DAFTAR PUSTAKA

Abioye, S. A., F. A. Aderemi, and G. O. Adeyemo. 2012. The effect of varied dietary crude protein levels with balanced amino acids on performance and egg quality characteristics of layers at first laying phase. Food and Nutrition Sciences. 3(4): 526–530.

Adegbenro. M., A. S. Ajidara, S. G. Modupe and G. E. Onibi. 2020. Food science and technology performance and egg qualities of Isa-Brown layers fed different quantities of feed at varying feeding frequencies. Turkish Journal of Agriculture. 8(4): 864–872.

Adelina. R., N. Noorhamdani dan A. Mustafa. 2016. Perebusan dan penumisan menurunkan kandungan beta karoten dalam wortel. Jurnal Gizi dan Dietetik Indonesia. 1(3): 164-168.

Agarwal, A., R. A. Saleh, and M. A. Bedaiwy. 2003. Role of reactive oxygen species in the pathophysiology of human reproduction. Fertility and sterility. 79(4). 829–843.

Ahmadi. F and F. Rahimi. 2011. Factor affecting quality and quantity of egg production on laying hen (Review). World application science journal. 12(3): 372–384.

Akdemir. F., C. Orhan, N. Sahin, K. Sahinand A. Hayirli. 2012. Tomato powder in laying hen diets: effects on concentrations of yolk carotenoids and lipid peroxidation. British Poultry Science. 53(5): 675–680.

Al-Harthi, M.A. 2015. The effect of different dietary contents of olive cake with or without saccharomyces cerevisiae on egg production and quality, inner organs and blood constituents of commercial layers. Eur. Poult. Sci. 79: 83.

Alsobayel, A. A., M. A. Almarshad, M. A. Albadry. Effect of breed, age and storage period on egg weight, egg weight loss and chick weight of commercial broiler breeders raised in Saudi Arabia. Journal of the Saudi Society of Agricultural Sciences. 12(1): 53–57.

Alvarez, J. G and B. T. Storey. 1995. Differential incorporation of fatty acids into and peroxidative loss of fatty acids from phospholipids of human spermatozoa. Molecular reproduction and development. 42(3): 334–346.

Arora, S., S. Siddiqui and R. Gehlot. 2019. Physicochemical and bioactive compounds in carrot and beetroot juice. Asian Journal of Dairy and Food Research. 38(03): 252–256.

Astaneh, I. Y., M. Chamani, S. N. Mousavi, A. A. Sadeghi and M. A. Afshar. 2018. Effects of stocking density on performance and immunity in Ross 308 broiler chickens. Kafkas Univ. Vet. Fak. Derg. 24: 483–489.

Badan Standarisasi Nasional. 2008. Perhitungan indeks yolk. (Jakarta: Badan Standarisasi Nasional).

Badan Pusat Statistik. 2021. Populasi ayam buras menurut provinsi (ekor) 2019-2021.https://www.bps.go.id/indicator/24/476/1/populasi-ayam-buras-menurut-provinsi-.html.

Bailey, D and J. N. Chen. 1989. Chromatographic analyses of xanthophylls in egg yolks from laying hens fed turf bermudagrass (*Cynodon dactylon*) meal. J. Food Sci. 54: 584–586.

Bamualim. U., A. Kedang and S. Ratnawaty. 1994. Pola pemeliharaan ayam buras terhadap tingkat pendapatan petani di daerah lahan kering Nusa Tenggara Timur. Pertemuan nasional pengolahan and komunikasi hasil-hasil penelitian: 256–260.

Bell. D. D dan W. D. Weaver Jr (Ed). 2002. Commercial Chicken Meat and Egg Production (Edisi ke-5). New York: Springer Science.

Bezerra, L. R., J. L. R. Sarmento, S. G. Neto, N. R. O. de Paula, R. L. Oliveira and W. M. C. Rêgo. 2013. Residual feed intake: a nutritional tool for genetic improvement. Tropical animal health and production. 45(8): 1649–1661.

Böhm. F., R. Edge and G. Truscott. 2012. Interactions of dietary carotenoids with activated (singlet) oxygen and free radicals: Potential effects for human health. Molecular Nutrition & Food Research. 56(2): 205–216.

Biard, C., P. F. Surai and A. P. Møller. 2007. An analysis of pre- and post-hatching maternal effects mediated by carotenoids in the blue tit. Journal of Evolutionary Biology. 20(1): 326–339.

Bidura., I. G. N. G., I. B. G. Partama, I. A. P. Utami, D. P. M. A. Candrawati, E. Puspani, I. M. Suasta, D. A. Warmadewi, I. A. Okarini, A. A. P. Wibawa, I. M. Nuriyasa, and N. W. Siti. 2020. Effect of Moringa oleifera leaf powder diets on laying hens performance, β-carotene, cholesterol, and minerals contents in egg yolk. IOP Conf. Series: Materials Science and Engineering 823 (2020) 012006: 2–11.

Bidura, I. G. N. G., N. W. Siti, A. A. P. P. Wibawa, I. N. T. Ariana, and E. Puspani. 2021. The effect of carot leaves meal fermented in diets on egg production, yolk cholesterol and beta-carotene in yolk of hens. Annimals of the romanian society for cell biology. 25(6): 18705–18711.

Buckle. K. A., G. H. Edward. 1987. Ilmu Pangan. Terj. H. Purnomo dan Adiono. Jakarta: U.L. Press.

Budiyanto, F., H. Natalia, S. N. Widiastuti. 2017. Kajian produksi telur mingguan dan FCR Ayam Arab Sembawa sebagai sumber protein hewani lokal prospektif. Prossiding Semnas TPV. 514– 519.

Campo., D. L and S. G. Davila. 2002. Influence of mating ratio and group size on indicators of fearfulness and stress of hens and cocks. Poultry Science. 81:1099–1103.

Chaudière. J and R. Ferrari-Iliou. 1999. Intracellular antioxidants: From chemical to biochemical mechanisms. Food and Chemical Toxicology. 37(10): 949–962.

Creswell and B. Gunawan. 1982. Native chickens in Indonesia: Production traits on better Environment [Report]. Bogor livestock research centre 2: 9-14.

Da Silva. E. A., M. A. Vieira, E. A. Vieira, D. M. C. Amboni, E. R. Amante and E. Teixeira. 2007. Chemical, physical and sensory parameters of different carrot varieties (*Daucus carota L*). Journal of Food Process Engineering. 30(6): 746–756.

