

DAFTAR PUSTAKA

- Abeyrathne E. D. N. S., Lee H. Y., Suh, W. J., and Ahn., D. U. 2015. Enzymatic hydrolysis of ovomucoid and the functional properties of its hydrolysates. *Poultry Science*, 94:2280–2287
- Abeyrathne E. D. N. S., Lee H. Y., Suh, W. J., and Ahn., D. U. 2014. Separation of ovotransferrin and ovomucoid from chicken egg white. *Poultry Science*, 93 :1010–1017
- Abeyrathne, E. D. N. S., Huang, X., and Anh, D. U. 2018. Antioxidant, angiotensin-converting enzyme inhibitory activity and other functional properties of egg white proteins and their derived peptides – A review. *Poultry Science*, 97:1462–1468
- Abeyrathne, E. D. N. S., Lee, H. Y., and Ahn, D. U. 2013. Egg white proteins and their potential use in food processing or as nutraceutical and pharmaceutical agents—A review. *Poultry Science*, 92, 3292–3299
- Ahmad, M. M., Froning, G. W., Mather, F. B., and Bashford, L. L. 1976. Relationships of Egg Specific Gravity and Shell Thickness to Quasi-static Compression Tests. *Poultry Science*, Vol. 55, Issue 4, Pages 1282-1289
- Alasahan, S., Akpinar, G. C., Canogullari, S., and Baylan, M. 2016. The impact of eggshell colour and spot area in Japanese quails: I. eggshell temperature during incubation and hatching results. *Revista Brasileira de Zootecnia*, 45(5):219-229
- Al-Batshan, H. A., Scheideler, S. E., Black, B. L., Garlich, J. D. and Anderson, K. E. 1994. Duodenal calcium uptake, femur ash, and eggshell quality decline with age and increase following molt. *Poultry Science*, Vol. 73, Issue 10 : 1590–1596.
- Amorim, F. G., Coitinho, L. B., Dias, A. T., Friques, A. G. F., Monteiro, B. L., Rezende, L. C. D. de, Pereira, T. de M. C., Campagnaro, B. P., De Pauw, E., Vasquez, E. C., and Quinton, L. 2019. Identification of new bioactive peptides from Kefir milk through proteopeptidomics: Bioprospection of antihypertensive molecules. *Food Chemistry*, 282, 109–119.
- Annadurai, P., Annadurai, V., Yongkun, M., Pugazhendhi, A., and Dhandayuthapani, K. 2021. Phytochemical composition, antioxidant and antimicrobial activities of *Plecosperrum spinosum* Trecul. *Process Biochemistry*, Vol. 100, Pages 107-116
- Anokwah, D., Kwatia, E. A., Amponsah, I. K., Jibira, Y., Harley, B. K., Ameyaw, E. O., Obese, E., Biney, R. P., and Mensah, A. Y. 2022. Evaluation of the anti-

inflammatory and antioxidant potential of the stem bark extract and some constituents of *Aidia genipiflora* (DC.) dandy (rubiaceae). *Heliyon*. 8 (8), e10082.

AOAC. 2005. Official Methods of Analysis. 18th ed. AOAC International, Gaithersburg, MD.

Apak, R., Gorinstein, S., Böhm, V., Schaich, K. M., Özyürek, M., and Güçlü, K. 2013. Methods of measurement and evaluation of natural antioxidant capacity/activity (IUPAC Technical Report)*. *Pure Appl. Chem.*, Vol. 85, No. 5, pp. 957-998

Arabshahi-Delouee, S., and Urooj, A. 2007. Antioxidant properties of various solvent extracts of mulberry (*Morus indica* L.) leaves. *Food Chemistry*, 102, 1233–1240

Ashby, E. C. 1988. Single-electron Transfer, A Major Reaction Pathway in Organic Chemistry. An answer to recent criticisms. *Acc. Chem. Res*, 21, 414–421.

Azizah, N. F. N., Evanuarini, H., and Widyastuti, E. S. 2022. Physicochemical characteristics of egg white powder using *Lactobacillus bulgaricus*. *International Conference on Sustainable Animal Resource and Environment*, 1020, 012028

Baliyan, S., Mukherjee, R., Priyadarshini, A., Vibhuti, A., Gupta, A., Pandey, R. P., and Chang, C. M. 2022. Determination of Antioxidants by DPPH Radical Scavenging Activity and Quantitative Phytochemical Analysis of *Ficus religiosa*. *Molecules*, 27, 1326

Bar, A., Razaphkovsky, V., and Vax, E. 2002. Re-evaluation of calcium and phosphorus requirements in aged in laying hens. *British Poultry Science*, 43 : 261-29

Baratzadeh, M. H., Asoodeh, A., and Chamani, J. 2013. Antioxidant peptides obtained from goose egg white proteins by enzymatic hydrolysis. *International Journal of Food Science and Technology*, 48, 1603–1609

Benede, S and Molina, E. 2020. Chicken Egg Proteins and Derived Peptides with Antioxidant Properties. *Food Journal*. 9 – 735

Bennett, C. D. 1993. Measuring table eggshell quality with one specific gravity salt solution. *J. Appl. Poult. Res.*, 2:130–134

Besharati, M., Leila Fathi, L., Amirdahri, S., Nemati, Z., Palangi, V., Lorenzo, J. M., Maggiolino, A., and Centoducati, G. 2023. Reserves of Calcium, Copper, Iron, Potassium, Magnesium, Manganese, Sodium, Phosphorus, Strontium and Zinc in Goose Egg Yolk during Embryo Development. *Animals*, 13, 1925

