UNIVERSITAS
GADJAH MADA
PENGEMBANGAN TEKNOLOGI PENDINGINAN METODE PELAT TEKAN (COMPRESSION PLATE METHOD) PADA PROSES PRECOOLING DAGING DAN IKAN
SURYA ABDUL MUTTALIB, Dr. Ir. Nursigit Bintoro, M.Sc
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

DAFTAR PUSTAKA

Adji, D., Susanty, A., Tafsin, M., 2021. Analisis kualitas daging ayam broiler asal pasar swalayan dan pasar tradisional Di Kota Medan Sumatera Utara. Jurnal Sain Veteriner 39, 224. https://doi.org/10.22146/jsv.54354

Afshari, F., 2021. Experimental and numerical investigation on thermoelectric coolers for comparing air-to-water to air-to-air refrigerators. J Therm Anal Calorim 144, 855–868. https://doi.org/10.1007/s10973-020-09500-6

All India Coordinated Research Project on Post Harvest Technology, Sofi, F.R., Raju, C.V., Lakshmisha, I.P., Singh, R.R., 2016. Antioxidant and antimicrobial properties of grape and papaya seed extracts and their application on the preservation of Indian mackerel (Rastrelliger kanagurta) during ice storage. J Food Sci Technol 53, 104–117. https://doi.org/10.1007/s13197-015-1983-0

Almodovar, C.A.R., Hernandez, L.G.D., Santillan, G.C.M., Flores, A.M., Rosales, L.P.S., Tolentino, Engr.R.E., 2021. Design of Airconditioning System using Peltier and Liquid Based Heatsink, in: 2021 6th International Conference on Communication and Electronics Systems (ICCES). Presented at the 2021 6th International Conference on Communication and Electronics Systems (ICCES), IEEE, Coimbatre, India, pp. 123–130. https://doi.org/10.1109/ICCES51350.2021.9489244

Ambaw, A., Delele, M.A., Defraeye, T., Ho, Q.T., Opara, L.U., Nicolaï, B.M., Verboven, P., 2013. The use of CFD to characterize and design post-harvest storage facilities: Past, present and future. Komputers and Electronics in Agriculture 93, 184–194. https://doi.org/10.1016/j.compag.2012.05.009

Arnold, B., 1992. Meat and Meat Products in Human Nutrition in Developing Countries.

Aryawan, I.P.Y., 2016. Study eksperimental performa pendingin ice bunker dengan kombinasi massa dry ice dan ice 5, 5.

Atmojo, P.S., Sachro, S.S., Budieny, H., 2014. Penggunaan Analisis Dimensi untuk Mencari Korelasi Antar Variabel pada Uji Model Hidrolik. JTS ITB 21, 221. https://doi.org/10.5614/jts.2014.21.3.5

Ballinger, J.T., Shugar, G.J., Ballinger, C.T., Shugar, G.J., 2011. Chemical technicians' ready reference handbook, 5th ed. ed. McGraw-Hill, New York.

Banach, J.K., Żywica, R., Matusevičius, P., 2021. Influence of various chilling methods on the sustainable beef production based on high voltage electrical stimulation. PLoS ONE 16, e0240639. https://doi.org/10.1371/journal.pone.0240639

Banerjee, R., Maheswarappa, N.B., 2019. Superchilling of muscle foods: Potential alternative for chilling and freezing. Critical Reviews in Food Science and Nutrition 59, 1256–1263. https://doi.org/10.1080/10408398.2017.1401975

Bao, H.N.D., Arason, S., Þórarinsdóttir, K.A., 2007a. Effects of Dry Ice and Superchilling on Quality and Shelf Life of Arctic Charr (Salvelinus alpinus) Fillets. International Journal of Food Engineering 3. https://doi.org/10.2202/1556-3758.1093

Bao, H.N.D., Arason, S., Þórarinsdóttir, K.A., 2007b. Effects of Dry Ice and Superchilling on Quality and Shelf Life of Arctic Charr (Salvelinus alpinus)

UNIVERSITAS
GADJAH MADA
PENGEMBANGAN TEKNOLOGI PENDINGINAN METODE PELAT TEKAN (COMPRESSION PLATE METHOD) PADA PROSES PRECOOLING DAGING DAN IKAN
SURYA ABDUL MUTTALIB, Dr. Ir. Nursigit Bintoro, M.Sc
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Fillets. International Journal of Food Engineering 3. https://doi.org/10.2202/1556-3758.1093

Bao, H.N.D., Arason, S., Þórarinsdóttir, K.A., 2007c. Effects of Dry Ice and Superchilling on Quality and Shelf Life of Arctic Charr (Salvelinus alpinus) Fillets. International Journal of Food Engineering 3. https://doi.org/10.2202/1556-3758.1093

Bao, H.N.D., Arason, S., Þórarinsdóttir, K.A., 2007d. Effects of Dry Ice and Superchilling on Quality and Shelf Life of Arctic Charr (Salvelinus alpinus) Fillets. International Journal of Food Engineering 3. https://doi.org/10.2202/1556-3758.1093

Basri, I.Y., Irfan, D., 2018. Komponen Elektronika 90.

Beier, S., 2006. Transport Phenomena. bookboon.com

Berrang, M.E., Meinersmann, R.J., Smith, D.P., Zhuang, H., 2008. The Effect of Chilling in Cold Air or Ice Water on the Microbiological Quality of Broiler Carcasses and the Population of Campylobacter. Poultry Science 87, 992–998. https://doi.org/10.3382/ps.2007-00406

Bita, S., Malekpouri, P., Mohammadian, T., Varzi, H.N., Kochanian, P., 2015. Changes in biogenic amines and microbial loads in the muscle of orange-spotted grouper, Epinephelus coioides (Hamilton, 1822) during ice storage. J Food Sci Technol 52, 240–248. https://doi.org/10.1007/s13197-013-0973-3

Bogor Agricultural University, Hajrawati, H., M., F., Bogor Agricultural University, Wahyuni, W., Bogor Agricultural University, Arief, I.I., Bogor Agricultural University, 2016. Kualitas Fisik, Mikrobiologis, dan Organoleptik Daging Ayam Broiler pada Pasar Tradisional di Bogor. JIPTHP 4, 386–389. https://doi.org/10.29244/jipthp.4.3.386-389