Dias. J. S. 2012. Major classes of Phyto-nutraceuticals in vegetables and health benefits: A Review. Journal of Nutritional Therapeutic. 1(1): 31–62.

D'Ambrosio. C., S. Arena, A. Scaloni, L. Guerrier, E. Boschetti, M. E. Mendieta, A. Citterio and P. G. Righetti. 2008. Exploring the chicken egg white proteome with combinatiorial peptide ligand libraries. Journal of proteome research. 7: 3461–3474.

Diplock., A. T, M. C. R. Symons and C. A. Rice-Evans. 1991. Tehniques in Free Radical Research. Amsterdam: Elsevier Sci.

Dong, X. F., W. W. Gao, J. L. Su, J. M. Tong, Q. Zhang. 2011. Effects of dietary polysavone (Alfalfa extract) and chlortetracycline supplementation on antioxidation and meat quality in broiler chickens. Br Poult Sci. 52(3): 302–309.

DSM. 2020. Egg Quality Manual. Heerlen: DSM Corporate.

Duman, M and A. Şekeroğlu. 2017. Effect of egg weights on hatching results, broiler performance and some stress parameters. Brazilian Journal of Poultry Science. 19(2): 255–262.

Elibol. O dan J. Brake. 2003. Effect of frequency of turning from three to eleven days of incubation on hatchability of broiler hatching eggs. Poultry Science. 82: 357–359.

Elizabeth. R and S. Rusdiana. 2012. Perbaikan manajemen usaha ayam kampung sebagai salah satu sumber pendapatan keluarga petani di pedesaan. Workshop Nasional Unggas Lokal.

Edge. R and G. Truscott. 2010 Properties of carotenoid radicals and excited states and their potential role in biological systems. Landrum JT (ed) Carotenoids. Physical, chemical and biological functions and properties. Florida: CRC Press. pp 283–304.

Englmaierová, M., M. Skřivan, I. Bubancová. 2013. A comparison of lutein, spray-dried chlorella, and synthetic carotenoids effects on yolk colour, oxidative stability, and reproductive performance of laying hens. Czech J. Anim. Sci. 58(9): 412–419.

Ezieshi, V. E., M. J. Nworu, F. O. Bandele, R. O. Suleman, B. C. Ojurongbe and J. M. Olomu. 2003. Laying hen productivity in the tropics as affected by stage of egg production, feed restriction, stocking density and time of day. Archivos de Zootecnia. 52(200): 475–482.

Fernandes. J.,C. Bortuluzzi, A. F. G. Esser, J. P. Contini, P. B. Stokler, D. Faust. 2014. Performance of broiler submitted to hight CO2 level during incubation combined with temperature fluctuation at late post-hactch. Brazilian journal of poultry science. 16(3):285:290.

Fisinin, V, I., T. Papazyan, and P. F. Surai. 2009. Modern methods of stress prevention in poultry production. Today's Animal Production. 2: 56–61.

Fumihito. A., T. Miyake, S. I. Sumi, M. Takada, S. Ohno and N. Kondo. 1994. One subspecies of the red junglefowl (*Gallus-Gallus Gallus*) suffices as the matriarchic ancestor of all domestic breeds. Proceedings of the National Academy of Sciences: 12505–1259.

Ganguly. J., J.W. Mehl and H. J. Deuel. 1953. Studies on carotenoid metabolism. The Journal of Nutrition. 50(1): 59–72.

Grčević, M., Z. Kralik, G. Kralik, D. Galović, Z. Radišić, D. Hanžek. 2019. Quality and oxidative stability of eggs laid by hens fed marigold extract supplemented diet. Poult Sci. 98(8): 3338–3344.

Gregosits., B, A. Kerti, and B. Laszlo. 2006. Absorption of carotenoids (lycopene, lutein, beta-cryptoxanthin) in newly-hatched chick. Szent István University Journal.

Gu, Y. F., Y. P. Chen, R. Jin, C. Wang, C. Wen, and Y. M. Zhou. 2020. A comparison of intestinal integrity, digestive function, and egg quality in laying hens with different ages. Poultry Science Journal. 100(3): 100949.

Habiburahman, R., S. Darwati, C. Sumantri dan Rukmiasih. 2020. Produksi telur dan kualitas telur ayam IPB D-1 G7 serta pendugaan nilai ripitabilitasnya. Jurnal ilmu produksi dan teknologi hasil peternakan. 8(2): 97–101.

Halliwell, B and M. J. C. Gutteridge. 1999. Free Radicals in Biology and Medicine. Oxford University Press: Oxford.

Hammershøj, M., U. Kidmose and S. Steenfeldt. 2010. Deposition of carotenoids in egg yolk by short-term supplement of coloured carrot (*Daucus carota*) varieties as forage material for egg-laying hens. Journal of the Science of Food and Agriculture. 90(7): 1163–1171.

Hartona, T. A., A. W. Puger dan I. M. Nuriyasa. 2014. Kualitas telur lima jenis ayam kampung yang memiliki warna bulu berbeda. Jurnal Peternakan Tropika. 2(2): 153–162.

Hayanti, S. Y. 2014. Petunjuk Teknis Budidaya Ayam Kampung Unggul. Jambi: Balai Pengkajian Teknologi Pertanian.

Hulbert. A. J., R. Pamplona, R. Buffenstein, and Buttemer. W. A. 2007. Life and death: metabolic rate, membrane composition, and life span of animals. Physiological Reviews. 87(1): 1175–1213.

Hencken, H. 1992. Chemical and physiological behavior of fee carotenoids and their effects on pigmentation. Poultry Science. 71(4): 711–717.

Islam. K. M. S., M. R. Amin and F. J. Schweigert. 2017. Carotenoid status of poultry egg under different feeding system in Bangladesh. International Journal of Poultry Science. 16(6): 228–232.

Jiang, Y. H., R. B. Mcgeachin, and C. A. Bailey. 1994. Alpha-tocopherol, betacarotene, and retinol enrichment of chicken eggs. Poultry Sci. 73(7): 1137–1143.

Joseph, N. S dan E. T. Moran. 2005. Effect of age and post emergent holding in the Hatcher on broiler performance and further processing yield. Journal of Applied Poultry Research. 14: 512–520.

Karadas. F., P. F. Surai, N. H. C. Sparks and E. Grammenidis. 2005. Effects of maternal dietary supplementation with three sources of carotenoids on the retinyl esters of egg yolk and developing quail liver. A Molecular and Integrative Physiology. 140(4): 430–435.