- Bhalodia, N. R. Nariya, P. B., Acharya, R. N., and Shukla, V. J. 2013. In vitro antioxidant activity of hydro alcoholic extract from the fruit pulp of *Cassia fistula* Linn. *Jurnal of AYU Pharmacological Study*, Vol 34: Issue 2
- Blois, M. S. 1958. Antioxidant Determinations by the Use of a Stable Free Radical. *Nature*, 181, 1199–1200.
- Bottom, C. B., Hanna, S. S. and Siehr, D. J. 1978. Mechanism of the ninhydrin reaction. *Biochemical Education*, Vol. 6, No. 1, 4-5.
- Boutagef, A., Arroume, N. N., Manni, L., Ravallec, R., Barkia, A., Guillochon, D., and Nasri, M. 2010. Purification and Identification of novel antioxidant peptides from enzymatic hydrolysates of *Sardinella (Sardinella aurita)* by-product protein. *Food Chem*, 118 (3) : 559-565.
- Bovšková, H., Míková, K., and Panovská, Z. 2014. Evaluation of Egg Yolk Colour. *Czech J. Food Sci.*, Vol. 32, No. 3 : 213–217
- Campbell, L., Raikos, V., and Euston, S. R. 2003. Modification of functional properties of egg-white proteins. *Food Journal*, 47(6), 369–376.
- Carrillo, S., Rios, V. H., Calvo, C., Carranco, M. E., Casas, M., and Perez-Gil, F. 2012. N-3 fatty acid content in eggs laid by hens fed with marine algae and sardine oil and stored at different times and temperatures. *J. Appl. Phycol*, 24, 593–599.
- Carrillo, W., Spindola, H., Ramos, M., Recio, I., and Carvalho, E. J. 2016. Anti-Inflammatory and Anti-Nociceptive Activities of Native and Modified Hen Egg White Lysozyme. *Journal of Medicinal Food*, 19 (10), 1-5
- Chalamaiah, M., Keskin, S., Hong, H., and Wu, J. 2019. Regulatory requirements of bioactive peptides (protein hydrolysates) from food proteins. *Journal of Functional Foods*, 58, 123–129
- Chandra, S., Dey, P., and Bhattacharya, S. 2012. Preliminary In Vitro Assessment of Anti-Inflammatory Property of *Mikania Scandens* Flower Extract. *Journal of Advanced Pharmacy Education & Research* 2 (1) 25-31, ISSN 2249-3379
- Chang, Lahti, T., Tanaka, T., and Nickerson, M. T. 2018. Egg proteins: Fractionation, bioactive peptides and allergenicity. *Journal of the Science of Food and Agriculture*, 98 (15), 5547–5558.
- Chen, C., Chi, Y., Zao, Y., and Lv, L. 2012. Purification and identification of antioxidant peptides from egg white protein hydrolysate. *Amino Acids Journal*, 43:457–466

- Chew, L. Y., Toh, G. T., and Ismail, A. 2019. Chapter 15 - Application of Proteases for the Production of Bioactive Peptides. *Enzymes in Food Biotechnology*, Pages 247-261
- Chohra, D., Ferchichia, L., Cakmak, Y. S., Zengin, G., and Alsheikh, S. M. 2020. Phenolic profiles, antioxidant activities and enzyme inhibitory effects of an Algerian medicinal plant (*Clematis cirrhosa* L.). *South African Journal of Botany*, 132, 164-170
- Chrzanowska, M., Skiba, T., Chrusciel, K., Kopec, W., and Korzeniowska, M. 2005. Comparison of cystatin, lysozyme and Anti-trypsin agents activities in geese egg white. *European Symposium on the Quality of Eggs and Egg Products* Doorwerth, The Netherlands, 23-26
- Cruz-Casas, D. E., Aguilar, C. N., Ascacio-Valdés, J. A., Rodríguez-Herrera, R., Chavez-Gonzalez, M. L., and Flores-Gallegos, A. C. 2021. Enzymatic hydrolysis and microbial fermentation: The most favorable biotechnological methods for the release of bioactive peptides. *Food Chemistry: Molecular Sciences*, 3, 100047
- Cui, Q., Sun, Y., Zhou, Z., Cheng, J., and Guo, M. 2021. Effects of Enzymatic Hydrolysis on Physicochemical Properties and Solubility and Bitterness of Milk Protein Hydrolysates. *Foods*, 10, 2462.
- da Silva, A. C., Queiroz, A. E. S. D. F., Oliveira, J. T. C., Medeiros, E. V., de Souza-Motta, C. M., and Moreira, K. A. 2019. Antioxidant Activities of Chicken Egg White Hydrolysates Obtained by New Purified Protease of *Aspergillus avenaceus* URM 6706. *Food/Feed Science and Technology*, Vol 62: e19180062
- Das, K., Asdaq, S. M. B., Khan, M. S., Amrutha, S., Alamri, A., Alhomrani, M., Alsanie, W. F., Bhaskar, A., Shree, G. C., and Harshitha, P. 2022. Phytochemical investigation and evaluation of in vitro anti-inflammatory activity of *Euphorbia hirta* ethanol leaf and root extracts: a comparative study. *Journal of King Saud. University-Science.*, 34 (7), 102261.
- Davalos, A., M. Miguel, B. Bartolome, and R. Lopez-Fandino, 2004. Antioxidant Activity of Peptides Derived From Egg White Protein Enzymatic Hydrolysis. *J. Food Protec.*, 67(9): 1939–1944.
- Dawes, C. M. 1975. Acid-Base Relationships Within The Avian Egg. *Journal of Biological Review*, PP, 351-371
- Deeming, D. C. 2011. A review of the relationship between eggshell colour and water vapour conductance, *Avian Biology Research*, 4, (4), 224 – 230