Boonsumrej, S., Chaiwanichsiri, S., Tantratian, S., Suzuki, T., Takai, R., 2007a. Effects of freezing and *thawing* on the quality changes of tiger shrimp (Penaeus monodon) frozen by air-blast and cryogenic freezing. Journal of Food Engineering 80, 292–299. https://doi.org/10.1016/j.jfoodeng.2006.04.059

Boonsumrej, S., Chaiwanichsiri, S., Tantratian, S., Suzuki, T., Takai, R., 2007b. Effects of freezing and *thawing* on the quality changes of tiger shrimp (Penaeus monodon) frozen by air-blast and cryogenic freezing. Journal of Food Engineering 80, 292–299. https://doi.org/10.1016/j.jfoodeng.2006.04.059

Bulut, M., Bayer, Ö., Kırtıl, E., Bayındırlı, A., 2018. Effect of freezing rate and storage on the texture and quality parameters of strawberry and green bean frozen in home type freezer. International Journal of Refrigeration 88, 360–369. https://doi.org/10.1016/j.ijrefrig.2018.02.030

Byun, S., Jeong, H., Kim, D.R., Lee, K.-S., 2020. Frost modeling under cryogenic conditions. International Journal of Heat and Mass Transfer 161, 120250. https://doi.org/10.1016/j.ijheatmasstransfer.2020.120250

Cai, L., Wu, X., Li, X., Zhong, K., Li, Y., Li, J., 2014. Effects of different freezing treatments on physicochemical responses and microbial characteristics of Japanese sea bass (Lateolabrax japonicas) fillets during refrigerated storage. LWT - Food Science and Technology 59, 122–129. https://doi.org/10.1016/j.lwt.2014.04.062

UNIVERSITAS GADJAH MADA
PENGEMBANGAN TEKNOLOGI PENDINGINAN METODE PELAT TEKAN (COMPRESSION PLATE METHOD) PADA PROSES PRECOOLING DAGING DAN IKAN
SURYA ABDUL MUTTALIB, Dr. Ir. Nursigit Bintoro, M.Sc
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Chen, X., Dong, P., Li, K., Zhu, L., Yang, X., Mao, Y., Niu, L., Hopkins, D.L., Luo, X., Liang, R., Zhang, Y., 2022a. Effect of the combination of superchilling and super-chilled storage on shelf-life and bacterial community dynamics of beef during long-term storage. Meat Science 192, 108910. https://doi.org/10.1016/j.meatsci.2022.108910

Chen, X., Luo, X., Zhu, L., Liang, R., Dong, P., Yang, X., Niu, L., Hopkins, D.L., Gao, S., Mao, Y., Zhang, Y., 2022b. The underlying mechanisms of the effect of superchilling on the tenderness of beef Longissimus lumborum. Meat Science 194, 108976. https://doi.org/10.1016/j.meatsci.2022.108976

Cheng, H., Song, S., Jung, E.-Y., Jeong, J.-Y., Joo, S.-T., Kim, G.-D., 2020. Comparison of beef quality influenced by freeze-*thawing* among different beef cuts having different muscle fiber characteristics. Meat Science 169, 108206. https://doi.org/10.1016/j.meatsci.2020.108206

Costantini, A., Vaudano, E., Cravero, M.C., Petrozziello, M., Piano, F., Bernasconi, A., Garcia-Moruno, E., 2016a. Dry ice blasting, a new tool for barrel regeneration treatment. Eur Food Res Technol 242, 1673–1683. https://doi.org/10.1007/s00217-016-2667-3

Costantini, A., Vaudano, E., Cravero, M.C., Petrozziello, M., Piano, F., Bernasconi, A., Garcia-Moruno, E., 2016b. Dry ice blasting, a new tool for barrel regeneration treatment. Eur Food Res Technol 242, 1673–1683. https://doi.org/10.1007/s00217-016-2667-3

Cronin, K., Caro-Corrales, J., Gao, X., 2010. Heat transfer analysis of cheese cooling incorporating uncertainty in temperature measurement locations: Model development and validation. Journal of Food Engineering 99, 175–183. https://doi.org/10.1016/j.jfoodeng.2010.02.016

Czarnowska, M., Gujska, E., 2012. Effect of Freezing Technology and Storage Conditions on Folate Content in Selected Vegetables. Plant Foods Hum Nutr 67, 401–406. https://doi.org/10.1007/s11130-012-0312-2

Da Costa, I.H., Agustina, K.K., Swacita, I.B.N., 2022. Kualitas Daging Kambing yang Disimpan pada Suhu Dingin. bulvet 631. https://doi.org/10.24843/bulvet.2022.v14.i06.p05

Dasir, Suyatno, 2019. Teknologi Pengolahan Dan Pengawetan Ikan. Noer Fikri Offset.

Davey, K.R., 2016. A quantitative failure assessment of ice slurry cooling of fish at sea to meet regulatory guidelines – demonstrated with Southern Bluefin Tuna (Thunnus maccoyii). Journal of Food Engineering 183, 58–64. https://doi.org/10.1016/j.jfoodeng.2016.03.020

De Paula Paseto Fernandes, R., De Alvarenga Freire, M.T., Da Costa Carrer, C., Trindade, M.A., 2013. Evaluation of Physicochemical, Microbiological and Sensory Stability of Frozen Stored Vacuum-Packed Lamb Meat. Journal of Integrative Agriculture 12, 1946–1952. https://doi.org/10.1016/S2095-3119(13)60632-2

Department of Fish Processing Technology Fisheries College and Research Institute Tamil Nadu Veterinary and Animal Sciences University Thoothukkudi, 628 008

UNIVERSITAS GADJAH MADA
PENGEMBANGAN TEKNOLOGI PENDINGINAN METODE PELAT TEKAN (COMPRESSION PLATE METHOD) PADA PROSES PRECOOLING DAGING DAN IKAN
SURYA ABDUL MUTTALIB, Dr. Ir. Nursigit Bintoro, M.Sc
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

India, Sasi, M., 2000. Chilling Fresh Fish in Dry and Wet Ice. AFS 13. https://doi.org/10.33997/j.afs.2000.13.4.009

Devi, R., Rasane, P., Kaur, S., Singh, J., 2019. Meat and Meat losses: influence on meat quality 6.

