REFERENCES

Abdullah, A.Y. & S.K. Matarneh. 2010. "Broiler performance and the effects of carcass weight, broiler sex, and post chill carcass aging duration on breast fillet quality characteristics". *Journal of Applied Poultry Research*. Vol. 19. p. 46–58.

Addeen, A., S. Benjakul, S. Wattanachant, & S. Moqsood. 2014. "Effect of Islamic slaughtering on chemical compositions and post-mortem quality changes of broiler chicken meat". *International Food Research Journal*. Vol. 21. (3): p. 897-907.

Addis, P. B. 1986. "Occurrence of lipid oxidation products in foods". *Food Chemistry and Toxicology*. Vol. 24. p. 1021-1030.

Agbeniga Babatunde 2011. Influence of conventional and Kosher slaughter techniques in cattle on carcass and meat quality (Master Thesis). University of Pretoria. p. 63.

Agunbiade, S. O., O. A. Akintobi, & O. M. Ighodaro. 2010. "Some Biochemical and Organoleptic changes due to Microbial growth in Minced Beef packaged in Aluminium polyethylene trays and Stored under Chilled condition". *Life Science Journal*. Vol. 7. (2): p. 47-51.

Ahn, D. U., K.C. Nam, & E.J. Lee. 2009. "Lipid oxidation and flavour". *Meat Science*. p. 227-246.

Alan, R. S. 2001. *Poultry meat processing. Department of Poultry Science. Texas, A.& M. University*. C. R.C. Press LLC.

Ali, S.A.M., A. Hyder, O. Abdalla & I.M. Mahgoub. 2011. "Effect of slaughter methods on the keeping quality of broiler chicken's meat". *Egypt Poultry Science* Vol. 31. p. 727-736.

Allen, C. D., D. L. Fletcher, J. K. Northcutt & S. M. Russell. 1998. "The relationship of broilers breast colour to meat quality and shelf-life". *Poultry Science*. Vol. 77. p. 361-366.

Allen, C. D., S. M. Russell & D. L. Fletcher. 1997. "The relation of broilers breast meat color and pH to shelf-life and odour development". *Poultry Science*. Vol. 76. p. 1042-1046.

Alvarado, C. Z. & A. R. Sams. 2004. "Injection marination strategies for remediation of pale, exudative broilers breast meat". *Poultry Science*. Vol. 82. p. 1332-1336.

Alvarado, C.Z., M.P. Richards, S.F. O'keefe & H. Wang. 2007. "The effect of blood removal on oxidation and shelf-life of broiler breast meat". *Poultry Science*. Vol. 86. p. 156-161.

Anadon, H. L. S. 2002. *Biological, Nutritional, and Processing Factors Affecting Breast Meat Quality of Broilers*.(PhD Thesis). Virginia Polytechnic Institute and State University. Blacksburg, Virginia. USA. p.181.

Anil, M.H. & J.L. McKinstry. 1992. "The effectiveness of high frequency electrical stunning of pigs". *Meat Science.* Vol. 31. p. 481-491.

Anil, M.H. 2012. "Slaughter and Meat Quality Project 74505: Effects of slaughter method on carcass and meat characteristics in the meat of cattle and sheep". *EBLEX Research and Development Technical Report.* 31 December. p. 4-22.

Anil, M.H., J.L. McKinstry & S.B. Wotton. 1997. "Electrical stunning and slaughter of pigs". *Guidelines for good welfare assurance Fleischwirtschaft.* Vol. 77. (7): p. 632-635.

Anil, M.H., J.L. McKinstry, N.G. Gregory, S.B. Wotton & H. Symonds. 1995b. "Welfare of calves. 2. Increase in vertebral artery blood flow following exsanguination by neck sticking and evaluation of chest sticking as an alternative slaughter method". *Meat Science.* Vol. 41. p. 113-123.

Anil, M.H., J.L. McKinstry, S.B. Wotton & N.G. Gregory. 1995a. "Welfare of calves–1. Investigation into some Aspects of Calf Slaughter". *Meat Science.* Vol. 41. (2): p. 101-112.

Anil, M.H., T. Yesildere, H. Aksu, E. Matur, J.L. McKinstry, O. Erdogan, S. Hughes & C. Mason. 2004. "Comparison of religious slaughter of sheep with methods that include pre-slaughter stunning and the lack of differences in exsanguination, packed cell volume and quality parameters". *Animal Welfare.* Vol. 13. (4): p. 387-392.

Anil, M.H., T. Yesildere, H. Aksu, E. Matur, J.L. McKinstry, O. Erdogan, S. Hughes & C. Mason. 2006. "Comparison of Halal slaughter with captive bolt stunning and neck cutting in cattle: exsanguination and quality parameters". *Animal Welfare.* Vol. 15. p. 325-330.

Axelsson, L. 1998. "Lactic Acid Bacteria: Classification and Physiology. In Lactic Acid Bacteria: Microbiology and Functional Aspects". Edited by Salminen S., & von Wright A. Marcel Dekker, New York, pp. 1-72.

Baéza, E., N. Jehl, Y. Jégo, M.J. Duclos & E. Le Bihan-Duval. 2006. "Variations in chicken breast meat quality: implications of struggle and muscle glycogen content at death". *British Poultry Science.* Vol. 46. p. 572-579.

Banerjee, G. C. 1998. A Textbook of Animal Husbandry. 8th ed. Oxford and IBH Publishing Co., Pvt. Ltd., New Delhi. pp: 896 – 921.

Baracho, M.S., G.A. Camargo, A.M.C. Lima, J.F. Mentem, D.J. Moura, J. Moreira, & I.A. Nääs. 2006. "Variables Impacting Poultry Meat Quality from Production to Pre-Slaughter: A Review". *Brazilian Journal of Poultry Science.* Vol. 8. (4): p. 201 – 212.