- Dolińska, B., Zieliński, M., Dobrzański, Z., Chojnacka, K., Opaliński, S., and Ryszka, F. 2012. Influence of Incubation Conditions on Hydrolysis Efficiency and Iodine Enrichment in Baker's Yeast. *Biol Trace Elem Res*, 147:354–358
- Dorman, H. J. D., Kosar, M., Kahlos, K., Holm, Y., and Hiltunen, R. 2003. Antioxidant properties and composition of aqueous extracts from *Mentha* species, hybrids, varieties, and cultivars. *Journal of Agricultural and Food Chemistry*, 51, 4563–4569
- Eke, M. O., Olaitan, N. I., and Ochefu, J. H. 2013. Effect of Storage Condition on the Quality Attributes of Shell (Table) Eggs. *Nigerian Food Journal*, Vol. 31 No. 2, pages 18 – 24
- Eroglu, M., Baykalir, Y., and Erisir, Z. 2021. The Effect of Different Storage Period on Some Egg Quality Characteristics and Ovalbumin Levels In Goose Eggs. *Emirates Journal of Food and Agriculture*, 33(8): 699-703
- Feddern, V., Prá, M. C. D., Mores, R., Nicoloso, R. d S., Coldebella, A., and de Abreu, P. G. 2017. Egg quality assessment at different storage conditions, seasons and laying hen strains. *Ciência e Agrotecnologia*, 41(3):322-333
- Fernandez-Tome, S., Montalban-Arques, A., Díaz-Guerra, A., Galvan-Roman, J. M., Marin, A. C., Mora-Gutierrez, I., Ortega Moreno, L., Santander, C., Sanchez, B., Chaparro, M., Gisbert, J. P., and Bernardo, D. 2019. Peptides encrypted in the human intestinal microbial-exoproteome as novel biomarkers and immunomodulatory compounds in the gastrointestinal tract. *Journal of Functional Foods*, 52, 459–468
- Galanakis, C. M. 2021. Functionality of Food Components and Emerging Technologies. *Food Journal*, 10 (1) : 128
- Gautam, S. R. B., Maurya, K., K. Rai, M., Singh, R. J., Maurya, R. M., Mehta, R. K., Kumar, S., Kumar, S., and Verma, S. 2018. Consumer Behavior Towards Functional Food in Eastern UP-A Study of Market Drivers & Challenges. *IJAIR*, 7, 15–30.
- Gogoi, A., Das, B., Phookan, A., Chabukdhara, P., Pathak, S. S., Pame, K., and Hoque, H. 2021. Evaluation of Physical Egg Quality Traits In Indigenous Geese of Upper Assam. *International Journal of Genetics*, Volume 13, Issue 2, pp 804-806
- Gupta, S., Finelli, R., Agarwal, A., and Henkel, R. 2021. Total antioxidant capacity- Relevance, methods and clinical implications. *Andrologia*, Vol 53 (2) : e13624
- Halliwell, B. 2011. Free Radicals and Antioxidants – quo vadis?. *Trends in Pharmacological Sciences*, 32 (3), 125–130.

- Hamzeh, A., Rezaei, M., Khodabandeh, S., and Motamedzadegan, A., Noruzinia, M. 2018. Antiproliferative and antioxidative activities of cuttlefish (*Sepia pharaonis*) protein hydrolysates as affected by degree of hydrolysis. *Journal of Food Measurement and Characterization*, 12 : 721–727
- Hao, Y., Fan, X., Guo, H., Yao, Y., Ren, G., Lv, X., Yang, X. 2020. Overexpression of the bioactive lunasin peptide in soybean and evaluation of its anti-inflammatory and anti-cancer activities in vitro. *Journal of Bioscience and Bioengineering*, Vol. 129, No. 4, 395e404, 2020
- Hasan, M. M., Islam, M. E., Hossain, M. S., Akter, M., Rahman, M. A. A., Kazi, M., Khan, S., and Parvin, M. S. 2024. Unveiling the therapeutic potential: Evaluation of anti-inflammatory and antineoplastic activity of *Magnolia champaca* Linn's stem bark isolate through molecular docking insights. *Heliyon*, 10, e22972
- Haugh, R. R. 1937. The Haugh unit for measuring egg quality. *U.S. Egg and Poul. Mag.*, 43, 552–573.
- He, Y., Pan, X., Chi, C. F., Sun, K. L., and Wang, B. 2019. Ten new pentapeptides from protein hydrolysate of miiuy croaker (*Miichthys miiuy*) muscle: Preparation, identification, and antioxidant activity evaluation. *LWT - Food Science and Technology*, 105, 1–8
- Heiman, V., and Carver, J. S. 1936. The Albumen Index as a Physical Measurement of Observed Egg Quality. *Poultry Science*, Vol. 15, No. 2
- Hernandes, J. M., Beardswort, P. M., and Weber, G. 2005. Egg quality – meeting consumer expectations. *International Poultry Production*, 13 (3): 20–23
- Huang, W. Y., Majumder, K., and Wu, J. 2010. Oxygen Radical Absorbance Capacity Of Peptides From Egg White Protein Ovotransferrin and Their Interaction With Phytochemicals. *F. Chem*, 123:635-641
- Jan, S., Khan, M. R., Rashid, U., Bokhari, J. 2013. Assessment of Antioxidant Potential, Total Phenolics and Flavonoids of Different Solvent Fractions of *Monothea Buxifolia* Fruit. *Osong Public Health Res Respect*, 4 (5) : 246-254
- Jeong, S., Jeon, Y., Mun, J., Jeong, S. M., Liang, H., Chung, K., Yi, P. I., An, B. S., and Seo, S. 2023. Ninhydrin Loaded Microcapsules for Detection of Natural Free Amino Acid. *Chemosensors*, 11, 49
- Jhony, L. C., Kudare, T. G., and Suresh, P. V. 2022. Production of egg white hydrolysate by digestion with pineapple bromelain: optimization, evaluation and antioxidant activity study. *J Food Sci Technol*, 59(5):1769–1780