Diana, C., Dihansih, E., Kardaya, D., 2018. Physical and chemical qualities of frozen beef within different *thawing* method. JP 9, 51. https://doi.org/10.30997/jp.v9i1.1155

Dima, J.B., Santos, M.V., Baron, P.J., Califano, A., Zaritzky, N.E., 2014. Experimental study and numerical modeling of the freezing process of marine products. Food and Bioproducts Processing 92, 54–66. https://doi.org/10.1016/j.fbp.2013.07.012

Dirita, C., De Bonis, M.V., Ruocco, G., 2007. Analysis of food cooling by jet impingement, including inherent conduction. Journal of Food Engineering 81, 12–20. https://doi.org/10.1016/j.jfoodeng.2006.10.002

Effendy, M., 2019. Pengetahuan Dasar Sistem Kendali, 1st ed. Muhammadiyah University Press, Surakarta.

Erdoğdu, F., 2005. Mathematical approaches for use of analytical solutions in experimental determination of heat and mass transfer parameters. Journal of Food Engineering 68, 233–238. https://doi.org/10.1016/j.jfoodeng.2004.05.038

Fadiji, T., Ashtiani, S.-H.M., Onwude, D.I., Li, Z., Opara, U.L., 2021. Finite Element Method for Freezing and *Thawing* Industrial Food Processes. Foods 10, 869. https://doi.org/10.3390/foods10040869

Ferreira, S.R., 2020. FDM for the freezing process of a slab using integral average properties. International Journal of Refrigeration 119, 326–339. https://doi.org/10.1016/j.ijrefrig.2020.07.026

Ferreira, S.R., 2017. Freezing time of a slab using the method of lines. International Journal of Refrigeration 75, 77–94. https://doi.org/10.1016/j.ijrefrig.2017.01.007

Fiandini, M., Nandiyanto, A.B.D., Al Husaeni, D.F., Al Husaeni, D.N., Mushiban, M., 2023. How to Calculate Statistics for Significant Difference Test Using SPSS: Understanding Students Comprehension on the Concept of Steam Engines as Power Plant. Indonesian J. Sci. Technol 9, 45–108. https://doi.org/10.17509/ijost.v9i1.64035

Firdaus, M., 2019. Profil Perikanan Tuna Dan Cakalang Di Indonesia. Marina 4, 23. https://doi.org/10.15578/marina.v4i1.7328

Food Processing Technology : Principles and Practice, n.d. 608.

Freire, L.O., Navarrete, L.M., Corrales, B.P., Castillo, J.N., 2021. Efficiency in thermoelectric generators based on Peltier cells. Energy Reports 7, 355–361. https://doi.org/10.1016/j.egyr.2021.08.099

Gandi, F., Yusfi, M., 2016. Perancangan Sistem Pendingin Air Menggunakan Elemen Peltier Berbasis Mikrokontroler ATmega8535 5, 7.

Gao, H.Y., 2007. Methods of pre-cooling for fresh cod (gadus morhua) and influences on quality during chilled storage at -1.5˚C.

Giannoglou, M., Karra, Z., Platakou, E., Katsaros, G., Moatsou, G., Taoukis, P., 2016. Effect of high pressure treatment applied on starter culture or on semi-ripened cheese in the quality and ripening of cheese in brine. Innovative Food Science & Emerging Technologies 38, 312–320. https://doi.org/10.1016/j.ifset.2016.07.024

Girgel, U., 2021. Principle component analysis (pca) of bean genotypes (phaseolus vulgaris l.) Concerning agronomic, morphological and biochemical

UNIVERSITAS
GADJAH MADA
PENGEMBANGAN TEKNOLOGI PENDINGINAN METODE PELAT TEKAN (COMPRESSION PLATE METHOD) PADA PROSES PRECOOLING DAGING DAN IKAN
SURYA ABDUL MUTTALIB, Dr. Ir. Nursigit Bintoro, M.Sc
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

characteristics. Appl. Ecol. Env. Res. 19, 1999–2011. https://doi.org/10.15666/aeer/1903_19992011

Gregory, S., Foster, K., Tyker, H., Wiseman, M., 1990. The Dietary and Nutritional Survey of British Aduits. London.

Gulati, T., Datta, A.K., 2013. Enabling komputer-aided food process engineering: Property estimation equations for transport phenomena-based models. Journal of Food Engineering 116, 483–504. https://doi.org/10.1016/j.jfoodeng.2012.12.016

Guo, M., Jin, T.Z., Scullen, O.J., Sommers, C.H., 2013. Effects of Antimicrobial Coatings and Cryogenic Freezing on Survival and Growth of *Listeria innocua* on Frozen Ready-to-Eat Shrimp during *Thawing*: Antimicrobial coatings against Listeria on RTE shrimp…. Journal of Food Science 78, M1195–M1200. https://doi.org/10.1111/1750-3841.12180

Gupta, S., Giri, S., Srivastava, T., Agarwal, P., Sharma, R., Agrawal, A., 2021. Smart Refrigerator based on 'Internet of Things,' in: 2021 International Conference on Advance Computing and Innovative Technologies in Engineering (ICACITE). Presented at the 2021 International Conference on Advance Computing and Innovative Technologies in Engineering (ICACITE), IEEE, Greater Noida, India, pp. 436–439. https://doi.org/10.1109/ICACITE51222.2021.9404612

Hadfield, J.M., n.d. The Thermal and Physical Properties of Beef from Three USDA-Quality Grades Cooked to Multiple Degrees of Doneness.