Barbut, S. 1996. "Estimates and detection of PSE problem in young turkey breast meat". *Canadian Journal of Animal Science.* Vol. 76. p. 455-457.

Barbut, S. 1997. "Problem of pale soft exudative meat in broiler chickens". *British Poultry Science*. Vol. 38. p. 355-358.

Barbut, S. 1998. "Estimating the magnitude of the PSE problem in poultry". *Journal of Muscle Foods*. Vol. 9. p. 35–49.

Barbut, S. 2002. Poultry Products Processing (An Industry Guide). CRC Press LLC. Florida. USA.

Barbut, S., L. Zhang & M. Marcone. 2005. "Effects of pale, normal, and dark chicken breast meat on microstructure, extractable proteins, and cooking of marinated fillets". *Poultry Science*. Vol. 84. p. 797-802.

Belitz, H.D., W. Grosch & P. Schieberle. 2009. Food Chemistry (4th Edition). Springer-Verlag Berlin Heidelberg, Germany, pp: 596.

Bendixen, E. 2005. "The use of Proteomics in Meat Science". *Meat Science*. Vol. 71. p. 138-149.

Benjakul, S. & F. Bauer. 2011. "Biochemical and physicochemical changes in catfish (Silurus granis Linne) muscle as influenced by different freeze-thaw cycles". *Food Chemistry*. Vol. 72. p. 207-217.

Berkel, B.M., B.V. Boogaard & C. Heijnen. 2004. Preservation of fish and meat. Agromisa Foundation, Wageningen, The Netherlands. Vol. 8. p. 78-80.

Berri, C. & N. Jehl. 2001. "Variation of technological and organoleptic quality of chicken meat". In: 4th Research Days Poultry. Paris, France: INRA. pp. 245-252.

Berri, C., E. LeBihan-Duval, M. Debut, V. Santé-Lhoutellier, E. Baéza, V. Gigaud, Y. Jégo, & M. J. Duclos. 2007. "Consequence of muscle hypertrophy on characteristics of Pectoralis major muscle and breast meat quality of broiler chickens". *Journal of Animal Science*. Vol. 85. p. 2005-2011.

Berri, C., M. Debut, V. Sante-Lhoutellier, C. Arnould, B. Boutten, N. Sellier, E. Baeza, N. Jehl, Y. Jego, M. J. Duclos & E. L. Bihan-Dual. 2005. "Variations in chicken breast meat quality: implications of struggle and muscle glycogen content at death". *British Poultry Science*. Vol. 46. (5): p. 572 -579.

Berri, C., N., Wacrenier, N. Millet & E. Le Bihan-Duval. 2001. "Effect of selection for improved body composition on muscle and meat characteristics of broilers from experimental and commercial lines". *Poultry Science*. Vol. 80. p. 833-838.

Bertram, H.C., J.S. Perterson & H.J. Andersen. 2000. "Relationship between RN genotype and drip loss in meat from Danish pigs". *Meat Science*. Vol. 56. p. 49-55.

Beutler, A. 2007. Introduction to Poultry Production in Saskatchewan, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 5A8. http://www.agriculture.gov.sk.ca/Introduction_Poultry_Production_Saskatchwan Accessed: October, 2014.

Bianchi, M. & D. L. Fletcher. 2002. "Effects of broilers breast meat thickness and background on colour measurements". *Poultry Science*. Vol. 81. p. 1766-1769.

Bianchi, M., D. L. Fletcher & D. P. Smith. 2005. "Physical and functional properties of intact and ground pale broilers breast meat". *Poultry Science*. Vol. 84. p. 303-808.

Bianchi, M., F. Capozzi, M. A. Cremonini, L. Laghi, M. Petracci, G. Placucci, & C. Cavani. 2004. "Influence of the season on the relationships between NMR transverse relaxation data and water-holding capacity of turkey breast meat". *Journal of Science and Food Agriculture*. Vol. 84. p. 1535-1540.

Bianchi, M., M. Petracci, & C. Cavani. 2006. "The influence of genotype, market live weight, transportation, and holding conditions prior to slaughter on broilers breast meat colour". *Poultry Science*. Vol. 85. p. 123-128.

Bianchi, M., M. Petracci, F. Sirri, E. Folegatti, A. Franchini, & A. Meluzzi. 2007. "The influence of the season and market class of broiler chickens on breast meat quality traits". *Poultry Science*. Vol. 86. p. 959-963.

Bogosavljevic-Boskovic, S., S. Mitrovic, R. Djokovic, V. Doskovic & V. Djermanovic. 2010. "Chemical composition of chicken meat produced in extensive indoor and free range rearing systems". *African Journal of Biotechnology*. Vol. 27. p. 9069-9075.

Bonomo, M.G., A. Ricciardi, T. Zotta , E. Parente, & G. Salzano. 2008. "Molecular and technological characterization of lactic acid bacteria from traditional fermented sausages of Basilicata region (Southern Italy)". *Meat Science*. Vol. 80. p. 1238-1248.

Borch, E., M. Kant-Muemans, & Y. Blixt. 1996. "Bacterial spoilage of meat products and cured meat products". *International Journal of Food Microbiology*. Vol. 33. p. 103-120.

Bourbab, M. & M. Idaomar. 2012. "The effect of residual blood of carcasses on poultry technological quality". *Food and Nutrition Sciences*. Vol. 3. p. 1382-1386.

Bradford, M.M. 1976. "A rapid and sensitive method for the quantitation of microgram quantities of protein utilizing the principle of protein-dye binding". *Analytical Biochemistry*. Vol. 72. p. 248-254.

Briskey, E. J. 1964. "Etiological status and associated studies of pale, soft, exudative porcine musculature". *Advances in Food Research*. Vol. 13. p. 89-178.

Brooke, M.H. & K.K. Kaiser. 1970. "Muscle fibre types: how many and what kind"? *Archives of Neurology*. Vol. 23. (4): p. 369-379.