Kudo, K. W., K. Nishimura, S. Tabata, Shoji. 2010. Gustducin is expressed in the taste buds of the chicken. Animal science journal. 81: 666–72.

Kulshreshtha, G., A. R. Navarro, S. E. Rodriguez, T. Diep, M. T. Hincke. 2018. Cuticle and pore plug properties in the table egg. Poult Sci. 97(1): 1382–1390.

Kunachowicz. H., I. Nadolna, K. Iwanow and B. Przygoda. 2012. Nutritional Value Of Selected Food Products and Typical Dishes. Warszawa: Wydawnictwo Lekarskie PZWL.

Kurniawan. M., M. Izzati, Y. Nurchayati. 2010. Kandungan klorofil, karotenoid, dan vitamin C pada beberapa spesies tumbuhan akuatik. Anatomi Fisiologi. 18(1). 28–40.

Kurtini, T., K. Nova., dan D. Septinova. 2014. Produksi Ternak Unggas. Bandar Lampung: Anugrah Utama Raharja (AURA).

Kondororik., F, M. Martosupono, A. B. Susanto. 2016. Identifikasi komposisi pigmen, isolasi, dan aktivitas antioksidan β-karoten pada rumput laut merah *Gracilaria gigas* hasil budidaya. Jurnal biologi dan pembelajarannya. 3(1): 1–10.

Koutsos, E. A., A. J. Clifford, C. C. Calvert, K. C. Klasing. 2003. Maternal carotenoid status modifies the incorporation of dietary carotenoids into immune tissues of growing chickens (Gallus gallus domesticus). Journal of Nutrition. 133(4): 1132–1138.

Kovacs-Nolan. J and Y. Mine. 2012. Egg yolk antibodies for passive immunity. Annu. Rev. Food Sci. Technol. 3: 163–182.

Lan, P. T., M. Sakamoto, and Y. Benno. 2004. Effects of two probiotic *Lactobacillus* strains on jejunal and cecal microbiota of broiler chicken under acute heat stress condition as revealed by molecular analysis of 16S rRNA genes. Microbiol. Immunol. 48: 917–929.

Leahu, A., C. Damian, N. Carpiuc, M. Oroian and M. Avramiuc. 2013. Change in color and physicochemical quality of carrot juice mixed with other fruits. Journal of Agroalimentary Processes and Technologies. 19(2): 241-246.

Leeson, S and L. Caston. 2004. Enrichment of eggs with lutein. Poult. Sci. 83: 1709–1712.

Li, H., L. Jin, F. Wu, P. Thacker, X. Li, J. You, X. Wang, S. Liu, S. Li, Y. Xu. 2012. Effect of red pepper (Capsicum frutescens) powder or red pepper pigment on the performance and egg yolk color of laying hens. Asian-Australasian journal of animal sciences. 25(11): 1605.

Li, F., L. M. Zhang, X. H. Wu, C. Y. Li, X. J. Yang, Y. Dong, A. Lemme, J. C. Han and J. H. Yao. 2013. Effect of metabolizable energy and balanced protein on egg production, quality, and components of Lohman Brown laying hens. Journal of applied poultry research. 22: 36–46.

Liu. Y. P., G. S. Wu, Y. G. Yao, Y. W. Miao, G. Luikart, M. Baig, A. Beja-Pereira, Z. L. Ding and M. G. Palanichamy. 2006. Multiple maternal

origins of chickens: out of the Asian jungles. Molecular Phylogenetics and Evolution 38: 12–19.

Lokaewmanee, K., S. Mompanuon, P. Khumpeerawat, and K. Yamauchi. 2009. Effects of dietary mulberry leaves (Morus alba L.) on egg yolk color. J. Poult. Sci. 46: 112–115.

Lohmann Teirzucht. 2020. Management Guide Cage Housing. Lohmann Teirzucht. North America.

Lourens, A., R. Molenaar, H. van den Brand, M. J. Heetkamp, Meijerhof, 2006. Effect of egg size on heat production and the transition of energy from egg to hatchling. Poultry Science. 85: 770–776.

Mangiagalli, M., P. Martino, T. Smajlovic, L. Cavalchini, and M. Stefano. (2010). Effect of lycopene on semen quality, fertility and native immunity of broiler breeder. British poultry science. 51: 152–157.

McGraw, K, J., E. Adkins-Regan and R. S. Parker. 2002. Anhydrolutein in the zebra finch: A new, metabolically derived carotenoid in birds. Comparative Biochemistry and Physiology. 132(4): 811–818

Monira. K. N., M. Salahuddin and G. Miah. 2003. Effect of breed and holding period on egg quality characteristics of chicken. International Journal of Poultry Science. 2(4): 261–263.

Moza. J. 2010 Effect of Pulsed Electric Field on Extraction and Quality of Carrot Juice [Thesis]. Hayana (India): Haryana Agricultural University

Mustafa, M. Y., M. A. Muneer, A. A. Anjum, and M. Ahamd. 2010. Influence of stocking density on immune response of broilers against newcastle disease virus. Pak. J. Life Soc. Sci. 8: 7–10.

Na, J. C., J. Y. Song, B. D. Lee, S. J. Lee, C. Y. Lee, and G. H. An. 2004. Effect of polarity on absorption and accumulation of carotenoids by laying hens. Anim Feed Sci Technol 117(3): 305–315.

Najafi, P., I. Zulkifli, N. A. Jajuli, A. S. Farjam, S. K. Ramiah, A. A. Amir, E. O'Reily, and D. Eckersall. 2015. Environmental temperature and stocking density effects on acute phase proteins, heat shock protein, circulating corticosterone and performance in broiler chickens. Int. J. Biometeorol. 59: 1577–1583.

Nangsuay, A., R. Meijerhof, Y. Ruangpanit, B. Kemp, and H. Van den Brand. 2013. Energy utilization and heat production of embryos from eggs originating from young and old broiler breeder flocks. Poultry Science. 92(2): 474–482.

Ng'Ambi, J, W., P. K. Mokgope, D. Brown, T. G. Manyelo. 2019. Effect of

dietary carrot meal supplementation on productivity and carcass characteristics of arbor acre broiler chickens aged 22 to 42 days. Applied Ecology and Environmental Research. 17(5): 12337–12346.

Nicolle. C., G. Simon, E. Rock, P. Amouroux and C. R'em'esy. 2004. Genetic variability influences carotenoid, vitamin, phenolic, and mineral content in white, yellow, purple, orange, and dark-orange carrot cultivars'. Journal of the American Society for Horticultural Science. 129(4): 523–529.