Hamed Hammad Mohammed, H., Jin, G., Ma, M., Khalifa, I., Shukat, R., Elkhedir, A.E., Zeng, Q., Noman, A.E., 2020. Comparative characterization of proximate nutritional compositions, microbial quality and safety of camel meat in relation to mutton, beef, and chicken. LWT 118, 108714. https://doi.org/10.1016/j.lwt.2019.108714

Hastawan, A.F., Haryono, S., Utomo, A.B., Hangga, A., Setiyawan, A., Septiana, R., Hafidz, C.M., Triantino, S.B., 2021. Comparison of testing load cell sensor data sampling method based on the variation of time delay. IOP Conf. Ser.: Earth Environ. Sci. 700, 012018. https://doi.org/10.1088/1755-1315/700/1/012018

Hediyati, D., Suartana, I.M., 2021. Penerapan Principal Component Analysis (PCA) Untuk Reduksi Dimensi Pada Proses Clustering Data Produksi Pertanian Di Kabupaten Bojonegoro. JIEET 5, 49–54. https://doi.org/10.26740/jieet.v5n2.p49-54

Hoang, D.K., Olatunji, J.R., Lovatt, S.J., Carson, J.K., 2022. Simulation of an industrial cheese chilling process. International Journal of Refrigeration 133, 41–50. https://doi.org/10.1016/j.ijrefrig.2021.10.016

Hong, G.-P., Choi, M.-J., 2016. Comparison of the quality characteristics of abalone processed by high-pressure sub-zero temperature and pressure-shift freezing. Innovative Food Science & Emerging Technologies 33, 19–25. https://doi.org/10.1016/j.ifset.2015.12.024

Irwanto, B., Kabib, M., Winarso, R., 2019. Rancang bangun sistem kontrol penimbangan tembakau dengan mikrokontroller arduino uno. Crankshaft 2. https://doi.org/10.24176/crankshaft.v2i2.3837

Jading, A., Bintoro, N., Sutiarso, L., Karyadi, J.N.W., 2017. Artificial Neural Network-Based Modelling and Optimization to Estimate the Fineness Modulus of the

UNIVERSITAS
GADJAH MADA
PENGEMBANGAN TEKNOLOGI PENDINGINAN METODE PELAT TEKAN (COMPRESSION PLATE METHOD) PADA PROSES PRECOOLING DAGING DAN IKAN
SURYA ABDUL MUTTALIB, Dr. Ir. Nursigit Bintoro, M.Sc
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Drying Process of Sago Starch Using a Pneumatic Conveying Recirculated Dryer. IJET 9, 3281–3291. https://doi.org/10.21817/ijet/2017/v9i4/170904028

Jading, A., Bintoro, N., Sutiarso, L., Wahyu Karyadi, J.N., 2018. Model Matematis Hubungan antara Kadar Air Akhir Bahan dengan Variabel Proses Pengeringan pada Pneumatic Conveying Recirculated Dryer. Agritech 38, 217. https://doi.org/10.22146/agritech.15311

Jain, D., Ilyas, S.M., Pathare, P., Prasad, S., Singh, H., 2005. Development of mathematical model for cooling the fish with ice. Journal of Food Engineering 71, 324–329. https://doi.org/10.1016/j.jfoodeng.2005.03.035

Jang, H., Kim, M.-H., Park, S.-K., Kim, Y.-S., Choi, B.C., 2020. Simulation of Heat and Mass Transfer Characteristics for the Optimal Operating Conditions of a Gas-to-Gas Membrane Humidifier with Porous Metal Foam. Energies 13, 5110. https://doi.org/10.3390/en13195110

Jaysrichai, T., 2018. Load Cells Application for Developing Weight-Bearing Detection via Wireless Connection. TOBEJ 12, 101–107. https://doi.org/10.2174/1874120701812010101

Jeong, J.-Y., Kim, G.-D., Yang, H.-S., Joo, S.-T., 2011a. Effect of freeze–thaw cycles on physicochemical properties and color stability of beef semimembranosus muscle. Food Research International 44, 3222–3228. https://doi.org/10.1016/j.foodres.2011.08.023

Jeyasekaran, G., Ganesan, P., Anandaraj, R., Jeya Shakila, R., Sukumar, D., 2006a. Quantitative and qualitative studies on the bacteriological quality of Indian white shrimp (Penaeus indicus) stored in dry ice. Food Microbiology 23, 526–533. https://doi.org/10.1016/j.fm.2005.09.009

Jeyasekaran, G., Ganesan, P., Anandaraj, R., Jeya Shakila, R., Sukumar, D., 2006b. Quantitative and qualitative studies on the bacteriological quality of Indian white shrimp (Penaeus indicus) stored in dry ice. Food Microbiology 23, 526–533. https://doi.org/10.1016/j.fm.2005.09.009

Jeyasekaran, G., Ganesan, P., Jeya Shakila, R., Maheswari, K., Sukumar, D., 2004a. Dry ice as a novel chilling medium along with water ice for short-term preservation of fish Emperor breams, lethrinus (Lethrinus miniatus). Innovative Food Science & Emerging Technologies 5, 485–493. https://doi.org/10.1016/j.ifset.2004.06.003

Jeyasekaran, G., Ganesan, P., Jeya Shakila, R., Maheswari, K., Sukumar, D., 2004b. Dry ice as a novel chilling medium along with water ice for short-term preservation of fish Emperor breams, lethrinus (Lethrinus miniatus). Innovative Food Science & Emerging Technologies 5, 485–493. https://doi.org/10.1016/j.ifset.2004.06.003

Jeyasekaran, G., Ganesan, P., Jeya Shakila, R., Maheswari, K., Sukumar, D., 2004c. Dry ice as a novel chilling medium along with water ice for short-term preservation of fish Emperor breams, lethrinus (Lethrinus miniatus). Innovative Food Science & Emerging Technologies 5, 485–493. https://doi.org/10.1016/j.ifset.2004.06.003

Jeyasekaran, G., Jeya Shakila, R., Sukumar, D., Ganesan, P., Anandaraj, R., 2010a. Quality changes in squid (Loligo duvaucelli) tubes chilled with dry ice and water ice. J Food Sci Technol 47, 401–407. https://doi.org/10.1007/s13197-010-0066-5

Jeyasekaran, G., Jeya Shakila, R., Sukumar, D., Ganesan, P., Anandaraj, R., 2010b. Quality changes in squid (Loligo duvaucelli) tubes chilled with dry ice and water ice. J Food Sci Technol 47, 401–407. https://doi.org/10.1007/s13197-010-0066-5

UNIVERSITAS
GADJAH MADA
PENGEMBANGAN TEKNOLOGI PENDINGINAN METODE PELAT TEKAN (COMPRESSION PLATE METHOD) PADA PROSES PRECOOLING DAGING DAN IKAN
SURYA ABDUL MUTTALIB, Dr. Ir. Nursigit Bintoro, M.Sc
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Jeyasekaran, G., Jeya Shakila, R., Sukumar, D., Ganesan, P., Anandaraj, R., 2010c. Quality changes in squid (Loligo duvaucelli) tubes chilled with dry ice and water ice. J Food Sci Technol 47, 401–407. https://doi.org/10.1007/s13197-010-0066-5