Brunel, V., N. Jehl, L. Drouet & M.C. Portheau. 2006. "Poultry meat: Its nutritional value in meat production. *Meat Science*. Vol. 25. (1): p. 18-22.

Cascone, A. 2005. *Study and prevention of lipid oxidation in meat*. (Ph.D thesis) University of Naples Federico, Naples, Italy. p. 7-11.

Castellini, C., A. Dal Bosco, C. Mugnai & A. Pedrazzoli. 2006. "Comparison of two chicken genotypes organically reared: oxidative stability and other qualitative traits of the meat". *Italian Journal of Animal Science*. Vol. 5. p. 355-363.

Castellini, C., C. Mugnai & A. Dal Bosco. 2002. "Effect of inorganic production system on broiler carcass and meat quality". *Meat Science*. Vol. 60. p. 219-225.

Cerveny, J., J.D. Meyer & P.A. Hall. 2009. Microbiological Spoilage of Meat And Poultry Products In: Compendium Of The Microbiological Spoilage, Of Foods And Beverages. Food Microbiology and Food Safety, W.H. Sperber and M.P. Doyle (Eds.). Springer Science and Business Media, NY, pp. 69-868.

Chambers, P.G. & T. Grandin. 2001. Guidelines for humane handling, transport and slaughter of livestock. G. Heinz and T. Srisuvan (Eds.). http://www.fao.org/fileadmin/user_upload/animalwelfare/guidelines%20humane%20handling%20transport%20slaughter.pdf. Accessed: July, 2014.

Cheng, J. H. & H.W. Ockerman. 2004. "Effect of ascorbic acid with tumbling on lipid oxidation of precooked roast beef". *Journal of Muscle Foods*. Vol. 15. p. 83–93.

Cheng, Q.F. & D.W. Sun. 2008. "Factors affecting the water holding capacity of red meat products: A review of recent research advances". *Critical Review of Food Science and Nutrition.* Vol. 48. p. 137-159.

Choe, D. B. & D.B. Min. 2006. "Mechanisms and factors for edible oil oxidation". *Comprehensive Review of Food Science and Food Safety.* Vol. 5. p. 169-181.

Christie, W.W. 2010. Triacylglycerols Part 2. Biosynthesis and Metabolism. AOCS Library, http://lipidlibrary.aocs.org/Lipids/tag2/index.html.

Chuaynukool, K., S. Wattanachant & S. Siripongvutikorn. 2007. "Chemical and properties of raw and cooked spent hen, broiler and Thai indigenous chicken muscles in mixed herbs acidified soup (Tom Yum)". *Journal of Food Technology.* Vol. 5. p. 180-186.

Cook, C. J., S.A. Maasland, C.E. Devine, K.V. Gilbert & D.K. Blackmore. 1996. "Changes in the release of amino acid neurotransmitters in the brains of calves and sheep after head-only electrical stunning and throat cutting". *Research in Veterinary Science.* Vol. 60. p. 255-261.

Cook, C.J., 1999. "Neurological measures to quantify welfare aspects of stunning". *Proceedings of the International Workshop on Stunning Systems for Pigs and Animal Welfare*. Billund, Denmark.

Currie, R.W. & F.H. Wolfe. 1980. "Rigor related changes in mechanical properties (tensile and adhesive) and extracellular space in beef muscle". *Meat Science.* Vol. 4. p. 122-143.

D'Agata, M., C. Russo, & G. Preziuso. 2009. "Effect of Islamic ritual slaughter on beef Quality". *Italian Journal of Animal Science*. Vol. 8. (suppl. 2): p. 489-491.

Dadgar, S., E. S. Lee, T. L. V. Leer, N. Burlinguette, H. L. Classen, T. G. Crowe & P. J. Shand. 2010. "Effect of microclimate temperature during transportation of broiler chickens on quality of the Pectoralis major muscle". *Poultry Science*. Vol. 89. p. 1033-1041.

Dainty, R. H., & B. M. Mackey. 1992. "The relationship between the phenotypic properties of bacteria from chill-stored meat and spoilage processes". *Journal of Applied Bacteriology*. Vol. 73. p. 103S–114S.

Dave, D. & A.E. Ghaly. 2011. "Meat Spoilage Mechanisms and Preservation Techniques: A Critical Review". *American Journal of Agricultural and Biological Sciences*. Vol. 6. (4): p. 486-510.

De Marchi, M., M. Cassandro, E. Lunardi, G. Baldan & P.B. Siegel. 2005. "Carcass characteristics and qualitative meat traits of Padovana breed of chicken". *International Journal of Poultry Science*. Vol. 4. (4): p. 233-238.

Debut, M., C. Berri, C. Arnould, D. Guemene, V. Sante-Lhoutellier, N. Sellier, E. Baeza, N. Jenl, Y. Jego, C. Beaumont & E. Le Bihan-Duval. 2005. "Behavioural and physiological responses of three chicken breeds to pre-slaughter shackling and acute heat stress". *British Poultry Science*. Vol. 46. p. 527–535.

Debut, M., C. Berri, E. Baéza, N. Sellier, C. Arnould, D. Guémené, N. Jehl, B. Boutten, Y. Jego, C. Beaumont & E. Le Bihan-Duval. 2003. "Variation of chicken technological meat quality in relation to genotype and pre-slaughter stress conditions". *Poultry Science*. Vol. 82. p. 1829–1838.

Department of Agriculture, Animal Health and Product. 2004. Animal and animal origin foods. No. 625-04. Off. Bull., 5214: 727-745.

Department of Veterinary Service. Statistics on Per capita consumption of livestock, 2005-2014. Downloaded from http://www.dvs.gov.my/documents/10157/130cc2e6-91e8-48ca-ae12-bdaa4c787abc. Accessed: October, 2015.