Niki. E., Y. Yoshida, Y, Saito Y and N. Noguchi. 2005. Lipid peroxidation: Mechanisms, inhibition, and biological effects. Biochemical and Biophysical Research Communications. 338(1): 668–676.

Noble, R. C., and M. Cocchi. 1990. Lipid metabolism and the neonatal chicken. Prog. Lipid Res. 29(2): 107–140.

Novryantoro, V., M. L. Wibowo, and A. T. Ananda. 2019. An utilization of carrot tuber juice (*Daucus carota L*) to increase average daily gain in broiler chickens. Asian Academic Society International Conference 7th: 223–226.

Noy, Y and D. Sklan. 2001. Yolk and exogenous feed utilization in the posthatch chick. Poultry science. 80(10): 1490–1495.

Nui, Z., J. Fu, Y. Gao, and F. Liu. 2008. Influence of paprika extract supplement on egg quality of laying hens fed wheat-based diet. Int. J. Poult. Sci. 7: 887–889.

Nys, Y. 2000. Dietary carotenoids and egg yolk coloration [A review]. Arch. Geflugelkd. 64: 45–54.

Nys. Y and N. Guyot. 2011. Egg formation and chemistry. Imporoving The Safety and Quality of Eggs and Eggs Productions. Sawston: Woodhead Publishing.

Olalude, C. B., F. O. Oyedeji, and A. M. Adegboyega. 2015. Physico chemical analysis of daucus carota (carrot) juice for possible industrial applications. Journal of Applied Chemistry. 8(8): 110–113.

Oloyo, R. A., 2003. Effect of age on total lipid and cholesterol of hen eggs.Indian Journal of Animal Sciences. 73(1): 93–100.

Padhi, M. K., R. Chatterjee, S. Haunshi, and U. Rajkumar. 2013. Effect of age on egg quality in chicken. Indian journal of poultry science. 48(1): 122–125.

Prakash, J and B. Shyamala. 2010. Nutritional content and antioxidant properties of pulp waste from *Daucus carota* and *Beta vulgaris*.

Malaysian Journal of Nutrition. 16: 397–40.

Peraturan Menteri Pertanian No. 49/Permentan/OT.140/10/2006. 2006. Pedoman pembibitan ayam lokal yang baik. Jakarta.

Pfander, H. 1992. Carotenoids: An overview. in Methods in Enzymology carotenoids: chemistry, separation, quantitation and antioxidation. Vol. 213. L. Parker, ed. New York: Academic Press.

Prabowo, L. D. Mahfudz, dan U. Atmomarsono. 2019. Massa kalsium dan massa protein daging akibat penggunaan tepung limbah wortel (Daucus carota L) dalam ransum ayam broiler. 14(2): 201–207.

Pramudyati., Y. S. 2009. Petunjuk Teknis Beternak Ayam Buras (Palembang: Balai Pengkajian Teknologi Pertanian)

Prohens. J., F. Nuez And M. J. Carena. 2008. Carrot. Vegetables II. New York: Springer: 328–357.

Rohaeni. E. S., D. I. Saderi, A. Darmawan, Suryana and A. Subhan. 2004. Profil usaha peternakan ayam lokal di Kalimantan Selatan. Seminar Nasional Teknologi Peternakan dan Veteriner: 555–561.

Rose, S. P. 2005. Principles of Poultry Science. Wallingford: CAB Int.

Sachchidananda, D. C., M. H. Begum, C. D. Shu bash, M. H. Rashid, and J. M. Ferdaus. 2008. Evaluation of marigold flower and orange skin as sources of xanthophylls pigment for the improvement of egg yolk color. Poult. Sci. 45: 265–272.

Sahin, K., C. Orhan, F. Akdemir, M. Tuzcu, S. Ali, and N. Sahin. 2011. Tomato powder supplementation activates Nrf-2 via ERK/Akt signaling pathway and attenuates heat stress-related responses in quails. Animal Feed Science and Technology. 165(34): 230–237.

Saito, F and K. Kita. 2011. Maternal intake of astaxanthin improve hatchability of fertilized eggs stored at high temperature. The Journal of Poultry Science. 48(1): 33–39.

Saleh, A. A., E. Gawish, S. F. Mahmoud, K. Amber, W. Awad, M. H. Alzawari, M. Shukry, A. M. E. A. Moneim. 2021. Effect of natural and chemical colorant supplementation on performance, egg-quality characteristics, yolk fatty-acid profile, and blood constituents in laying hens. Sustainability. 13(8): 4503.

Samli, H. E., A. Agma and N. Senkoylu. 2005. Effects of storage time and temperature on egg quality in old laying hens. J. Appl.Poult Res. 14: 548–553.

Sayuti, R. 2002. Prospek pengembangan agribisnis ayam buras sebagai

usaha ekonomi pedesaan. FAE. 22(1): 40–49.

Schneider., W. J and J. Nimpf. 2003. LDL receptor relatives at the crossroad of endocytosis and signaling. Cellular and Molecular Life Sciences. 60: 892–903.

Sekeroglu, A and E. 2009. Altuntas effects of egg weight on egg quality characteristics. Journal of Science Food and Agriculture. 89(1): 379–383.

Şekeroğlu. A., E. Altuntaş. 2009. Effect of egg shape index on mechanical properties of chicken eggs. J. Food Eng. 85: 606–612.

Skřivan, M., M. Englmaierová, E. Skřivanová, I. Bubancová. 2015. Increase in lutein and zeaxanthin content in the eggs of hens fed marigold flower extract. Czech J. Anim. Sci. 60(3): 89–96.

Silversides, F. G, and K. Budgell. 2004. The relationships among measures of egg albumen height, pH and whipping volume. Poultry Science. 83(10): 1619–1624.

Simanungkalit. F. J dan R. Simanjuntak. 2020. Rencana bangun Computer Vision System (CVS) sebagai instrumen pengukuran warna buah. Agritech 40(1): 21–30.

Spasevski. N., D. Dragojlović, D. Čolović, S. Vidosavljević, T. Peulić, S. Rakita and Kokić. B. 2018. Influence of dietary carrot and paprika on egg physical characteristics and yolk color, Food and Feed Research. 45(1): 59–66.

Stahl, W and H. Sies. 2003. Antioxidant activity of carotenoids. Molecular Aspects of Medicine. 24(6): 345–351.