Jeyasekaran, G., Jeya Shakila, R., Sukumar, D., Ganesan, P., Anandaraj, R., 2010d. Quality changes in squid (Loligo duvaucelli) tubes chilled with dry ice and water ice. J Food Sci Technol 47, 401–407. https://doi.org/10.1007/s13197-010-0066-5

Jia, F., Jing, Y., Dai, R., Li, X., Xu, B., 2020a. High-pressure *thawing* of pork: Water holding capacity, protein denaturation and ultrastructure. Food Bioscience 38, 100688. https://doi.org/10.1016/j.fbio.2020.100688

Jiang, Q., Nakazawa, N., Hu, Y., Wang, X., Osako, K., Okazaki, E., 2021. Evolution of tissue microstructure, protein properties, and oxidative stability of salted bigeye tuna (Thunnus obesus) meat during frozen storage. LWT 149, 111848. https://doi.org/10.1016/j.lwt.2021.111848

Kaale, L.D., Eikevik, T.M., Bardal, T., Kjorsvik, E., Nordtvedt, T.S., 2013. The effect of cooling rates on the ice crystal growth in air-packed salmon fillets during superchilling and superchilled storage. International Journal of Refrigeration 36, 110–119. https://doi.org/10.1016/j.ijrefrig.2012.09.006

Karel, M., Fennema, O.R., Lund, D.B., 1975a. Physical principles of food preservation, Principles of food science. M. Dekker, New York.

Karel, M., Fennema, O.R., Lund, D.B., 1975b. Physical principles of food preservation, Principles of food science. M. Dekker, New York.

Khan, M.Y., Mittal, A., 2017. Freezing of food products: A review 6, 6.

Kuffi, K.D., Defraeye, T., Nicolai, B.M., De Smet, S., Geeraerd, A., Verboven, P., 2016. CFD modeling of industrial cooling of large beef carcasses. International Journal of Refrigeration 69, 324–339. https://doi.org/10.1016/j.ijrefrig.2016.06.013

Laguerre, O., Derens, E., Flick, D., 2018. Modelling of fish refrigeration using flake ice. International Journal of Refrigeration 85, 97–108. https://doi.org/10.1016/j.ijrefrig.2017.09.014

Lampila, L.E., 1990. Comparative microstructure of red meat, poultry and fish muscle. Journal of Muscle Foods 1, 247–267. https://doi.org/10.1111/j.1745-4573.1990.tb00369.x

Ledesma, R.D., Valero-Mora, P., Macbeth, G., 2015. The Scree Test and the Number of Factors: a Dynamic Graphics Approach. Span. J. Psychol. 18, E11. https://doi.org/10.1017/sjp.2015.13

Leygonie, C., Britz, T.J., Hoffman, L.C., 2012. Impact of freezing and *thawing* on the quality of meat: Review. Meat Science 91, 93–98. https://doi.org/10.1016/j.meatsci.2012.01.013

Li, D., Zhu, Z., Sun, D.-W., 2018. Effects of freezing on cell structure of fresh cellular food materials: A review. Trends in Food Science & Technology 75, 46–55. https://doi.org/10.1016/j.tifs.2018.02.019

Li, R., Rovers, T.A.M., Jæger, T.C., Hougaard, A.B., Svensson, B., Simonsen, A.C., Ipsen, R., 2021. Effect of *thawing* procedures on the properties of frozen and subsequently thawed casein concentrate. International Dairy Journal 112, 104860. https://doi.org/10.1016/j.idairyj.2020.104860

UNIVERSITAS
GADJAH MADA
PENGEMBANGAN TEKNOLOGI PENDINGINAN METODE PELAT TEKAN (COMPRESSION PLATE METHOD) PADA PROSES PRECOOLING DAGING DAN IKAN
SURYA ABDUL MUTTALIB, Dr. Ir. Nursigit Bintoro, M.Sc
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Li, X., Wu, W., Li, K., Ren, X., Wang, Z., 2022. Experimental study on a wet precooling system for fruit and vegetables with ice slurry. International Journal of Refrigeration 133, 9–18. https://doi.org/10.1016/j.ijrefrig.2021.10.001

Liu, B., Ma, R., Fan, H., 2021. Evaluation of the impact of freeze-thaw cycles on pore structure characteristics of black soil using X-ray computed tomography. Soil and Tillage Research 206, 104810. https://doi.org/10.1016/j.still.2020.104810

Lubis, Z., Wibowo, A., Annisa, S., 2019. Metode baru pernacangan mesin pendingin mini menggunakan rangkaian variabel lm317 berbasis arduino uno (fokus hardware dan software) 15, 6.

Macé, S., Cardinal, M., Jaffrès, E., Cornet, J., Lalanne, V., Chevalier, F., Sérot, T., Pilet, M.-F., Dousset, X., Joffraud, J.-J., 2014. Evaluation of the spoilage potential of bacteria isolated from spoiled cooked whole tropical shrimp (Penaeus vannamei) stored under modified atmosphere packaging. Food Microbiology 40, 9–17. https://doi.org/10.1016/j.fm.2013.11.018

Mao, J., Zhao, L., Di, Y., Liu, X., Xu, W., 2020. A resolved CFD–DEM approach for the simulation of landslides and impulse waves. Komputer Methods in Applied Mechanics and Engineering 359, 112750. https://doi.org/10.1016/j.cma.2019.112750

Maulana Firdaus, R., Supriyo, B., Suharjono, A., 2019. Electronic and GUI Developtmen of Roller Brake Tester. J. Phys.: Conf. Ser. 1273, 012070. https://doi.org/10.1088/1742-6596/1273/1/012070

Maximo, G.J., Ferreira, M.C., Shiozawa, S., Bessa, L.C.B.A., Meirelles, A.J.A., Batista, E.A.C., 2019. Chapter 7 - Liquid–Liquid and Vapor–Liquid–Liquid Equilibrium in Food Processes, in: Thermodynamics of Phase Equilibria in Food Engineering. Academic Press, pp. 275–334.

Michele, P., 2021. OECD-FAO Agricultural Outlook 2021-2030.

