterjee. 2021. Estimation of breeding value, genetic parameters and maternal effects of economic traits in rural male parent line chicken using pedigree relationships in an animal model. *J. Anim. Breed. Genet.* 138 (4): 418 - 431.
- Urfa, S., H. Indrijani, dan W. Tanwiriah. 2017. Model kurva pertumbuhan ayam Kampung Unggul Balitnak (KUB) umur 0-12 minggu. *Ilmu Ternak Univ. Padjadjaran.* 17 (1): 59 - 66.
- Vaccaro, L. A., T.E. Porter, and L.E. Ellestad. 2022. The effect of commercial genetic selection on somatotrophic gene expression in broilers: a potential role for insulin-like growth factor binding proteins in regulating broiler growth and body composition. *Front. Physiol.* 13: 935311.
- Van Der Werf, J. 2013. Genomic selection in animal breeding programs. *Methods Mol. Biol.* 1019: 543 - 561.
- Van Vleck, L.D., E.J. Pollak, and C.P. Van Tassell. 2019. *Genetics for the Animal Sciences.* W.H. Freeman and Company, New York.
- Veerkamp, R.F., H.A. Mulder, R. Thompson, and M.P.L. Calus. 2011. Genomic and pedigree-based genetic parameters for scarcely recorded traits when some animals are genotyped. *J. Dairy Sci.* 94 (8): 4189 - 4197.
- Vitezica, Z.G., A. Reverter, W. Herring, and A. Legarra. 2018. Dominance and epistatic genetic variances for litter size in pigs using genomic models. *Genet. Sel. Evol.* 50 (1).
- Wang, C.-F., N. Li, and C.-X. Wu. 2006. Genetic analysis of feather color and *shank* color traits based on f-2 resource population in Tibetan chicken. *Yi Chuan Hered. Zhongguo Yi Chuan Xue Hui Bian Ji.* 28 (7): 810 - 814.
- Wang, M., and S. Xu. 2019. Statistics of Mendelian segregation—A mixture model. *J. Anim. Breed. Genet.* 136: 341 - 350.
- Wang, Y., S. Wu, G. Qi, and H. Zhang. 2022. Recent advances on regulation of in ovo feeding on muscle fiber development and meat quality of broiler chickens. *Chin. J. Anim. Nutr.* 34 (5): 2781 - 2789.
- Wang, Y., Y. Sun, A. Ni, Y. Li, J. Yuan, H. Ma, P. Wang, L. Shi, Y. Zong, J. Zhao, S. Bian, and J. Chen. 2022. Research Note: Heterosis for egg production and oviposition pattern in reciprocal crossbreeds of indigenous and elite laying chickens. *Poult. Sci.* 101.

- Wang, H., X. Zhao, J. Wen, C. Wang, X. Zhang, X. Ren, J. Zhang, H. Li, G. Muhatai, and L. Qu. 2023. Comparative population genomics analysis uncovers genomic footprints and genes influencing body weight trait in Chinese indigenous chicken. *Poult. Sci.* 102 (11): 103031.
- Wang, Y., C. Huang, Y. Yu, R. Cai, Y. Su, Z. Chen, M. Zheng, and H. Chui. 2023. Dietary aflatoxin B1 induces abnormal deposition of melanin in the corium layer of the chicken *shank* possibly via promoting the expression of melanin synthesis-related genes. *J. Integr. Agric.* 22 (6): 1847 - 1856.
- Wati, L., H. Ediyanto, E. Wiyanto, and Depison. 2023. The relationship between body size and bone weight (breast and thigh) in Kampung chicken (*Gallus domesticus*) results third generation selection. *Buletin Peternakan.* 47 (4): 220 - 230.
- Weller, J.I. 2010. Whole genome marker-assisted selection. *CAB Rev. Perspect. Agric. Vet. Sci. Nutr. Nat. Resour.* 5: 1 - 10.