- Jhony, L. C., Kudre, T. G., and Suresh, P.V. 2022. Production Of Egg White Hydrolysate By Digestion With Pineapple Bromelain: Optimization, Evaluation And Antioxidant Activity Study. *J Food Sci Technol*, 59 (5) : 1769–1780
- Ji, S., Ahn, D. K., Zhao, Y., Lia, K., Li, S., and Huang, X. 2020. An easy and rapid separation method for five major proteins from egg white: Successive extraction and MALDI-TOF-MS identification. *Food Chemistry*, 315, 126207
- Johny, L. C., Kudre, T. G., and Suresh, P. V. 2021. Production of egg white hydrolysate by digestion with pineapple bromelain: Optimization, evaluation and antioxidant activity study. *Journal of Food Science & Technology*, Vol. 59, pages 1769–1780
- Kaewmanee, T., Benjakul, S., and Visessanguan, W. 2009. Changes in chemical composition, physical properties and microstructure of duck egg as influenced by salting. *Food Chemistry*, Volume 112, Issue 3, Pages 560-569
- Karabulut, O. 2021. A study on the effect of altitude on shell thickness in goose eggs. A study on the effect of altitude on shell thickness in goose eggs, Vol. 5, Issue 9 : 1116-1120
- Karami, Z., Peighambardoust, S. H., Hesari, J., Akbari-Adergani, B., and Andreu, D. 2019. Antioxidant, anticancer and ACE-inhibitory activities of bioactive peptides from wheat germ protein hydrolysates. *Food Bioscience*, 32, 100450.
- Kedare, S. B., and Singh, R. P. 2011. Genesis and Development of DPPH Method of Antioxidant Assay. *J. Food Sci. Technol*, 48, 412–422.
- Keener, K. M., LaCrosse, J. D., Curtis, P. A., Anderson, K. E., and Farkas, B. E. 2000. The influence of rapid air cooling and carbon dioxide cooling and subsequent storage in air and carbon dioxide on shell egg quality. *Poultry Science*, 79 : 1067-1070
- Kielkopf, C. L., Bauer, W., and Urbatsch, I. L. 2020. Bradford Assay for Determining Protein Concentration. London : Cold Spring Harbor Laboratory
- Kielkopf, C. L., Bauer, W., and Urbatsch, I. L. 2020. Bradford Assay for Determining Protein Concentration. *Cold Spring Harb Protocol*, 1-4
- Kim, Y. B., Lee, S. Y., Yum, K. H., Lee, W. T., Park, S. H., Lim, Y. H., Choi, N. Y., Jang, S. Y., Choi, J. S., and Kim, J. H. 2024. Effects of storage temperature and egg washing on egg quality and physicochemical properties. *Discover Applied Sciences*, 6:111
- Kovacs-Nolan, J. K. N., M. Phillips and Y. Mine. 2005. Advances in the value of eggs and egg components for human health. *J. Agric. Food Chem*, 53 : 8421–8431

- Kpemissi, M., Kantati, Y. T., Veerapur, V. P., Eklu-Gadegbeku, K., Hassan, Z. 2023. Anti-cholinesterase, anti-inflammatory and antioxidant properties of *Combretum micranthum* G. Don: Potential implications in neurodegenerative disease. *IBRO Neuroscience Reports* 14 2023 21–27
- Krisnaningsih, A. T. N., Brihandhono, A., and Abrori, Y. J. 2024. Efficacy of White Turmeric Solution as A Natural Preservative For Eggs: a 12-Hour Soaking Evaluation on Internal Quality. *Animal Production*, 26 (1): 57-69
- Krisnaningsih, A. T. N., Hadiani, D. P. P., Kustyorini, T. I. W., and Tunyanan, H. 2021. The Effect of Storage Time on the Internal Quality of Chicken Eggs in the Second Phase in PS. Mandalan Jaya, Malang Regency. *Advances in Biological Sciences Research*, vol. 20
- Kulshreshtha, G., Benavides-Reyes, C., Rodriguez-Navarro, A. B., Diep, T., and Hincke, M. T. 2021. Impact of Different Layer Housing Systems on Eggshell Cuticle Quality and Salmonella Adherence in Table Eggs, *Foods*, 10, 2559
- Kumar, A., Das, K., Mukherjee, K., Bharti, A., and Singh, A. K. 2012. Frequency of different shell color and its effect on the fertility and hatchability in black rock, gramapriya and vanaraja breeds of chicken. *Veterinary World*, 5:594-598.
- Kumari, A., Tripathi, U. K., Maurya, V., and Kumar, M. 2020. Internal Quality Changes in Eggs During Storage. *International Journal of Science, Environment and Technology*, Vol. 9, No 4, 615 – 624
- Kumbar, V., Nedomova, S., Trnka, J., Buchar, J., and Pytel, R. 2016. Effect of storage duration on the rheological properties of goose liquid egg products and eggshell membranes. *Poultry Science*, 95:1693–1701
- Lack, D. 1968. *Ecological Adaptations for Breeding in Birds*. Methuen, London.
- Laemmli, U. K. 1970. Cleavage of Structural Proteins During The Assembly of The Head of Bacteriophage T4. *Nature*, 227 (5259) : 680-685
- Liang, N., and Kitts, D. D. 2014. Antioxidant Property of Coffee Components: Assessment of Methods that Define Mechanisms of Action. *Molecules*, 19, 19180-19208
- Liu, H. S., and Cheng, W. T. 2010. Eggshell pigmentatoin: a review. *Journal of the Chinese Society of Animal Science*, 39:75-89.
- Liu, W., Chen, X., Li, H., Zhang, J., An, J., and Liu, X. 2022. Anti-Inflammatory Function of Plant-Derived Bioactive Peptides: A Review. *Foods*, 11, 2361