Doherty, M.K., L. Mclean, J.R. Hayter, J.M. Pratt, D.H.L. Robertson, A. El-Shafei, S.J. Gaskell & R. Beynon. 2004. "The proteome of chicken muscle: Changes in soluble proteins expression during a growth in a layer strain". *Proteomics*. Vol. 4. p. 2082-2093.

Dransfield, E. & A.A. Sosnicki. 1999. "Relationship between muscle growth and poultry meat quality". *Poultry Science*. Vol. 78. p. 743–746.

Du, M., & D.U. Ahn. 2002. "Effect of antioxidant on the quality of Irradiated sausages prepared with turkey thigh meat". *Poultry Science*. Vol. 81. p. 1251-1256.

Eikelenboom, G., & D. Minkema. 1974. "Prediction of pale, soft, exudative muscle with a non-lethal test for the halothane-induced porcine malignant hyperthermia syndrome". *Tijdschr Diergeneesk*. Vol. 99. p. 421–426.

Ellis, D. I., D. Broadhurst, D. B. Kell, J. J. Rowland & R. Goodacre. 2002. "Rapid and quantitative detection of the microbial spoilage of meat by Fourier Transform Infrared Spectroscopy and machine learning". *Journal of Applied Environmental Microbiology*. Vol. 68. p. 2822-2828.

Enser, M. 2001. Muscle lipids and meat quality. http://www.bsas.org.uk/downloads/annlproc/Pdf2001/243.pdf. Accessed: August 2014.

Ercolini, D., F. Russo, G. Blaiotta, O. Pepe, G. Mauriello, & F. Villani. 2007. "Simultaneous detection of *Pseudomonas fragi, P. lundensis, and P. putida* from meat by a multiplex PCR assay targeting the carA gene". *Applied and Environmental Microbiology*. Vol. 73. p. 2354–2359.

European Community, 2009. COUNCIL REGULATION (EC) No 1099/2009 http://ec.europa.eu/food/animal/welfare/slaughter/regulation_1099_2009_en.pdf. Accessed: December, 2013.

Fanatico, A.C., L.C. Cavitt, P.B. Pillai, J.L. Emmert & C.M. Owens. 2005. "Evaluation of Slower-Growing Broiler Genotypes Grown with and without outdoor Access: Meat Quality". *Poultry Science* Vol. 84. p. 1785–1790.

FAO. 1991. Guidelines for slaughtering, meat cutting and further processing. FAO animal production and health paper 91. http://www.fao.org/docrep/004/t0279e/T0279E00.htm#TOC. Accessed: September, 2013.

FAO. 1986. Fisheries Technical Papers–T142. The production of fish meal and oil. Fisheries Industries Division, Food and Agriculture Organization of the United Nations, Rome, Italy. http://www.fao.org/DOCREP/003/X6899E/X6899E00.HTM Accessed: September, 2013.

FAWC, 2003. Report on the welfare of farmed animals at slaughter or killing. Part 1. Red Meat Animals. London, Farm Animal Welfare Council. http://www.fawc.co.uk/reports/pb8347.pdf. Accessed: September, 2013.

Fearon, R.F. & D.L. Foster. 1922. "The autolysis of beef and mutton". *Biochemical Journal*. Vol. 16. p. 564-571.

Fernandez, X., V. Santé, E. Baeza, E. Lebihan-Duval, C. Berri, H. Rémignon, R. Babilé, G. Le Pottier, & T. Astruc. 2002. "Effects of the rate of muscle post mortem pH fall on the technological quality of turkey meat". *British Poultry Science*. Vol. 43. p. 245–252.

Fernandez, X., V. Sante, E. Baeza, E. Lebihan-Duval, C. Berri, H. Remignon, R. Babile, G. Le Pottier, N. Millet, P. Berge, & T. Astruc. 2001. Post-mortem muscle metabolism and meat quality in three genetic types of turkey. *British Poultry Science*. Vol. 42. p. 462-469.

Fernindez, J., J.A. Perez-Alvarez & J.A. Fernindez- Lopez. 1997. "Thiobarbituric acid test for monitoring lipid oxidation in meat. *Food Chemistry*. Vol. 59. p. 345-353.

Fletcher, D.L. 1995. "Relationship of breast meat colour variation to muscle pH and texture". *Poultry Science.* Vol. 74S. p. 120.

Fletcher, D. L. 2002. "Poultry meat quality". *World's Poultry Science Journal.* Vol. 58. p. 131–145.

Fletcher, D. L., M. Qiao & D. P. Smith. 2000. "The relationship of raw broilers breast meat color and pH to cooked meat colour and pH". *Poultry Science.* Vol. 79. p.784-788.

Florek, M., A. Litwińczuk, P. Skałecki, & M. Ryszkowska-Siwko. 2007. "Changes of physicochemical properties of bullocks and heifers meat during 14 days of ageing under vacuum". *Polish Journal of Food Nutrition Science.* Vol. 57. p. 281-288.

Frankel, E.N. 1985. "Chemistry of free radical and singlet oxidation of lipids". *Progressive Lipid Research*. Vol. 23. p.197-221. Retrieved on 15th September 2010http://ddr.nal.usda.gov/bitstream/10113/23776/1/IND88046136.pdf

Fraser, O. & S. Sumar. 1998. "Compositional changes and spoilage in fish". *Nutrition Food Science*. Vol. 5. p. 275-279.

Froning, G. W., A. S. Babji, & F. B. Mather. 1978. "The effect of pre-slaughter temperature, stress, struggle and anesthetization on colour and textural characteristics of turkey muscle". *Poultry Science*. Vol. 57. p. 630-633.

Froning, G. W. 1995. Colour of poultry meat. *Poultry Avian Biology Reviews*. Vol. 6. (1): p. 83-93.

Garcia, R.G., A.A. Mendes, C. Costa, I.C.L.A. Paz, S.E. Takahashi, K.P. Pelícia, C.M. Komiyama, & R.R. Quinteiro. 2005. "Performance and quality of broilers meat fed sorghum different levels replacing corn". *Brazilian Journal of Veterinary Medicine and Animal Science*. Vol. 57. (5): p. 634-643.