- Werner, C.R., K.A. Gardner, and D.J. Tolhurst. 2024. Reviving the desired gains index: an optimal solution for parent selection in public plant breeding programs. *bioRxiv.* 60392: 1 - 23.
- Wiguna, K. I. M. 2016. Ukuran Tubuh Hasil Persilangan Ayam Lokal dengan Ras Pedaging Umur 2 sampai 12 Minggu. Skripsi. Institut Pertanian Bogor, Bogor.
- Winaya, A., Suyatno, P. Coy, and N. Fauzi. 2019. The evaluation of estimated breeding value and the most probable producing ability for the basis selection of Ettawa crossbred goat (*Capra hircus* sp.) at Malang, East Java, Indonesia. 2nd Int. Conf. Nat. Resour. Life Sci., IOP Conf. Ser.: Earth Environ. Sci. 293 (2019): 012008.
- Wintari, M., M. Pharmawati, dan I. Wiratmini. 2019. Keragaman genetik dan hubungan kekerabatan ayam lokal berdasarkan penanda RAPD. *Metamorfosa J. Biol. Sci.* 6 (2): 230 - 236.
- Wolak, M.E., and J.M. Reid. 2017. Accounting for genetic differences among unknown parents in microevolutionary studies: how to include genetic groups in quantitative genetic animal models. *J. Anim. Ecol.* 86 (1): 7 - 20.
- Wolc, A., H.H. Zhao, J. Arango, P. Settar, J.E. Fulton, N.P. O'Sullivan, R. Preisinger, C. Stricker, D. Habier, R.L. Fernando, D.J. Garrick, S.J. Lamont, and J.C.M. Dekkers. 2015. Response and inbreeding from a genomic selection experiment in layer chickens. *Genet. Sel. Evol.* 47 (1).
- Xie, X.F., Z.Y. Wang, Z.Q. Zhong, D.Y. Pan, G.Y. Hou, and Q. Xiao. 2024. Genome-wide scans for selection signatures in indigenous chickens reveal candidate genes associated with local adaptation. *Animal* 18 (5): 101151.
- Xu, J., S. Lin, X. Gao, Q. Nie, Q. Luo, and X. Zhang. 2017. Mapping of Id locus for dermal *shank* melanin in a Chinese indigenous chicken breed. *J. Genet.* 96 (6): 977 - 983.

- Xu, D., W. Zhu, Y. Wu, S. Wei, G. Shu, Y. Tian, X. Du, J. Tang, Y. Feng, G. Wu, X. Han, and X. Zhao. 2023. Whole-genome sequencing revealed genetic diversity, structure and patterns of selection in Guizhou indigenous chickens. *BMC Genom.* 24 (1): 570.
- Yadav, V., N.P. Singh, R. Sharma, A. Gupta, A. Baranwal, S.F. Ahmad, and V. Raina. 2018. Crossbreeding systems in livestock. *Pharma Innov. J.* 7 (7): 8 - 13.
- Yadav, A., A. Jain, J. Sahu, A. Dubey, R. Gadpayle, D.K. Barwa, S. Kasyap, and A. Singh. 2019. An Overview on the concept and utilization of heterosis in livestock. *Int. J. Livest. Res.* 9: 26 - 37.
- You, Z., J. Yuan, Y. Wang, Y. Sun, A. Ni, Y. Li, et al/H. Ma, T. Ma, and J. Chen. 2024. Integrated transcriptomic analysis on chicken ovary reveals *CYP21A1* affects follicle granulosa cell development and steroid hormone synthesis. *Poult. Sci.* 103 (5): 103589.
- Yousefi Zonuz, A., S. Alijani, and S.A. Rafat. 2019. Genetic heterogeneity of residual variance of hatch weight in Mazandaran native chicken. *Br. Poult. Sci.* 60 (4): 366 - 372.