- Liu, W., Zhan, J., Miyakawa, T., Li, G., Gu, R., and Tanokura, M. 2021. Antioxidant properties and inhibition of angiotensin-converting enzyme by highly active peptides from wheat gluten. *Scientific Reports*, 11:5206
- Lonov, I. A., Katerinich, O. O., Kuchmistov, V. O., Anisimova, O. V., Darren K. Griffin, D. K., Romanov, M. N., and Zhukova, I. O. 2023. Vitamin E and A Availability in Goose Embryos and Goslings and Improvement of Reproduction Traits Depending on the Starting Temperature Regime of Egg Incubation. *Poultry*, 2, 305–319
- Mader, E. A., Davidson, E. R., Mayer, J. M. 2007. Large Ground-State Entropy Changes For Hydrogen Atom Transfer Reactions of Iron Complexes. *J. Am. Chem.*, 129, 5153–5166.
- Mallet, S., Guesdon, V., Ahmed, A. M. H., and Nys, Y. 2007. Comparison of eggshell hygiene in two housing systems: Standard and furnished cages. *British Poultry Science*, Vol. 47, pp. 30-35
- Mann, K. 2007. The chicken egg white proteome. *Proteomics*, 7, 3558–3568
- Manninen, A. H. 2009. Protein hydrolysates in sports nutrition. *Nutrition and Metabolism*, 6:38
- Martinez, C. S., Alterman, C. D. C., Vera, G., Márquez, A., Uranga, J., Peçanha, F. M., Vassallo, D. V., Exley, C., Mello-Carpes, P. B., Miguel, M., and Wiggers, G. A. 2018. Egg White Hydrolysate as a functional food ingredient to prevent cognitive dysfunction in rats following long-term exposure to aluminum. *Scientific Report Journal*, 9 : 1868
- Marzec, A., Michalczyk, M., Damaziak, K., Mieszkowska, A., Lenart, A., and Niemiec, J. 2016. Correlations between vitelline membrane strength and selected physical parameters of poultry eggs. *Ann. Anim. Sci.*, Vol. 16, No. 3, 897–907
- Matsuda, T., Gu, J., Tsuruta, K., and Nakamura, R. 1985. Immunoreactive glycopeptides separated from peptic hydrolysates of chicken egg white ovomucoid. *J. Food Sci.* 50:592–594.
- Matsuda, T., Watanabe, K., and Nakamura, R. 1982. Immunochemical studies on thermal denaturation of ovomucoid. *Biochimica et Biophysica Acta (BBA) - Protein Structure and Molecular Enzymology*, 707(1), 121–128.
- McCarthy, A. L., O'Callaghan, Y. C., and O'Brien, N. M. 2013. Protein Hydrolysates from Agricultural Crops—Bioactivity and Potential for Functional Food Development. *Agriculture*, 3, 112-130
- McGrath, R. 1972. Protein Measurement by Ninhydrin Determination of Amino Acids Released by Alkaline Hydrolysis. *Analytical Biochemistry*, 49 : 95-102

- Miguel, M., and Aleixandre, A. 2006 Antihypertensive peptides derived from egg proteins. *J Nutr*, 136:1457–1460.
- Mine, Y., and Kovacs-Nolan, J. 2005. Biologically active peptides derived from egg proteins. In *European Symposium on the Quality of Eggs and Egg Products*. Netherlands: World's Poultry Science Association.
- Mishra, K., Ojha, H., and Chaudhury, N. K. 2012. Estimation of Antiradical Properties of Antioxidants Using DPPH Assay: A Critical Review and Results. *Food Chemistry*, 130, 1036–1043
- Moonmun, D., Majumder, R., and Lopamudra, A. 2017. Quantitative Phytochemical Estimation and Evaluation of Antioxidant and Antibacterial Activity of Methanol and Ethanol Extracts of *Heliconia rostrata*. *Indian J Pharm Sci*, 79 (1) : 79-90
- Mora, L., Aristoy, M., and Toldra, F. 2018. *Bioactive Peptide*. Elsevier Inc, 1-9
- Nadia, R. 2022. Effect of Vitamin E Supplementation and Storage Duration on Egg Physical Quality of IPB-D2 Candidate Chicken Strain. *International Conference On Agriculture and Applied Science (ICoAAS)*, p 98-106
- Narushin, V. G., Romanov, M. N., and Griffin, D. K. 2021. A novel Egg Quality Index as an alternative to Haugh unit score. *Journal of Food Engineering*, 289, 110176
- Ningtyas, W. D., Mukhlisah, A. N., Syah, S. P., Irfan, M., S. A. Rab, S. A., and Mutmainna, A. 2024. Internal Quality of Layer Eggs from Traditional Market Majene. *Jurnal Ilmu Produksi dan Teknologi Hasil Peternakan*, 12 (1): 34-38
- Noh, D. O., and Suh, H. J. 2015. Preparation of Egg White Liquid Hydrolysate (ELH) and Its Radical-Scavenging Activity. *Prev. Nutr. Food Sci.*, 20 (3) : 183-189
- Nolan, J. K., Zhang, J. W., Hayakawa, S., and Mine, Y. 2000. Immunochemical and structural analysis of pepsin-digested egg white ovomucoid. *J. Agric. Food Chem*, 48:6261–6266
- Nouroozi, R. V., Noroozi, M. V., and Ahmadizadeh, M. 2015. Determination of Protein Concentration Using Bradford Microplate Protein Quantification Assay. *International Electronic Journal of Medicine*, 4(1)
- Nowakowski, A. B., Wobig, W. J., and Petering, D. H. 2018. Native SDS-PAGE: High Resolution Electrophoretic Separation of Proteins With Retention of Native Properties Including Bound Metal Ions. *Metallomics*, 6 (5) : 1068–1078
- Nurliyani., Yuny, E., Rumiayati., and Sukarno, A. S. 2023. Characteristics of protein and amino acid in various poultry egg white ovomucoid. *Food Science and Technology, Campinas*, 43, e101722