Garcia-Lopez, M.L., M. Prieto & A. Otero. 1998. The physiological attributes of Gram-negative bacteria associated with spoilage of meat and meat products. In: The microbiology of meat and poultry, A. Davies and R. Board (Eds.), London: Blackie Academic and Professional, pp: 1-34.

Ghaly, A.E., D. Dave, S. Budge & M.S. Brooks. 2010. "Fish spoilage mechanisms and preservation techniques: Review". *American Journal of Applied Science.* Vol. 7. p. 846-864.

Gigaud, V. & C. Berri. 2007. "The influence of production factors on muscle glycolytic potential and impact on the quality of meat". Office 2006-2007. p. 44

Gigaud, V., A. Geffrard, C. Berri, E. Le Bihan-Duval, A. Travel & T. Bordeau. 2007. "Environmental conditions ante mortem (collection-transport-slaughter) and technological quality standard chicken fillets". 7th Poultry Research Days (Tours, France). pp. 470-474.

Gigaud, V., T. Bordeau, E. Le Bihan-Duval & C. Berri. 2008. "Ultimate pH impact on biological and taste qualities of chicken fillets". 12th Muscle Science and Technology Days meat (Tours, France, 8th and 9th October, 2008). p. 61-62.

Gigaud, V., E. Casenave, T. Bordeau, E. Baeza, & C. Berri. 2010. "Inventory of quality problems currently facing chicken fillets in French slaughterhouses". *Journal of Muscle Science and Technology*. Special Issue. p. 216.

Gill, C. O. & K. G. Newton. 1978. "The ecology of bacterial spoilage of fresh meat at chill temperatures". *Meat Science*. Vol. 14. p. 43–60.

Glitsch, K. (2000). "Consumer perceptions of fresh meat quality: cross-national comparison". *British Food Journal.* Vol. 102. p. 177 - 194.

Gordon, S.H., & D.R. Charles. 2002. Niche and Organic Chicken Products. Nottingham University Press, Nottingham, UK, 11p.

Gray, J.I. & A.M Pearson. 1994. Lipid derived off-flavour in meat-formation and inhibition. In: Flavour of meat and meat products. 1st Edn., Shahidi, F. (Ed.) Champman and Hall, London, UK. pp. 117-139.

Gray, J.I. 1978. "Measurement of lipid oxidation: A review". *Journal of American Oil Chemists Society*. Vol. 55. p. 539-546.

Gregory, N. G., P. Schuster, L. Mirabito, R. Kolesar & T. Mcmanus. 2012. "Arrested blood flow during false aneurysm formation in the carotid arteries of cattle slaughtered with and without stunning". *Meat Science*. Vol. 90. p. 368-372.

Gregory, N.B. & S.B. Wotton. 1985. "Sheep slaughtering procedures IV. Responsiveness of the brain following electrical stunning". *British Veterinary Journal.* Vol. 141. p. 74-81.

Gregory, N.G. & L.J. Wilkins. 1989. "Effect of stunning current on carcass quality in chickens". *Veterinary Records*. Vol. 124. p. 530-532.

Gregory, N.G. & S.B. Wotton. 1990. "Comparison of neck dislocation and percussion of the hand on visual evoked responses in the chicken's brain". *Veterinary Record* Vol. 126. p. 370-572.

Gregory, N.G., L.J. Wilkins & S.B. Wotton. 1991. "Effect of electrical stunning frequency on ventricular fibrillation, downgrading and broken bones in broilers, hens and quails". *British Veterinary Journal.* Vol. 147. p. 71-77.

Griffiths, G. L., M. Mcgrath, A. Softly & C. Jones. 1985. "Blood content of broiler chicken carcasses prepared by different slaughter method". *Veterinary Record.* Vol. 117. p. 382–385.

Groom, G.M. 1990. Factors affecting poultry meat quality. Mediterranean options. Series A1 7, p. 6.

Guillen, S. R. & C.M. Guzman. 1998. "The thiobarbibutric acid (TBA) reaction in food: a review". *Critical Review of Food Science and Nutrition*. Vol. 38. (4): p. 315-330.

Guillevic, M., M. Kouba, & J. Mourot. 2009. "An intake of extruded linseed in the chicken and turkey involved in improving the nutritional quality of meat". *Meat Science*. Vol. 81. p. 612-618.

Halal Food Authority n.d. http://www.halalfoodauthority.co.uk/pressrelease faqs.pdf. Accessed on 15th November, 2015.

Hambrecht, E.1., J.J. Eissen, R.I. Nooijent, B.J. Ducro, C.H. Smits, L.A. den Hartog & M.W. Verstegen. 2004. "Preslaughter stress and muscle energy largely determine pork quality at two commercial processing plants". *Journal of Animal Science*. Vol. 82. (5): p. 1401-1409.

Hartschuh, J. K., J. Novakofski & F. K. McKeith. 2002. "Practical aspects of the glycolytic potential assay". *Proceedings of the 55th Annual Reciprocal Meat Conference*. Michigan, USA: *American Meat Science Association*. pp. 39-42.

Havenstein, G.B., P.R. Ferket & M.A. Qureshi. 2003. "Carcass composition and yield of 1957 versus 2001 broilers when fed representative 1957 and 2001 broiler diets". *Poultry Science*. Vol. 82. p. 1509–1518.

Hayes, J.R., L.L. English, P.J. Carter, T. Proescholdt & K.Y. Lee. 2003. "Prevalence and antimicrobial resistance of Enterococcus species isolated from retail meats". *Applied Environmental Microbiology*. Vol. 69. p. 7153-7160.