Steel., R. G. D and J. H. Torrie. 1989 Principles and Procedures of Statstics. New York: McGraw-Hill Book Co

Stolarczyk. J and J. Janick. 2011. Carrot: History and iconography. Chronic Horticulturae 51(2): 13–18.

Sudarman. A., Sumiati, R. Kaniadewi. 2012. Performance of broiler offered drinking water contained water extracted beliuntas (Pluchea indica L.) Leaf and Sugar cane. Media Peternakan: 117-122.

Suk, Y. O., and C. Park. 2001. Effect of breed and age of hens on the yolk to albumen ratio in two different genetic stocks. Poultry Science Journal. 80: 855–858.

Surai, P, F., R. C. Noble and B. K. Speake. 1996. Tissue-specific differences in antioxidant distribution and susceptibility to lipid peroxidation during development of the chick embryo. Biochimica et Biophysica Acta. 1304(1): 1–10.

Surai P. F., B. K. Speake. 1998. Distribution of carotenoids from the yolk to the tissues of the chick embryo. The journal of nutritional biochemistry. 9(11): 645-651.

Surai, P. F., 1999. Vitamin E in avian reproduction [Reviews]. Poultry and Avian Biology. 10: 1–60.

Surai. P. F., B. K. Speak and N. H. C. Spark. 2001. Carotenoid in avian nutrition and embryonic development. Journal of Poultry Science. 38: 117-145.

Surai. P. F. 2002. Natural Antioxidants in Avian Nutrition and Reproduction. Nottingham University Press: Nottingham.

Surai, A. P., P. F. Surai, W. Steinberg, W. G. Wakeman, B. K. Speake, and N. H. C. Sparks. 2003. Effect of canthaxanthin content of the maternal diet on the antioxidant system of the developing chick. British poultry science. 44(4): 612–619.

Surai, P. F. 2012. The antioxidant properties of canthaxanthin and its potential effects in the poultry eggs and on embryonic development of the chick, Part 2. World's Poultry Science Journal. 68: 717–726.

Surai. F. P. 2016. Antioxidant systems in poultry biology: Superoxide dismutase. Journal of Animal Research and Nutrition. 1(1): 1–17.

Surai. P, F., V. I. Fisinin, and F. Karadas. 2016. Antioxidant system in chick embryo development. part 1. Vitamin E, carotenoid, and selenium. Animal nutrition. 2: 1–11.

Surai, P. F., and I. I. Kochish. 2018. Oxidative damage of biological molecules on animal metabolism and physiology. Proc. Anim. Nutr. Conf. Canada, Edmonton. 234–251.

Sukarini, N. E. 2020 Fermentation of carrot juice waste (Daucus carota L) with probiotics and utilization in races of chicken layers on egg production and quality. 2(2): 73–81.

Surles, R., N. Weng, P. Simon and S. Tanumihardjo. 2004. Carotenoid profiles and consumer sensory evaluation of specialty carrots. Journal of Agricultural Food Chemistry. 52(11): 3417–3421.

Takdir, M., P. Asnidar, A. B. L. Ishak. 2020. Performa produksi ayam KUB fase pertama bertelur pada peternak di Kabupaten Sigi Sulawesi Tengah. Prossiding Semnas TPV 2019. 710–717.

Tesar D.B., E. J. Cheung, P. J. Bjorkman. 2008. The chicken yolk sac IgY receptor, a mammalian mannose receptor family member, transcytoses IgY across polarized epithelial cells. Mol Biol Cell. 19: 1587–1593.

United States Department of Agriculture 2008 National nutrient database for standard reference. www.nal.usda.gov.

Urso, U. R. A., F. Dahlke, A. Maiorka, I. J. M. Bueno, A. F. Schneider, D. Surek, and C. Rocha. 2015. Vitamin E and selenium in broiler breeder diets: Effect on live performance, hatching process, and chick quality. Poultry Science. 94(5): 976–983.

Van den Berg. H., R. Faulks, H. F. Granado, J. Hirschberg, B. Olmedilla, G. Sandmann and W. Stahl. 2000. The potential for the improvement of carotenoid levels in foods and the likely systemic effects. Journal of the Science of Food and Agriculture. 80(7): 880–912.

Van der Wagt, I., I. C. de Jong, M. A. Mitchell, R. Molenaar, and H. van den Brand. 2020. A review on *yolk sac* utilization in poultry. Poultry science. 99(4): 2162–2175.

Vleck, C. M and D. Vleck. 1997. Avian Energetics and Nutritional Ecology. New York: Chapman and Hall.

Widiyaningrum. P., Lisdiana and N. R. Utami. 2016. Egg production and hatchability of local ducks under semi intensive vs extensive managements. Journal of the Indonesian Tropical Animal Agriculture 41(2): 77–82.

Wijtten, P. J. A. 2011. Nutrition Driven Small Intestinal Development and Performance of Weaned Pigs and Young Broilers [PhD thesis]. Wageningen: Wageningen University.

Williams. W. P., R. E. Davies and J. R. Couch. 1963. The utilization of carotenoids by the hen and chick. Poultry Science. 42(3): 691–699.

Yadgary. L, A. Cahaner A, O. Kedar O, Z. Uni. 2010. *Yolk sac* nutrient composition and fat uptake in late-term embryos in eggs from young and old broiler breeder hens. Poultry Science. 89(11). 2441–2452.

Yang. J., X. Ding. S. Bai, J. Wang, Q. Zeng, H. Peng, K. Zhang. 2020. The effects of broiler breeder dietary vitamin E and egg storage time on the quality of eggs and newly hatched chicks. Animals. 10(8): 1–13.

Yimenu, S. M., J. Y. Kim. and B. S. Kim. 2017. Prediction of egg freshness during storage using electronic nose. Poultry Science. 96: 3733–3746.

Yoho, D. E., J. R. Moyle, A. D. Swaffar, R. K. Bramwell. 2008. Effect of incubating poor quality broiler breeder hatching eggs on overall hatchability and hatch of fertile. Poultry Science. 87(1): 148.

Yoon, K., M. Cha, S. Shin, K. Kim. 2005. Enzymatic production of a soluble-fibre hydrolyzate from carrot pomace and its sugar composition. Food Chemistry. 92(1): 151–157.

Yukio, A., K. Sato, K. Takahashi, Y. Takahashi, A. Furuki, S. Konashi, H. Nishida, H. Tsunekawa, Y. Hayasaka, and H. Nagao. 2000. Pigmentation of egg yolk with yeast Phaffia rhodozyma containing high concentration of astaxanthin in laying hens fed on a low-carotenoid diet. Jpn. Poult. Sci. 37: 77–85.