- Nutten, S. 2016. Proteins, peptides and amino acids: Role in infant nutrition. Nestle Nutr. Inst. Workshop Ser., 86, 1–10.
- Okiki, P., and Ahmed, O. 2017. Preservation of quality of table eggs using vegetable oil and shea butter. Int. Lett. Nat. Sci, 63, 27–33.
- Okonkwo, J. C., Chiamaka, O., Okonkwo, I. F., and Marire, B. N. 2021. Effect of Storage Method and Storage Duration on Chicken Egg Quality. International Journal of Environmental & Agriculture Research, Vol. 7, issue 8
- Palupi, N. W., Windrati, W. S., and Tamtarini. 2010. The Effect Of Enzymatic Hydrolysis On The Properties Of Protein Hydrolysate From Paddy Mushroom. Makara Journal of Technology, Vol. 14, No. 2, 73-76
- Parameswari, P., Devika, R., and Vijayaraghavan, P. 2019. In vitro anti-inflammatory and antimicrobial potential of leaf extract from *Artemisia nilagirica* (Clarke) Pamp. Saudi Journal of Biological Sciences, 26, 460–463
- Pavlova, A. S., Dyudeeva, E. S., Kupryushkin, M. S., Amirkhanov, N. V., Pyshnyi, D. V., and Pyshnaya, I. A. 2017. SDS-PAGE procedure: Application for characterization of new entirely uncharged nucleic acids analogs. Electrophoresis, 0, 1-5
- Philip, T., Weber, C. W., and Berry, J. W. 1977. Color Measurement of Egg Yolks—An Instrumental Method. Poultry Science, Volume 56, Issue 4, 1, Pages 1305-1309
- Phokan, A., Haque, H., and Khanikar, D. 2022. Egg quality traits of indigenous chicken, duck and geese of Assam, The Pharma Innovation Journal, SP-11(11): 10-15
- Plasek, B., Lakner, Z., Kasza, G., and Temesi, Á. 2020. Consumer Evaluation of the Role of Functional Food Products in Disease Prevention and the Characteristics of Target Groups. Nutrients, 12, 69
- Price, N. C. and Nairn, J. 2009. Exploring proteins: A student's guide to experimental skills and methods. Oxford University Press, pp. 259-278
- Prieto, P., Pineda, M., Aguilar, M. 1999. Spectrophotometric quantification of antioxidant capacity through the formation of a phosphomolybdenum complex: specific application of vitamin E. Analytical Biochemistry, 269, 337–341
- Prihanto, A. A., Nurdiani, R., and Bagus, A. D. 2019. Production and Characteristics of Fish Protein Hydrolysate From Parrotfish (*Chlorurus sordidus*) Head. PeerJ, 20, 7 :e8297

- Prior, R. L., Wu, X., and Schaich, K. 2005. Standardized Methods For The Determination of Antioxidant Capacity and Phenolics In Foods and Dietary Supplements. *J. Agric. Food Chem*, 53, 4290–4302.
- Rabsztyn, A., Andres, K., and Dudek, M. 2010. Variability, Heritability And Correlations Of Egg Shape In The Zatorska Goose. *Journal Central European Agriculture*, Volume 11 No. 4 433-436
- Radu-Rusul, R. M., Usturoil, M. G., Leahull, A., Amarieill, S., Radu-Rusul, C. G., and Vacaru-Oprişl, I. 2014. Chemical features, cholesterol and energy content of table hen eggs from conventional and alternative farming systems. *South African Journal of Animal Science*, 44, No. 1
- Rao, Q., and Labuza, T. P. 2012. Effect of moisture content on selected physicochemical properties of two commercial hen egg white powders. *Food Chemistry*, Volume 132, Issue, Pages 373-384
- Razi, S. M., Fahim, H., Amirabadi, S., and Rashidinejad, A. 2023. An overview of the functional properties of egg white proteins and their application in the food industry. *Food Hydrocolloids Journal*, 135, 108183
- Re, R., Pellegrini, N., Proteggente, A., Pannala, A., Yang, M., and Rice-Evans, C. 1999. Antioxidant activity applying an improved ABTS radical cation decolorization assay. *Free Radical Biology and Medicine*, 26(9-10): 1231–1237
- Renukadevi, B., Himali, H. M. C., and Silva, G. L. L. P. 2018. Quality and shell integrity of Japanese quail eggs: an assessment during storage and at market. *Sri Lanka Journal of Food and Agriculture*, 4 (1) : 27-34
- Riyanti., Nova, K., and Sirat, M. P. P. 2020. *Prodeksi Aneka Ternak Unggas*. Bandar Lampung : Pusaka Media
- Roberts, J. R. 2004. Factors Affecting Egg Internal Quality and Egg Shell Quality in Laying Hens. *Journal of Poultry Science*, 41 :161-177
- Roberts, V. 1997. Standard for Eggs. In: *British Poultry Standards*, Roberts, V. (Ed.). 5th Edn., Blackwell Science Ltd., Oxford, pp: 359-362.
- Rose-Martel, M., Du, J., Hincke, M. T. 2012. Proteomic Analysis Provides New Insight into the Chicken Eggshell Cuticle. *Journal of Proteom*, 75, 2697–2706
- Roy, S., and Kumar, V. 2012. A Practical Approach on SDS PAGE for Separation of Protein. *International Journal of Science and Research (IJSR)*, ISSN : 2319-7064, 3.358