Moria, H., Pourhedayat, S., Dizaji, H.S., Abusorrah, A.M., Abu-Hamdeh, N.H., Wae-hayee, M., 2021. Exergoeconomic analysis of a Peltier effect air cooler using experimental data. Applied Thermal Engineering 186, 116513. https://doi.org/10.1016/j.applthermaleng.2020.116513

Muchtar, H., Sumanjaya, R., 2018. Control Switch Otomatis pada Tegangan Energi Alternatif dan Tegangan Sumber PLN Menggunakan Raspberry Pi. RESISTOR 1, 97. https://doi.org/10.24853/resistor.1.2.97-102

Mutlu Ozturk, H., 2021. Energy and exergy analyses of vacuum cooling as experimental assessment: case study for boiled cauliflower (Brassica Oleracea Var). J Therm Anal Calorim 145, 1335–1352. https://doi.org/10.1007/s10973-020-10487-3

Muttalib, S.A., Bintoro, N., Karyadi, J.N.W., Dwi, A., 2023. Development of Device for Force Compressive Control System in a Freezer of Pressed-Plate Type 12.

Muttalib, S.A., Bintoro, N., Karyadi, J.N.W., Saputro, A.D., 2024. Development of method and apparatus to speed up cooling process of fish products. Presented at the Proceedings Of The 8th International Conference On Engineering, Technology, And Industrial Applications 2021 (8th ICETIA 2021): Engineering, Environment, and Health: Exploring the Opportunities for the Future, Surakarta, Indonesia, p. 020003. https://doi.org/10.1063/5.0180090

Muys, D., Westenbrink, G., Meinderts, J., 1995. Pig husbandry in the tropics, 5. ed. ed, Agrodok. AGROMISA, Wageningen.

UNIVERSITAS
GADJAH MADA
PENGEMBANGAN TEKNOLOGI PENDINGINAN METODE PELAT TEKAN (COMPRESSION PLATE METHOD) PADA PROSES PRECOOLING DAGING DAN IKAN
SURYA ABDUL MUTTALIB, Dr. Ir. Nursigit Bintoro, M.Sc
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Ninan, D.G., n.d. Handling, Chilling and Freezing of Fishery Products.

Noya Van Delsen, M.S., Wattimena, A.Z., Saputri, S., 2017. Penggunaan metode analisis komponen utama untuk mereduksi faktor-faktor inflasi Di Kota Ambon. Barekeng: J. Mat. & Ter. 11, 109–118. https://doi.org/10.30598/barekengvol11iss2pp109-118

Nugroho, R.R., Nursigit Bintoro,Joko, 2017. Analisis Sistem Aerasi pada Penyimpanan Gabah dalam Silo Menggunakan Computational Fluid Dynamics (CFD) | Jurnal Keteknikan Pertanian [WWW Document]. URL https://journal.ipb.ac.id/index.php/jtep/article/view/18522 (accessed 2.11.24).

Orban, E., Nevigato, T., Di Lena, G., Masci, M., Casini, I., Caproni, R., Rampacci, M., 2011. Total volatile basic nitrogen and trimethylamine nitrogen levels during ice storage of European hake (Merluccius merluccius): A seasonal and size differentiation. Food Chemistry 128, 679–682. https://doi.org/10.1016/j.foodchem.2011.03.086

Patel, A., Sao, A., Nair, S., Mandavi, J., Tamrakar, N., 2022. Principal component analysis for eight quantitative traits in 55 indigenous rice germplasm (Oryza sativa L.).

Pham, Q.T., 2006. Modelling heat and mass transfer in frozen foods: a review. International Journal of Refrigeration 29, 876–888. https://doi.org/10.1016/j.ijrefrig.2006.01.013

Piranavatharsan, U., Jinadasa, B.K.K.K., Jayasinghe, C.V.L., 2023. Validation of thiobarbituric acid reactive substances (TBARS) method for measuring secondary lipid oxidation products in fresh Indian mackerel (Rastrelliger kanagurta). Food and Humanity 1, 1194–1199. https://doi.org/10.1016/j.foohum.2023.09.009

Prasetyo, A., Wijaksana, H., Suarnadwipa, N., 2019. Studi Eksperimental Penggunaan Dry Ice Untuk Konfigurasi Inline Dengan Rasio Pengisian Tube 50% Terhadap Performansi Dew Point Cooling Sistem 8, 6.

Prihharsanti, A.H.T., 2009. Populasi Bakteri dan Jamur pada Daging Sapi dengan Penyimpanan Suhu Rendah 7, 7.

Program Studi Statistika, F.MIPA, Universitas Syiah Kuala, Anwar, S., 2018. Modifikasi Pembobotan Systemic Important Score dengan Principal Component Analysis. JEPI 18, 128–151. https://doi.org/10.21002/jepi.2018.08

Purwantana, B., Bintoro, N., 2012. Mesin pembelah biji kedelai (Glycine max L.) sistem gesek putar 32.

Rahman, S. (Ed.), 2007. Handbook of food preservation, 2nd ed. ed, Food science and technology. CRC Press, Boca Raton.

Ramady, G.D., Lestari, N.S., Fadriani, H., Sufyani, R., Mahardika, A.G., Hidayat, R., Hermawaty, 2021. Development of a Cooling System Simulation Model using Thermoelectric Peltier based on Microcontroller. J. Phys.: Conf. Ser. 1933, 012088. https://doi.org/10.1088/1742-6596/1933/1/012088

Realini, C.E., Guàrdia, M.D., Garriga, M., Pérez-Juan, M., Arnau, J., 2011. High pressure and freezing temperature effect on quality and microbial inactivation of cured pork carpaccio. Meat Science 88, 542–547. https://doi.org/10.1016/j.meatsci.2011.02.008

UNIVERSITAS
GADJAH MADA
PENGEMBANGAN TEKNOLOGI PENDINGINAN METODE PELAT TEKAN (COMPRESSION PLATE METHOD) PADA PROSES PRECOOLING DAGING DAN IKAN
SURYA ABDUL MUTTALIB, Dr. Ir. Nursigit Bintoro, M.Sc
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Ren, Q., Zhu, X., Li, J., Han, J., Fang, K., 2023. Heat and mass transfer model for pork carcass precooling: Comprehensive evaluation and optimization. Food and Bioproducts Processing 138, 70–85. https://doi.org/10.1016/j.fbp.2023.01.004

Rigdon, M., Stelzleni, A.M., McKee, R.W., Pringle, T.D., Bowker, B., Zhuang, H., Thippareddi, H., 2021. Texture and quality of chicken sausage formulated with woody breast meat. Poultry Science 100, 100915. https://doi.org/10.1016/j.psj.2020.12.014

Saritza, M., Kotsios, D.P., Theodorakioglou, F., Theodoros, M.P., Michalis, M.S., Despoina, M.T., n.d. Meat And Fish Products And Processing 310.