Hedrick, H.B., E.D. Aberle, J.C. Forrest, M.D. Judge, R.A. Merkel. (1994): Principles of meat science. 3.ed., DUBUQUE:Kendal/Hunt Publ. Co., 354p.

Heinz, G., & P. Hautzinger. 2007. Meat Processing Technology. For Small-To Medium scale Producers. Food and Agriculture Organization of the United Nations Regional Office for Asia and the Pacific. Retrieved on November 2014 from ftp://ftp.fao.org/docrep/fao/010/ai407e/ai407e00.pdf.

Henckel, P., A. Karlsson, M. T. Jensen, N. Oksbjerg, & J. S. Petersen. 2002. "Metabolic conditions in porcine longissimus muscle immediately pre-slaughter and its influence on peri- and postmortem energy metabolism". *Meat Science*. Vol. 62. p. 145–155.

Hess, 1968. Fleschwirtschaft. 38:292). in R. d. wariss(Ed.).(1977). the residual blood content of meat-A review. *Journal of the Science of Food and Agriculture*. p. 28-457.

Holzapfel, W. H. 1998. The gram-positive bacteria associated with meat and meat products. p. 35–74. In A. Davies and R. Board (ed.), The microbiology of meat and poultry. Blackie Academic & Professional, London, England.

Honikel, K. O. 2002. Biochemical and physical aspects of water holding capacity. Pages 11–16 in Proc. 3rd Annual Pork Quality Improvement Symposium. Michigan State University, East Lansing.

Huda, M., A.A. Putra & R. Ahmad. 2001. "Potential application of duck meat for development of processed meat product". *Current Research in Poultry Science*. Vol. 1. (1): p. 1-11.

Huff-Lonergan, E., & S.M. Lonergan. 2005. "Mechanism of water-holding capacity of meat: The role of post-mortem biochemical and structural change". *Meat Science*. Vol. 71. p. 194-204.

Huff-Lonergan, E., T. Mitsuhashi, F. C. J. Parrish, & R. M. Robson, 1996. "Sodium dodecyl sulfate-polyacrylamide gel electrophoresis and western blotting comparisons of purified myofibrils and whole muscle preparations for evaluating titin and nebulin in post-mortem bovine muscle". *Journal of Animal Science*. Vol. 74. p. 779–785.

Huis, J.H.J. 1996. "Microbial and biochemical spoilage of foods: An overview". *International Journal of Food Microbiology*. Vol. 33. p. 1-18.

Hultin, H.O. 1994. Oxidation of lipids in seafoods. In: Seafoods chemistry, processing technology and quality (1st Edition), F. Shahidi and J.R. Botta (Eds.). Blackie Academic and Professional, London, UK. pp.49-74.

Husak, R.L., J.G. Sebranek, & K.A. Bregendahl. 2008. "Survey of commercially available broilers marketed as organic, free range, and conventional broilers for cooked meat yields, meat composition and relative value". *Poultry Science*. Vol. 87. p. 2367-2376.

Huss, H.H. 1995. Quality and quality changes in fresh fish. FAO Fisheries Technical Paper 348, FAO, Rome, Italy. http://www.fao.org/DOCREP/V7180E/V7180E00.HTM. Accessed: December, 2014.

Hwang, I. H. 2004. Application of gel-based proteome analysis techniques to studying post-mortem proteolysis in meat. *Asian-Australas Journal of Animal Science*. Vol. 17. p. 1296–1302.

Hwang, I. H., K. S. Park, S. H. Kim, S. Y. Cho, & K. Lee. 2005. Assessment of postmortem proteolysis by gel-based proteome analysis and its relationship to meat quality traits in pig longissimus. *Meat Science*. Vol. 69. p. 79–91.

Immonen, K., M. Ruussumen, & E. Puolanne. 2000. "Some Effects of Residual Glycogen Concentration on the Physical and Sensory Quality of Normal pH fall". *Meat Science*. Vol. 55. p. 33-38.

Ingr, I. 1989. Meat quality: Defining the term by modern standards. *Meat Science*. Vol. 69. p.1268

Insausti, K., M. J. Beriain, A. Purroy, P. Alberti, C. Gorraiz, & M. J. Alzueta. 2001. "Shelf life of beef from local Spanish cattle breeds stored under modified atmosphere". *Meat Science*. Vol. 57. p. 273-281.

Jama, N., V. Muchenje, M. Chimonyo, P.E. Strydom, K. Dzama & J.G. Raats. 2008. "Cooking loss components of beef from Nguni, Bonsmara and Angus steers". *African Journal of Agricultural Research*. Vol. 3. (6): p. 416-420.

Jassim, J.M., K.M. Riyad, H.A. Majid & G. Yanzhang. 2011. "Evaluation of physical and chemical characteristics of male and female ducks carcasses at different ages". *Pakistan Journal of Nutrition*. Vol.10. (2): p. 182-189.

Jaturasitha, S., A. Kayan & M. Wicke. 2008b. "Carcass and meat characteristics of male chickens between Thai indigenous compared with improved layer breeds and their crossbred". *Archives of Animal Breeding*. Vol. 51.(3): p. 283-294.

Jaturasitha, S., R. Khiaosaard, A. Pongpaew, A. Leowtharakul, S. Saitong, T. Apichatsarangkul & V. Leaungwunta. 2004. "Carcass and indirect meat quality of native and Kai Baan Thai chickens with different sex and slaughter weight". *Proceedings of the 42nd Annual Conference*. Kasetsart University, Bangkok, Thailand. pp. 116-126.

Jaturasitha, S., T. Srikanchai, M. Kreuzer & M. Wicke. 2008a. "Differences in carcass and meat characteristics between chicken indigenous to Northern Thailand (Blackboned and Thai native) and improved extensive breeds (Bresse and Rhode Island Red)". *Poultry Science*. Vol. 87. p. 160-169.

Jay, J. M., J. P. Vilai, & M. E. Hughes. 2003. "Profile and activity of the bacterial biota of ground beef held from freshness to spoilage at 5–7°C". *International Journal of Food Microbiology*. Vol. 81. p. 105–111.