- Rubio, C. P., Hernández-Ruiz, J., Martínez-Subiela, S., Tvarijonaviciute, A., and Ceron, J. J. 2016. Spectrophotometric assays for total antioxidant capacity (TAC) in dog serum: an update. *BMC Veterinary Research*, 12:166
- Saatci, M., Yardimci, M., Kaya, I., and Poyraz, O. 2002. Some egg properties of geese in Kars City. *Lalahan Hay Arast Enst Derg*, 42 (2) : 37-45.
- Sajjad, A., Zia, M., Xiao, X., Olsson, R. T., Capezza, A. J., and Rasheed, F. 2023. Wheat gluten hydrolysates with embedded Ag-nanoparticles; a structure-function assessment for potential applications as wound sorbents with antimicrobial properties. *Polymer Testing*, Vol. 118, 107896
- Salamon, A., and Kent, J. P. 2017. Egg Shape is Constrained More by Width than Length, Evidence from Double-yolked Duck Eggs. *International Journal of Poultry Science*, 16 (10): 387-392
- Sanlier, N., and Ustun, D. 2021. Egg consumption and health effects: A narrative review. *Journal of Food Science*, 86 : 4250–4261
- Sarantidi, E., Ainatzoglou, A., Papadimitriou, C., Stamoula, E., Maghiorou, K., Miflidi, A., Trichopoulou, A., Mountzouris, K. C., and Anagnostopoulos, A. K. 2023. Egg White and Yolk Protein Atlas: New Protein Insights of a Global Landmark Food. *Foods*, 12, 3470
- Schaafsma, G. 2009. Safety of protein hydrolysates, fractions thereof and bioactive peptides in human nutrition. *Eur. J. Clin. Nutr.*, 63, 1161–1168.
- Shalaby, E. A., and Shanab, S. M. M. 2013. Antioxidant Compounds, Assays Of Determination and Mode of Action. *Afr. J. Pharm. Pharmacol*, 7, 528–539.
- Sharma, S. K., and Singh, A. P. 2012. In vitro antioxidant and free radical scavenging activity of *Nardostachys jatamansi* DC, *J. Acupunct. Meridian Stud*, 5 (3) : 112–118.
- Shin, D., Narciso-Gaytán, C., Regenstein, J. M., and Sánchez-Plata, M. X. 2012. Effect of various refrigeration temperatures on quality of shell eggs. *J Sci Food Agric.*, 92:1341–5.
- Silaban, E. M., Tafsir, M., and Hanafi, N. D. 2019. Free Choice Feeding on the Quality of Quail Eggs (*Coturnix coturnix-japonica*). *Indonesian Journal of Agricultural Research*, Vol. 02, No. 02 : 110-125
- Singhal, M., Paul, A., Singh, H. P., Dubey, S. K., and Gaur, K. 2011. Evaluation of Reducing Power Assay of Chalcone Semicarbazones. *Journal of Chemical and Pharmaceutical Research*, 3, (3) : 639-645

- Song, K. T., Choi, S. H., and Oh, H. R. 2010. A comparison of egg quality of pheasant, chukar, quail and guinea fowl. *Asian-Austral. J. Anim. Sci.*, 13: 986–990
- Soria. M. A., Bueno, D. L., and Bernigaud, I. I. C. 2013. Comparison of Quality Parameters in Hen's Eggs According to Egg Shell Color. *International Journal of Poultry Science* 12 (4): 224-234
- Stoddard, M. C., Yong, E. H., Akkaynak, D., Sheard, C., Tobias, J. A., and Mahadevan, L. 2017. Avian egg shape: Form, function and evolution. *Science*, 356: 1249-1254
- Sukarno, A. S., Nurliyani., Erwanto, Y., Rakhmatulloh, S., and Rifqi. 2023. Antibacterial and Antioxidant Activity of Protein Hydrolysate Extracted from Different Indonesian Avian Egg White. *Jurnal Sain Peternakan Indonesia*, Vol. 18, issue 1
- Sun, C., Liu, J., Yang, N., and Xu, G. 2019. Egg quality and egg albumen property of domestic chicken, duck, goose, turkey, quail, and pigeon. *Poultry Science*, 98:4516–4521
- Sureh, P. V. 2022. Protein hydrolysate from duck egg white by Flavourzyme® digestion: Process optimisation by model design approach and evaluation of antioxidant capacity and characteristic properties. *LWT Food Science and Technology*, Vol. 156, 113018
- Tacias-Pascacio, V. G., Morellon-Sterling, R., Siar, E., Tavano, O., Berenguer-Murcia, A., and Fernandez-Lafuente, R. 2020. Use of Alcalase in the production of bioactive peptides: A review. *International Journal of Biological Macromolecules*, Volume 165, Part B, Pages 2143-2196
- Tonolo, F., Folda, A., Cesaro, L., Scalcon, V., Marin, O., Ferro, S., Bindoli, A., and Pia, M. 2019. Milk-derived bioactive peptides exhibit antioxidant activity through the Keap1-Nrf2 signaling pathway. *Journal of Functional Foods*, March, 103696.
- Tpolska, K., Florkiewicz, A., and Filipiak-Florkiewicz, A. 2021. Functional Food—Consumer Motivations and Expectations. *Int. J. Environ. Res. Public Health*, 18, 5327
- Untea, A., Lupu, A., Saracila, M., and Panaite, T. 2018. Comparison of ABTS, DPPH, Phosphomolybdenum Assays for Estimating Antioxidant Activity and Phenolic Compounds in Five Different Plant Extracts. *Bulletin UASVM Animal Science and Biotechnologies*, 75, (2)
- USDA. 2000. United States Standards, Grades, and Weight Classes for Shell Eggs (AMS 56). USDA, AMS, Poultry Programs, USA.