Zakaria, A. H. 1999. Ovarian follicular development in young and old laying hen. Arch. Geflu¨ gelkd. 63: 6–12.

Zhang. Y., S. Y. Chen, T. Hsu, R. M. Santella. 2002. Immunohistochemical detection of malondialdehyde-DNA adducts in human oral mucosa cells. Carcinogenesis. 23(1): 207–211.

Zhang. D and Y. Hamauzu. 2004. Phenolic compounds and their antioxidant properties in different tissues of carrots (*Daucus carota L*.). Journal of Food, Agriculture and Environment. 2(1): 95–100.

Zhang. G and L. T. Sunkura. 2014. Avian antimicrobial host peptides: From biology to therapeutic application. Pharmaceuticals. 7: 220–247.

Zhang. H and E. Wong. 2019. Expression of avian β-defensin mRNA in the chicken yolk sac. Dev. and Comp. Imm. 95(7): 89–95.

LAMPIRAN

Lampiran 1. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Konsumsi Pakan

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	3	86.97	4.909	2.834	74.78	99.17
70 ml	3	87.50	3.391	1.958	79.07	95.92
50 ml	3	87.18	9.304	5.372	64.07	110.29
30 ml	3	89.75	16.911	9.764	47.74	131.76
Total	12	87.85	8.693	2.509	82.33	93.37

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	14.855	3	4.952	.049	.985
Within Groups	816.305	8	102.038		
Total	831.160	11			

Lampiran 2. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Konsumsi Air minum

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	3	227.6057	8.06315	4.65526	207.5757	247.6357
70 ml	3	261.5889	14.53741	8.39318	225.4760	297.7018
50 ml	3	243.9793	7.50960	4.33567	225.3244	262.6342
30 ml	3	255.6754	27.04046	15.61181	188.5032	322.8476
Total	12	247.2123	19.41744	5.60533	234.8751	259.5496

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
2.879	3	8	.103

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2019.546	3	673.182	2.531	.131
Within Groups	2127.862	8	265.983		
Total	4147.408	11			

Lampiran 3. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Persentase Bertelur

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	3	38.4354	8.98790	5.18917	16.1082	60.7626
70 ml	3	47.3537	2.52207	1.45612	41.0886	53.6189
50 ml	3	33.7030	12.78932	7.38392	1.9326	65.4735
30 ml	3	35.4592	21.43313	12.37442	-17.7837	88.7020
Total	12	38.7378	12.61835	3.64260	30.7205	46.7552

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
4.135	3	8	.048

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	331.272	3	110.424	.622	.620
Within Groups	1420.178	8	177.522		
Total	1751.449	11			

Lampiran 4. Hasil Perhitungan Sidik Pemberian Jus Wortel dengan Level Berbeda Terhadap Ragam Berat Telur

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	3	48.8562	1.56219	.90193	44.9755	52.7369
70 ml	3	50.9914	.79357	.45817	49.0200	52.9627
50 ml	3	51.9338	1.53781	.88785	48.1137	55.7539
30 ml	3	49.6128	2.50700	1.44741	43.3851	55.8405
Total	12	50.3485	1.91938	.55408	49.1290	51.5681

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
2.120	3	8	.176

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	17.084	3	5.695	1.944	.201
Within Groups	23.440	8	2.930		
Total	40.524	11			

Lampiran 5. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Massa Telur

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	3	18.7537	4.30042	2.48285	8.0709	29.4366
70 ml	3	24.1377	1.08202	.62470	21.4498	26.8256
50 ml	3	17.4802	6.46992	3.73541	1.4081	33.5524
30 ml	3	17.9485	11.20831	6.47112	-9.8945	45.7915
Total	12	19.5800	6.46584	1.86653	15.4718	23.6882

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
4.947	3	8	.031

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	85.577	3	28.526	.610	.627
Within Groups	374.301	8	46.788		
Total	459.878	11			

Lampiran 6. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Konversi Pakan

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	3	4.7845	.96400	.55656	2.3898	7.1792
70 ml	3	3.6322	.27210	.15710	2.9563	4.3081
50 ml	3	5.4482	1.86806	1.07852	.8077	10.0887
30 ml	2	4.0726	.13938	.09855	2.8204	5.3249
Total	11	4.5218	1.20684	.36388	3.7111	5.3326

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
3.128	3	7	.097

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.559	3	1.853	1.440	.310
Within Groups	9.005	7	1.286		
Total	14.565	10			

Lampiran 7. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Berat Telur

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	3	48.8562	1.56219	.90193	44.9755	52.7369
70 ml	3	50.9914	.79357	.45817	49.0200	52.9627
50 ml	3	51.9338	1.53781	.88785	48.1137	55.7539
30 ml	3	49.6128	2.50700	1.44741	43.3851	55.8405
Total	12	50.3485	1.91938	.55408	49.1290	51.5681

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
2.120	3	8	.176

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	17.084	3	5.695	1.944	.201
Within Groups	23.440	8	2.930		
Total	40.524	11			

Lampiran 8. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Persentase Kerabang

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	3	10.4860	1.81017	1.04510	5.9893	14.9827
70 ml	3	10.2797	1.10963	.64065	7.5232	13.0362
50 ml	3	10.2770	.97854	.56496	7.8462	12.7079
30 ml	3	10.7516	.29174	.16844	10.0269	11.4763
Total	12	10.4486	1.02491	.29587	9.7974	11.0998

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
2.010	3	8	.191

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.453	3	.151	.109	.952
Within Groups	11.101	8	1.388		
Total	11.555	11			

Lampiran 9. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Persentase Kuning Telur

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	3	33.1445	2.03924	1.17735	28.0787	38.2102
70 ml	3	31.7939	2.72938	1.57581	25.0138	38.5741
50 ml	3	33.4206	5.14916	2.97287	20.6294	46.2119
30 ml	3	32.3351	1.15968	.66954	29.4543	35.2159
Total	12	32.6735	2.76238	.79743	30.9184	34.4287

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
1.422	3	8	.306

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.005	3	1.668	.169	.914
Within Groups	78.934	8	9.867		
Total	83.938	11			

Lampiran 10. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Persentase Albumen

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	3	54.6458	.95718	.55263	52.2680	57.0235
70 ml	3	55.4923	4.27078	2.46574	44.8831	66.1015
50 ml	3	53.7945	5.93228	3.42500	39.0579	68.5311
30 ml	3	53.7895	2.06620	1.19292	48.6568	58.9222
Total	12	54.4305	3.34666	.96610	52.3042	56.5569