Jay, J.M., M.J. Loessner & D.A. Golden. 2005. Modern Food Microbiology, 7th Edn., Springer Science and Business Media. NY. pp: 63-101.

Jayaraman, K., H. Munira, D. Chowdhury & M. Iranmanesh. 2013. "The preference and consumption of chicken lovers with race as a moderator – an empirical study in Malaysia". *International Food Research Journal*. Vol. 20. (1): p. 165-174.

Jeremiah, L. 2001. "Packaging alternatives to deliver fresh meats using short- or long-term distribution". *Food Research International*. Vol. 34. (9): p. 749–772.

Jouki, M., & N. Khazaei. 2011. "Effects of Storage Time on Some Characteristics of Packed Camel Meat in Low Temperature". *International Journal of Animal and Veterinary Advances*. Vol. 3. (6): p. 460-464.

Jung, Y., H. J. Jeon, S. Jung, J. H. Choe, J. H. Lee, K. N. Heo, B. S. Kang and C. Jo. 2011. "Comparison of quality traits of thigh meat from Korean native chickens and broilers". *Korean Journal Food Science Animal Resource*. Vol. 31. p. 684-692.

Kanner, J. 1994. "Oxidative processes in meat and meat products: Quality implications". *Meat Science*. Vol. 36. p. 169-189.

Kantor, L.S., K. Lipton, A. Manchester & V. Oliveira. 1997. "Estimating and addressing America's food losses". *Food Review*. Vol. 20. p. 3-11. http://www.ers.usda.gov/Publications/FoodReview/Jan1997/Jan97a.pdf. Accessed January, 2013.

Khan, A. W. 1975. "Effect of chemical treatments causing rapid onset of rigor on tenderness of poultry breast meat". *Journal of Agriculture and Food Chemistry*. Vol. 23. p. 449-451.

Khayat, A. & D. Schwall. 1983. "Lipid oxidation in seafood". *Food Technology*. Vol. 37. p. 130-140.

Kijowski, J., A. Niewiarowicz, & B. Kujawska-Biernat. 1982. "Biochemical and technological characteristics of hot chicken meat". *Journal of Food Technology*. Vol. 17. p. 553-560.

Komiyama, C. M., M. M. Mendes, S. E. Takahashi, & I. C. L. Almeida Paz. 2008. "Quality characteristics of broiler pale breast meat. Page 505 in Book of Abstracts. XXIII World's Poultry Congress 2008, Queensland, Australia. World's Poultry Science Association, Beekbergen, the Netherlands.

Konrád, S.Z. & K.K. Gaál. 2009. "Effect of genotype, sex and keeping technology on the chemical compounds of breast and thigh meat". *Scientific papers Animal Science and Biotechnology of Timisoara*. Vol. 42. (2): p. 7

Koohmaraie, M. 1994. "Muscle proteinases and meat aging". *Meat Science*. Vol. 36. p. 93–104.

Kotula, K. L., & Y. Wang. 1994. "Characterization of broilers meat quality factors as influenced by feed withdrawal time". *Journal of Applied Poultry Research*. Vol. 3. p.103–110.

Kuenzel, W.J. & A.L. Ingling. 1977. "A comparison of plate and brine stunners, A.C. and D.C. circuits for maximizing bleed-out in processed poultry". *Poultry Science*. Vol. 56. p. 2087-2089.

Kuenzel, W.J. & J.H. Walther. 1978. "Heart beat, blood pressure, respiration and brain waves of broilers as affected by electrical stunning and bleed-out". *Poultry Science*. Vol. 57. p. 655-659.

Kuwahara, K & K. Osako. 2003. "Effect of sodium Gluconate on Gel Formation of Japanese Common Squid Muscle". *Nippon Suisan Gakkaishi*. 69:637-42.

Labadie, J. 1999. "Consequences of packaging on bacterial growth: meat is an ecological niche". *Meat Science*. Vol. 52. p. 299–305.

Ladikos, D. & V. Lougovois. 1990. "Lipid oxidation in muscle foods: A review". *Food Chemistry*. Vol. 35. p.295-314.

Laemmli, U.K. 1970. "Cleavage of structural proteins during the assembly of the head of bacteriophage T4. *Nature: International Weekly Journal of Science*. Vol. 227. p. 680-685.

Lametsch, R., A. Karlsson, K. Rosenvold, H.J. Andersen, P. Roepstorff & E. Bendixen E. 2003. "Postmortem changes of porcine muscle related to tenderness". *Journal of Agricultural and Food Chemistry*. Vol. 51. p. 6992-6997.

Lametsch, R., E. Bendixen. 2001. Proteome analysis applied to meat science: Characterizing post mortem changes in porcine muscle. *Journal of Agricultural and Food Chemistry*. Vol. 49. p. 4531-4537.

Lametsch, R., P. Roepstorff & Bendixen E. 2002. "Identification of protein degradation during post-mortem storage of pig meat". *Journal of Agricultural and Food Chemistry*. Vol. 52. p. 5508-5512.

Larzul, C., P. Le Roy, J. Gogué, A. Talmant, B. Jacquet, L. Lefaucheur, P. Ecolan, P. Sellier & G. Monin. 1999. "Selection for reduced muscle glycolytic potential in Large White pigs: Correlated responses in meat quality and muscle compositional traits". *Genetics Selection and Evolution*. Vol. 31. p. 61-76.

Latter-Dubois. 2000. *Farmers Chickens: Nutritional Qualities and Their Sensory Perception and the Consumer*. (Master Thesis). Laval University, Quebec, Canada. p. 117

Lawrie, R. A. 1966, Meat science. Pergamon press . New York. Lawrie, R. A. 1977. Meat Current developments and future status. Meat Science. 1 : 1. Lawrie , R . A. 1979 . Meat Science. Pergamon Press. New York.