Sasi, M., Jeyasekaran, G., Shanmugam, S.A., Jeyashakila, R., 2000. Chilling Fresh Fish in Dry and Wet Ice 8.

Schober, P., Boer, C., Schwarte, L.A., 2018. Correlation Coefficients: Appropriate Use and Interpretation. Anesthesia & Analgesia 126, 1763. https://doi.org/10.1213/ANE.0000000000002864

Setyadi, H.J., Taruk, M., Widagdo, P.P., Pakpahan, H.S., 2017. Sistem kendali untuk monitoring alat bantu (light center, condesate tank and pump) studi kasus : PLTGU Tanjung Batu Kutai Kartanegara 5.

Shaleh, A.I., Bani, A.U., Sudarsono, B.G., 2022. Design and Manufacture of Air Pressure Measuring Instruments With Arduino Microcontroller-Based Presure Water Sensors. Journal of Mathematics and Technology 1, 12.

Silvestri, L., 2021. CFD modeling in Industry 4.0: New perspectives for smart factories. Procedia Komputer Science 180, 381–387. https://doi.org/10.1016/j.procs.2021.01.359

Sinaga, F.O., Amdani, K., Rajagukguk, J., 2019. Rancang bangun miniatur eskalator otomatis menggunakan sensor berat (load cell) berbasis mikrokontroler ATMEGA 2560 7.

Smith, N.A.S., Mitchell, S.L., Ramos, A.M., 2014. Analysis and simplification of a mathematical model for high-pressure food processes. Applied Mathematics and Computation 226, 20–37. https://doi.org/10.1016/j.amc.2013.10.030

Soedioetama, A., 2010. Ilmu Gizi, 7. Dian Rakyat, Jakarta.

Soglia, F., Silva, A.K., Lião, L.M., Laghi, L., Petracci, M., 2019. Effect of broiler breast abnormality and freezing on meat quality and metabolites assessed by 1 H-NMR spectroscopy. Poultry Science 98, 7139–7150. https://doi.org/10.3382/ps/pez514

Solo-de-Zaldívar, B., Herranz, B., Borderías, A.J., Tovar, C.A., 2014. Effect of freezing and frozen storage on restructured FISH prototypes made with glucomannan and FISH mince. Food Hydrocolloids 41, 233–240. https://doi.org/10.1016/j.foodhyd.2014.04.019

Srivastava, R.S., Kumar, A., Sharma, S., Thakur, H., Patel, S., Vaish, R., 2021. Development and applications of thermoelectric based dehumidifiers. Energy and Buildings 252, 111446. https://doi.org/10.1016/j.enbuild.2021.111446

Stanisławczyk, R., Rudy, M., Gil, M., 2019. The influence of frozen storage and selected substances on the quality of horse meat. Meat Science 155, 74–78. https://doi.org/10.1016/j.meatsci.2019.04.024

Sumardjo, D., Mulyani, N.S., n.d. Oksidasi lemak dalam daging kel1nci dan ayam pada kondisi penyimpanan yang berbeda 5.

UNIVERSITAS
GADJAH MADA
PENGEMBANGAN TEKNOLOGI PENDINGINAN METODE PELAT TEKAN (COMPRESSION PLATE METHOD) PADA PROSES PRECOOLING DAGING DAN IKAN
SURYA ABDUL MUTTALIB, Dr. Ir. Nursigit Bintoro, M.Sc
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Sun, D.-W., Hu, Z., 2003. CFD simulation of coupled heat and mass transfer through porous foods during vacuum cooling process. International Journal of Refrigeration 26, 19–27. https://doi.org/10.1016/S0140-7007(02)00038-5

Suryana, E.A., Martianto, D., Baliwati, Y.F., 2019. Pola Konsumsi dan Permintaan Pangan Sumber Protein Hewani di Provinsi Nusa Tenggara Barat dan Nusa Tenggara Timur. Analisis Kebijak. Pertan. 17, 1. https://doi.org/10.21082/akp.v17n1.2019.1-12

Svendsen, E.S., Widell, K.N., Tveit, G.M., Nordtvedt, T.S., Uglem, S., Standal, I., Greiff, K., 2022. Industrial methods of freezing, *thawing* and subsequent chilled storage of whitefish. Journal of Food Engineering 315, 110803. https://doi.org/10.1016/j.jfoodeng.2021.110803

Szpicer, A., Bińkowska, W., Wojtasik-Kalinowska, I., Salih, S.M., Półtorak, A., 2023. Application of computational fluid dynamics simulations in food industry. Eur Food Res Technol 249, 1411–1430. https://doi.org/10.1007/s00217-023-04231-y

Tao, Y., Guo, Y., Li, J., Ye, K., Zhang, Y., Zeng, X., Dou, H., 2023. Effect of temperature fluctuation during superchilling storage on the microstructure and quality of raw pork. Meat Science 198, 109096. https://doi.org/10.1016/j.meatsci.2023.109096

Tornberg, E., 2005. Effects of heat on meat proteins – Implications on structure and quality of meat products. Meat Science 70, 493–508. https://doi.org/10.1016/j.meatsci.2004.11.021

Trujillo, F.J., Pham, Q.T., 2006. A computational fluid dynamic model of the heat and moisture transfer during beef chilling. International Journal of Refrigeration 29, 998–1009. https://doi.org/10.1016/j.ijrefrig.2006.05.001

Utama, Y., Widianto, Y., Sardjono, A., Kusuma, H., 2018. Sistem Pengaturan Dasar. Aseni, Mimika Baru.

Valentas, K.J., Rotstein, E., Singh, R.P. (Eds.), 1997. Handbook of food engineering practice. CRC Press, Boca Raton, Fla.

Valtýsdóttir, K.L., Margeirsson, B., Arason, S., Lauzon, H.L., Martinsdóttir, E., n.d. Guidelines for precooling of fresh fish during processing and choice of packaging with respect to temperature control in cold chains.