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
2.480	3	8	.135

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.968	3	1.989	.136	.936
Within Groups	117.234	8	14.654		
Total	123.201	11			

Lampiran 11. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Yolk Indeks

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	3	.3854	.00952	.00550	.3618	.4091
70 ml	3	.3969	.01920	.01109	.3492	.4446
50 ml	3	.3230	.01937	.01118	.2749	.3711
30 ml	3	.3765	.01656	.00956	.3354	.4176
Total	12	.3705	.03281	.00947	.3496	.3913

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
1.220	3	8	.364

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.010	3	.003	11.574	.003
Within Groups	.002	8	.000		
Total	.012	11			

Duncan

	LevelJuss	N	Subset for alpha = 0.05	
			1	2
Duncan[a]	50 ml	3	.3230	
	30 ml	3		.3765
	Kontrol	3		.3854
	70 ml	3		.3969
	Sig.		1.000	.189

Lampiran 12. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Haugh Unit

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	3	81.8633	1.62608	.93882	77.8239	85.9027
70 ml	3	84.9663	1.55595	.89833	81.1011	88.8315
50 ml	3	84.9967	9.98127	5.76269	60.2018	109.7915
30 ml	3	84.0800	5.78526	3.34012	69.7086	98.4514
Total	12	83.9766	5.18573	1.49699	80.6817	87.2714

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
4.341	3	8	.043

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	19.490	3	6.497	.188	.902
Within Groups	276.320	8	34.540		
Total	295.810	11			

Lampiran 13. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Warna Yolk L* (Gelap dan Terang)

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	6	64.50	11.077	4.522	52.88	76.12
70 ml	6	71.17	10.381	4.238	60.27	82.06
50 ml	6	66.17	10.028	4.094	55.64	76.69
30 ml	6	67.00	7.043	2.875	59.61	74.39
Total	24	67.21	9.436	1.926	63.22	71.19

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
.412	3	20	.746

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	144.792	3	48.264	.507	.682
Within Groups	1903.167	20	95.158		
Total	2047.958	23			

Lampiran 14. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Warna Yolk a* (Merah dan Hijau)

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	6	2.50	3.209	1.310	-.87	5.87
70 ml	6	1.67	1.366	.558	.23	3.10
50 ml	6	3.50	3.017	1.232	.33	6.67
30 ml	6	.83	1.602	.654	-.85	2.51
Total	24	2.13	2.490	.508	1.07	3.18

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
1.408	3	20	.270

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	23.458	3	7.819	1.312	.298
Within Groups	119.167	20	5.958		
Total	142.625	23			

Lampiran 15. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Warna Yolk b* (Kuning dan Biru)

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	6	66.67	8.140	3.323	58.12	75.21
70 ml	6	72.00	8.295	3.386	63.30	80.70
50 ml	6	68.50	8.712	3.557	59.36	77.64
30 ml	6	63.67	1.033	.422	62.58	64.75
Total	24	67.71	7.457	1.522	64.56	70.86

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
3.652	3	20	.030

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	218.792	3	72.931	1.376	.279
Within Groups	1060.167	20	53.008		
Total	1278.958	23			

Lampiran 16. Hasil Analisis Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Karotenoid Kuning Telur

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	3	1.2926	.30219	.17447	.5419	2.0433
70 ml	3	.9703	.12903	.07450	.6497	1.2908
50 ml	3	1.0915	.19924	.11503	.5965	1.5864
30 ml	3	.9687	.10656	.06152	.7040	1.2334
Total	12	1.0808	.21894	.06320	.9417	1.2199

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
1.687	3	8	.246

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.209	3	.070	1.755	.233
Within Groups	.318	8	.040		
Total	.527	11			

Lampiran 17. Hasil Perhitungan Pemberian Jus Wortel dengan Level Berbeda Terhadap Analisis Sidik Ragam Karotenoid *Residual Yolk Sac*

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	3	.6331	.31723	.18315	-.1549	1.4211
70 ml	3	.9919	.87279	.50391	-1.1762	3.1601
50 ml	3	1.5630	1.11485	.64366	-1.2065	4.3324
30 ml	3	.6143	.34710	.20040	-.2480	1.4765
Total	12	.9506	.75217	.21713	.4727	1.4285

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
2.950	3	8	.098

ANOVA

Between Groups	Sum of Squares	df	Mean Square	F	Sig.
Within Groups	1.772	3	.591	1.061	.418
Total	4.452	8	.556		

Lampiran 18. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Molandialdehid Residual Yolk Sac

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	3	.1760	.02816	.01626	.1060	.2460
70 ml	3	.1987	.08214	.04742	-.0054	.4027
50 ml	3	.2387	.08776	.05067	.0207	.4567
30 ml	3	.1513	.01550	.00895	.1128	.1898
Total	12	.1912	.06278	.01812	.1513	.2311

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
5.392	3	8	.025

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.012	3	.004	1.067	.416
Within Groups	.031	8	.004		
Total	.043	11			

Lampiran 19. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Tingkat Fertilitas

Descriptives

Perlakuan	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	7	91.0466	8.22884	3.11021	83.4362	98.6571
70 ml	7	81.7491	9.20251	3.47822	73.2382	90.2600
50 ml	7	76.0545	11.40110	4.30921	65.5102	86.5987
30 ml	7	86.4826	10.22672	3.86534	77.0245	95.9408
Total	28	83.8332	10.86817	2.05389	79.6190	88.0475

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
.223	3	24	.879

Anova: Tests of Between-Subjects Effects

Dependent Variable

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1242.830[a]	9	138.092	1.277	.314
Kelompok Penetasan	375.494	6	62.582	.579	.742
Level Juss Wortel	867.336	3	289.112	2.674	.078
Error	1946.331	18	108.130		
Total	199973.396	28			
Corrected Total	3189.161	27			

Duncan[a,b]

Level Juss Wortel	N	Subset	
		1	2
50	7	76.0545	
70	7	81.7491	81.7491
30	7	86.4826	86.4826
0	7		91.0466
Sig.		.091	.130

Lampiran 20. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Daya Tetas

Descriptives

Perlakuan	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	7	82.9664	10.11093	3.82157	73.6154	92.3175
70 ml	7	83.9464	6.76119	2.55549	77.6933	90.1994
50 ml	7	76.6180	14.90062	5.63190	62.8372	90.3987
30 ml	7	92.8487	4.96409	1.87625	88.2576	97.4397
Total	28	84.0949	11.06293	2.09070	79.8051	88.3846