- Vandenplas, Y., Ksiazyk, J., Luna, M. S., Migacheva, N., Picaud, L., Ramenghi, L. A., Singhal, A., and Wabitsch, M. 2022. Partial Hydrolyzed Protein as a Protein Source for Infant Feeding: Do or Don't?. *Nutrients*, 14, 1720
- Vekić, M., Gvozdenović, M., Perić, L., Savić, Đ., Jotanović, S., and Mitraković, M. 2021. Influence of Floor Egg Shell Cleanliness and Cleaning Treatment on Hatchability and Chick Quality. *Biotechnology in Animal Husbandry*, 37 (2) : 99-107
- Vranska, M., Voberkova, S., and Kumbar, V. 2016. Effect of Storage Duration on The Antioxidant Activity of The Hen And Quail Eggs Using Abts Method. *Mendelnet Journal*, 693-698
- Wijedasa, W. M. R. M., Wickramasinghe, Y. H. S. T., Vidanarachchi, J. K., and Himali, S. M. C. 2020. Comparison of Egg Quality Characteristics of Different Poultry Species. *Journal of Agricultural Science*, 12 (11) : 331-342
- Willems, E., Decuypere, E., Buyse, J., and Everaert, N. 2014. Importance of Albumen During Embryonic Development In Avian Species, With Emphasis On Domestic Chicken. *World's Poultry Science Journal*, Vol. 70
- Xue, H., Wang, J., Xie, J., Xiong, C., Li, J., Tu, Y., and Zhao, Y. 2019. Isolation, purification, and structure identification of antioxidant peptides from embryonated eggs. *Poultry Science* 98:2360–2370
- Yani, D. F., and Fatahilla, R. 2022. Anti-Inflammatory Activity of Ethanol Extract and Ethyl Acetate Fraction of Kebiul (*Caesalpinia bonduc* L.) Seed Coat Against Inhibition of Protein Denaturation. *Jurnal Kimia Riset*, Vol. 7, No. 1, ISSN: 2528-0422
- Ye, Z. W., Zhang, J., Townsend, D. M., and Tew, K. D. 2015. Oxidative Stress, Redox Regulation and Diseases of Cellular Differentiation. *Biochimica et Biophysica Acta (BBA) - General Subjects*, 1850 (8), 1607–1621.
- Yuno-Ohta, N., Kato, T., Ashizawa, S., Kimura, Y., Maruyama, N., and Nishizu, T. 2016. Role of ovomucoid in the gelation of a β -lactoglobulin-ovomucoid mixture. *Colloid and Polymer Science*, 294 (6), 1065–1073.
- Zambrowicz, A., Pokora, M., Setner, B., Dałbrowska, A., Szołtysik, M., Babij, K., Szewczuk, Z., Trziszka, T., Lubec, G., and Chrzanowska, J. 2015. Multifunctional Peptides Derived From An Egg Yolk Protein Hydrolysate: Isolation and Characterization. *Amino Acids*, 47:369–380
- Zanutto-Elgui, M. R., Vieira, J. C. S., Prado, D. Z.d., Buzalaf, M. A. R., Padilha, P.d. M., Elgui de Oliveira, D., and Fleuri, L. F. 2019. Production of milk peptides with antimicrobial and antioxidant properties through fungal proteases. *Food Chemistry*, 278, 823–831.

- Zdrojewicz, Z., Herman, M., and Starostecka, E. 2016. Hen's egg as a source of valuable biologically active substances. *Postępy Higieny i Medycyny Doswiadczalnej* (Online), 70, 751–759.
- Zhang, J., Peng, W., Tang, W., and Wang, M. 2017. Experimental Study on the Geometrical and Mechanical Properties of Goose Eggshells. *Brazilian Journal of Poultry Science*, Vol.19, No. 3, 455-464
- Zhang, L., Zhang, Y., Li, S., Li, C., Hu, X., Li, Z., Tue, T., Hu, Z. 2023. Effect of the selenized yeast added in feed on selenium-containing proteins of albumins in egg yolk. *Food Chemistry*, Vol. 402, 134435
- Zheng, J., Bu, T., Liu, L., He, G., Li, S., and Wu, J. 2020. Naturally Occurring Low Molecular Peptides Identified In Egg White Show Antioxidant Activity. *Food Research International* Volume ,138, Part B, 109766
- Zhou, N., Zhao, Y., Yao, Y., Wu, N., Xu, M., Du, H., Wu, J., and Tu, Y. 2022. Antioxidant Stress and Anti-Inflammatory Activities of Egg White Proteins and Their Derived Peptides: A Review. *J. Agric. Food Chem*, 70, 5–20