Villamonte, G., Simonin, H., Duranton, F., Chéret, R., de Lamballerie, M., 2013. Functionality of pork meat proteins: Impact of sodium chloride and phosphates under high-pressure processing. Innovative Food Science & Emerging Technologies 18, 15–23. https://doi.org/10.1016/j.ifset.2012.12.001

Wang, Q., Wang, Y., Li, M., Hadibi, T., Kang, L., Liu, Q., 2024. Ice slurry preparation methods and their applicability to fruit and vegetable precooling systems: A critical review. International Journal of Refrigeration 157, 60–72. https://doi.org/10.1016/j.ijrefrig.2023.10.016

Wang, S.K., 2000. Handbook of air conditioning and refrigeration, 2nd ed. ed. McGraw-Hill, New York.

Wang, Y., Liang, H., Xu, R., Lu, B., Song, X., Liu, B., 2020. Effects of temperature fluctuations on the meat quality and muscle microstructure of frozen beef. International Journal of Refrigeration 116, 1–8. https://doi.org/10.1016/j.ijrefrig.2019.12.025

Wang, Y.-Y., Tayyab Rashid, M., Yan, J.-K., Ma, H., 2021. Effect of multi-frequency ultrasound *thawing* on the structure and rheological properties of myofibrillar

UNIVERSITAS
GADJAH MADA
PENGEMBANGAN TEKNOLOGI PENDINGINAN METODE PELAT TEKAN (COMPRESSION PLATE METHOD) PADA PROSES PRECOOLING DAGING DAN IKAN
SURYA ABDUL MUTTALIB, Dr. Ir. Nursigit Bintoro, M.Sc
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

proteins from small yellow croaker. Ultrasonics Sonochemistry 70, 105352. https://doi.org/10.1016/j.ultsonch.2020.105352

Wulantika, T., 2021. Perubahan kondisi produk hortikultura pada penyimpanan suhu rendah dan suhu ruang.

Xia, B., Sun, D.-W., 2002. Applications of computational fluid dynamics (cfd) in the food industry: a review. Komputers and Electronics in Agriculture 34, 5–24. https://doi.org/10.1016/S0168-1699(01)00177-6

Xia, X., Kong, B., Liu, J., Diao, X., Liu, Q., 2012a. Influence of different *thawing* methods on physicochemical changes and protein oxidation of porcine longissimus muscle. LWT - Food Science and Technology 46, 280–286. https://doi.org/10.1016/j.lwt.2011.09.018

Xia, X., Kong, B., Liu, J., Diao, X., Liu, Q., 2012b. Influence of different *thawing* methods on physicochemical changes and protein oxidation of porcine longissimus muscle. LWT - Food Science and Technology 46, 280–286. https://doi.org/10.1016/j.lwt.2011.09.018

Xu, C.-C., Liu, D.-K., Guo, C.-X., Wu, Y., 2020. Effect of cooling rate and super-chilling temperature on ice crystal characteristic, cell structure, and physicochemical quality of super-chilled fresh-cut celery. International Journal of Refrigeration 113, 249–255. https://doi.org/10.1016/j.ijrefrig.2020.01.024

Xu, J.-C., Zhang, M., Mujumdar, A.S., Adhikari, B., 2017. Recent developments in smart freezing technology applied to fresh foods. Critical Reviews in Food Science and Nutrition 57, 2835–2843. https://doi.org/10.1080/10408398.2015.1074158

Yan, W., Rajcan, I., 2002. Biplot Analysis of Test Sites and Trait Relations of Soybean in Ontario. Crop Science 42, 11–20. https://doi.org/10.2135/cropsci2002.1100

Yanagisawa, T., Ariizumi, M., Shigematsu, Y., Kobayashi, H., Hasegawa, M., Watanabe, K., 2010. Combination of Super Chilling and High Carbon Dioxide Concentration Techniques Most Effectively to Preserve Freshness of Shell Eggs during Long-Term Storage. Journal of Food Science 75, E78–E82. https://doi.org/10.1111/j.1750-3841.2009.01451.x

Yendri, D., Adrizal, Derisma, Afif, H., 2020. Design of Cow Cattle Weighing System Technology and Automatic Giving Feed, in: 2020 International Conference on Information Technology Systems and Innovation (ICITSI). Presented at the 2020 International Conference on Information Technology Systems and Innovation (ICITSI), IEEE, Bandung - Padang, Indonesia, pp. 185–191. https://doi.org/10.1109/ICITSI50517.2020.9264977

Zahorulko, A., Cherevko, O., Zagorulko, A., Yancheva, M., Budnyk, N., Nakonechna, Y., Oliynyk, N., Novgorodska, N., 2021. Design of an apparatus for low-temperature processing of meat delicacies. EEJET 5, 6–12. https://doi.org/10.15587/1729-4061.2021.240675

Zhang, C., Yang, L., Lin, W., Wei, J., Chen, J., Ma, Z., 2021. Experimental investigation and life-cycle cost analysis of a cold storage enhanced vacuum cooling system using ice slurry. Sustainable Energy Technologies and Assessments 45, 101074. https://doi.org/10.1016/j.seta.2021.101074

Zhang, M., Li, F., Diao, X., Kong, B., Xia, X., 2017. Moisture migration, microstructure damage and protein structure changes in porcine longissimus muscle as influenced

UNIVERSITAS
GADJAH MADA
PENGEMBANGAN TEKNOLOGI PENDINGINAN METODE PELAT TEKAN (COMPRESSION PLATE METHOD) PADA PROSES PRECOOLING DAGING DAN IKAN
SURYA ABDUL MUTTALIB, Dr. Ir. Nursigit Bintoro, M.Sc
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

by multiple freeze-thaw cycles. Meat Science 133, 10–18. https://doi.org/10.1016/j.meatsci.2017.05.019

Zhang, M., Xia, X., Liu, Q., Chen, Q., Kong, B., 2019. Changes in microstructure, quality and water distribution of porcine longissimus muscles subjected to ultrasound-assisted immersion freezing during frozen storage. Meat Science 151, 24–32. https://doi.org/10.1016/j.meatsci.2019.01.002

Zhou, P., Chu, Y., Lv, Y., Xie, J., 2022. Quality of frozen mackerel during storage as processed by different freezing methods. International Journal of Food Properties 25, 593–607. https://doi.org/10.1080/10942912.2022.2053154