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
5.415	3	24	.005

Anova: Tests of Between-Subjects Effects

Dependent Variable: DayaTetas

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1775.692[a]	9	197.299	2.323	.061
Kelompok Penetasan	838.894	6	139.816	1.646	.192
Level Juss Wortel	936.799	3	312.266	3.677	.032
Error	1528.798	18	84.933		
Total	201318.948	28			
Corrected Total	3304.490	27			

a. R Squared = .537 (Adjusted R Squared = .306)

Duncan[a,b]

Level Juss Wortel	N	Subset	
		1	2
50	7	76.6180	
Kontrol	7	82.9664	82.9664
70	7	83.9464	83.9464
30	7		92.8487
Sig.		.175	.072

Lampiran 21. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Berat Tetas

Descriptives

Perlakuan	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	7	33.4496	2.45328	.92725	31.1806	35.7185
70 ml	7	35.2006	.79816	.30167	34.4624	35.9387
50 ml	7	36.1596	2.02950	.76708	34.2827	38.0366
30 ml	7	34.4029	.73719	.27863	33.7211	35.0846
Total	28	34.8032	1.88406	.35605	34.0726	35.5337

Anova: Test between subject effects

Dependent Variable: Berat Tetas

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	45.390[a]	9	5.043	1.799	.138
Kelompok Penetasan	17.457	6	2.909	1.038	.434
Level Juss Wortel	27.933	3	9.311	3.322	.043
Error	50.451	18	2.803		
Total	34011.107	28			
Corrected Total	95.841	27			

Duncan

Level Juss Wortel	N	Subset	
		1	2
0	7	33.4496	
30	7	34.4029	34.4029
70	7	35.2006	35.2006
50	7		36.1596
Sig.		.079	.078

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 2.803.
a. Uses Harmonic Mean Sample Size = 7.000.
b. Alpha = .05.

Lampiran 22. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Persentase *Residual Yolk Sac*

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	6	13.5578	3.27503	1.33702	10.1209	16.9947
70 ml	6	13.8906	3.68789	1.50557	10.0204	17.7608
50 ml	6	16.6340	4.89149	1.99694	11.5007	21.7673
30 ml	6	12.8462	2.83963	1.15928	9.8662	15.8262
Total	24	14.2321	3.79445	.77454	12.6299	15.8344

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
.486	3	20	.696

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	49.568	3	16.523	1.174	.345
Within Groups	281.583	20	14.079		
Total	331.150	23			

Lampiran 23. Hasil Perhitungan Sidik Ragam Pemberian Jus Wortel dengan Level Berbeda Terhadap Persentase Embrio

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Kontrol	6	82.6712	3.91800	1.59952	78.5595	86.7829
70 ml	6	82.6896	7.87242	3.21390	74.4280	90.9512
50 ml	6	81.3128	3.38831	1.38327	77.7570	84.8686
30 ml	6	83.6318	6.09226	2.48715	77.2384	90.0252
Total	24	82.5764	5.29973	1.08180	80.3385	84.8143

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
1.232	3	20	.324

ANOVA

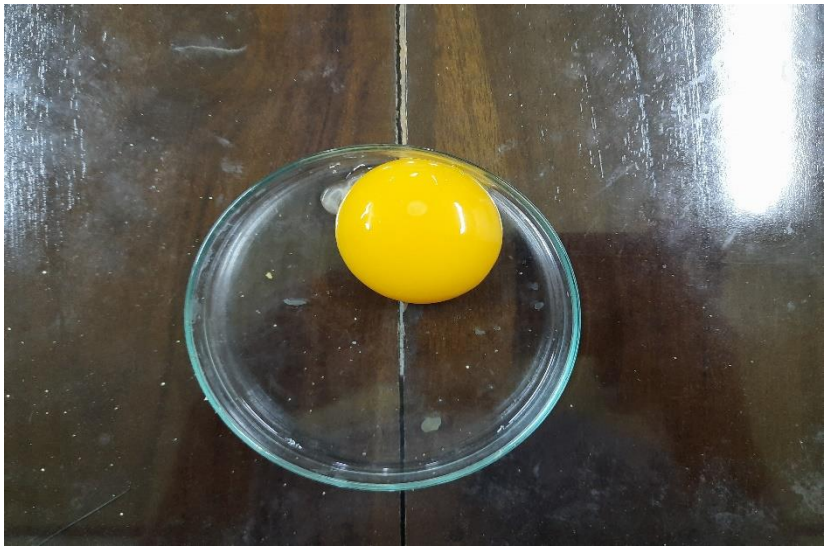
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	16.394	3	5.465	.174	.913
Within Groups	629.610	20	31.480		
Total	646.004	23			

Dokumentasi

Dok 1. Persiapan pembuatan juss wortel

Dok 2. Pemberian jus wortel pada induk ayam

Dok 3. Produksi telur ayam buras penelitian



Dok 4. Pengukuran kualitas internal telur

Dok 5. Persiapan telur masuk kedalam mesin tetas

Dok 6. DOC dari telur hasil pemberian jus wortel

RIWAYAT HIDUP

Muhammad Yazid Nasruddin dilahirkan di Pangkajene, kabupaten Sidenreng Rappang pada 19 Agustus 1996. Anak pertama dari 2 bersaudara lahir dari pasangan Drs. Nasruddin Waris., M.Si dan Eliza Farauk., S.sos. Penulis mengenyam Sekolah Dasar di SDN 1 Pangsid, penulis melanjutkan Pendidikan di SMPN 1 Pangsid tahun 2008-2011, dan menyelesaikan pendidikan di Sekolah Menengah Atas di SMAN 1 Pangsid di tahun 2014. Penulis melanjutkan pendidikan di Fakultas Peternakan Universitas Hasanuddin pada tahun 2014, menyelesaikan studi pada tahun 2018 dengan judul skripsi “Subtitusi Bungkil Kedelai Dengan Pucuk *Indigofera Zollingeriana* dan Penambahan Kunyit Terhadap Konsumsi Protein Kasar, Serat Kasar, dan Retensi Nitrogen”. Penulis melanjutkan pendidikan di Sekolah Pasca Sarjana Prodi Ilmu dan Teknologi Peternakan pada tahun 2019. Penulis menjadi asisten praktikum di laboratorium produksi ternak unggas sejak tahun 2017-sekarang dan menjadi Editor Formating prosiding dan jurnal Fakultas Peternakan Universitas Hasanuddin tahun 2018-2021.