- Yu, J., Q. Wang, J. Zhao, L. Chen, Y. He, R. Li, H. Xu, L. Li, L. Bai, and H. Liu. 2026. Unraveling the population genetic structure and identifying candidate genes for dorsal plumage color in Liangshan Yanying chickens. *Poult. Sci.* 105 (1): 106180.
- Yudin, N.S., K.I. Lukyanov, M.I. Voevoda, and N.A. Kolchanov. 2016. Application of reproductive technologies to improve dairy cattle genomic selection. *Russ. J. Genet. Appl. Res.* 6 (3): 321 - 329.
- Zanetti, E., M. De Marchi, M. Abbadi, and M. Cassandro. 2011. Variation of genetic diversity over time in local Italian chicken breeds undergoing in situ conservation. *Poult. Sci.* 90 (10): 2195 - 2201.
- Zhang, W. and S.E. Aggrey. 2003. Genetic variation in feed utilization efficiency of meat-type chickens. *Worlds Poult. Sci. J.* 59 (3): 328 - 339.
- Zhang, Z., Z.-Q. Xu, Y.-Y. Luo, H.-B. Zhang, N. Gao, J.-L. He, C.-L. Ji, D.-X. Zhang, J.-Q. Li, and X.-Q. Zhang. 2017. Whole genomic prediction of growth and carcass traits in a Chinese quality chicken population. *J. Anim. Sci.* 95 (1): 72 - 80.
- Zhang, J., J. Wang, Q. Li, Q. Wang, J. Wen, and G. Zhao. 2020. Comparison of the efficiency of BLUP and GBLUP in genomic prediction of immune traits in chickens. *Animals* 10 (3).
- Zhang, P., X. Qiu, L. Wang, and F. Zhao. 2022. Progress in genomic mating in domestic animals. *Animals*. 12 (18).

- Zhang, Y., X. Li, Q. Guo, Z. Wang, Y. Jiang, X. Yuan, G. Chen, G. Chang, and H. Bai. 2024. Genome-wide association study reveals 2 copy number variations associated with the variation of plumage color in the white duck hybrid population. *Poult. Sci.* 103 (10): 104107.
- Zhang, Z., J. Sun, S. Liu, J. Chen, X. Wei, C. Huang, L. Lin, Q. Chen, X. Liu, and H. Li. 2024. Morphological characteristics, genetic diversity, and microsatellite analysis of the progenies (F1, F2, and backcross descendant) of *Siniperca chuatsi* and *Siniperca scherzeri*. *Aquac. Res.* 2024 (1): 6672569.
- Zhao, J., M. Chen, Z. Luo, P. Cui, P. Ren, and Y. Wang. 2024. Strand-specific RNA sequencing reveals gene expression patterns in F1 chick breast muscle and liver after hatching. *Animals* 14 (9).
- Zheng, M., X. Liu, Y. Meng, X. Lin, J. Li, J. Zhu, M. Zhao, L. Liu, T. Geng, D. Gong, and J. Zhang. 2023. Female-biased expression of R-spondin 1 in chicken embryonic gonads is estrogen-dependent. *Animals* 13 (13): 2240.
- Zheng, X., J. Chen, R. Nie, H. Miao, Z. Chen, J. He, Y. Xie, and H. Zhang. 2024. Differential expression of asip transcripts reveals genetic mechanism underpinning black-tail independence from body plumage in yellow-bodied chickens. *Anim. Genet.* 55 (2): 249 - 256.
- Zhuo, Z., S. J. Lamont, and B. Abasht. 2019. RNA-seq analyses identify additivity as the predominant gene expression pattern in F1 chicken embryonic brain and liver. *Genes* 10 (1).
- Ziadi, C., S. Demyda-Peyrás, M. Valera, D. Perdomo-González, N. Laseca, A. Rodríguez-Sainz de los Terreros, A. Encina, P. Azor, and A. Moling. 2025. Comparative analysis of genomic and pedigree-based approaches for genetic evaluation of morphological traits in Pura Raza Española horses. *Genes* 16 (2).