Lawrie, R. A. 1998. Lawrie's Meat Science. 6th ed. Woodhead Publishing Ltd., Abington, England.

Lawrie, R.A. and Ledward, D.A. 2006. Lawrie's meat science. Sixth edition, Woodhead publishing limited, 5, 96-98. England: Cambridge.

Le Bihan-Duval, E., N. Millet & H. Rémignon. 1999. "Broiler meat quality: effect of selection for increased carcass quality and estimates of genetic parameters". *Poultry Science*. Vol. 78. p. 822-826.

Le Bihan-Duval, E. 2004. "Genetic variability within and between breeds of poultry technological meat quality". *World's Poultry Science Journal*. Vol. 60. p. 331-340.

Le Bihan-Duval, E., C. Berri, E. Baéza, N. Millet & C. Beaumont. 2001. "Estimation of the genetic parameters of meat characteristics and of their genetic correlations with growth and body composition in an experimental broilers line". *Poultry Science*. Vol. 80. p. 839–843.

Le Bihan-Duval, E., M. Debut, C.M. Berri, N. Sellier, V. Santé-Lhoutellier, Y. Jégo & C. Beaumont. 2008. "Chicken meat quality: genetic variability and relationship with growth and muscle characteristics". *BMC Genetics*. Vol. 9. (53): p. 6.

Lengerken Von, G., S. Maak, & M. Wicke. 2002. "Muscle metabolism and meat quality of pigs and poultry". *Veterinarija Ir Zootechnika*. Vol. 20. p. 82-86.

LeRoy, P., J.M. Elsen, J.C. Caritez, A. Talmant, H. Juin, & P. Sellier. 2000. "Comparison between the three porcine RN genotypes for growth, carcass composition and meat quality traits". *Genetics Selection Evolution*. Vol. 32. p.165–186.

Lesiów, T., M. Oziemblowski & S. Szkudlarek. 2007. "Incidence of PSE and DFD in chicken broilers breast muscles 24h p.m". *In Proceedings XVIII European symposium on the quality of poultry meat and XII European symposium on the quality of eggs and egg products*. Prague, Czech Republic. pp. 265-266.

Levinger, I.M., 1976. Physiological and general medical aspects of Shechita. In: Munk, M.L. and Munk, E. (Eds.). Jerusalem Gur Aryeh Publications 147- 149.

Levinger, I.M.,1995. Shechita in the Light of the Year 2000. Maskil, L. David (Publ).

Linares, M.B., M.I. Berruga, R. Bornezv & H. Vergara. 2007. "Lipid oxidation in lamb meat: Effect of the weight, handling previous slaughter and modified atmospheres". *Meat Science*. Vol. 76. p. 715-720.

Liu, Q., M.C. Lanari & D.M. Schaefer. 1995. "A review of dietary vitamin E supplementation for improvement of beef quality". *Journal of Animal Science*. Vol. 73. p. 3131-3140.

Liu, X. D., D. D. Jayasena, Y. Jung, S. Jung, B. S. Kang, K. N. Heo, J. H. Lee and C. Jo. 2012. "Differential proteome analysis of breast and thigh muscles between Korean native chickens and commercial broilers". *Asian Australasia Journal of Animal Science*. Vol. 25. p. 895-902.

Lonergan, S.M., N. Deeb, C.A. Fedlet, S.J. Lamont. 2003. "Breast meat quality and composition in unique chicken populations". *Poultry Science*. Vol. 82. p. 1990–1994.

López, K.P., M.W. Schilling & A. Corzo. 2011. "Broiler genetic strain and sex effects on meat characteristics". *Poultry Science*. Vol. 90. p. 1105–1111.

Love, J.D. & A.M. Pearson. 1971. "Lipid oxidation in meat and meat products-A review". *Journal of American Oil Chemists' Society*. Vol. 48. p. 547-549.

Luciano, G., F.J. Monahan, V. Vasta, P. Pennisi, M. Bella, & A. Priolo. 2009. "Lipid and colour stability of meat from lambs fed fresh herbage or concentrate". *Meat Science*. Vol. 82. p. 193–199.

Lyon, C. E. and R. J. Buhr. 1999. Biochemical basis of meat texture. In Poultry Meat Science. (eds R. I. Richardson and G. C. Mead). CABI Publishing. NY. USA.

Masniyom, P., S. Benjakul, and W. Visessanguan. 2004. "ATPase activity, surface hydrophobicity, sulfhydryl content and protein degradation in refrigerated sea bass muscle in modified atmosphere packaging". *Journal of Food Biochemistry*. Vol. 28. p. 43-60.

Masri, B.A. Al-Hafiz 1989. Animals in Islam. Great Britain: Athene Trust.

McCurdy, R., S. Barbut & M. Quinton. 1996. "Seasonal effects on PSE in young turkey breast meat". *Food Research International*. Vol. 29. p. 363-366.

McDonald, P., R.A. Edwards & J. F.D. Greenhalgh. (1988). Animal Nutrition, 4th ed. John Wiley and Sons Inc., New York. Pp: 455 – 484.

McKee, S.R., & A.R. Sams. 1998. "Rigor mortis development at elevated temperatures induces pale exudative turkey meat characteristics". *Poultry Science*. Vol. 77. p. 169-174.

McKee, S. R., and A. R. Sams. 1997. 'The effect of seasonal heat stress on rigor development and the incidence of pale, soft and exudative turkey meat". *Poultry Science*. Vol. 76. p. 1616-1620.

Mellor, D. B., P. A. Stringer & G. J. Mountney. 1958. "The influence of glycogen on the tenderness of broilers meat". *Poultry Science*. Vol. p. 1023-1033.

Mikulski, D., J. Celej, J. Jankowski, T. Majewska & M. Mikulska. 2011. "Growth performance, carcass traits and meat quality of slower-growing and fast-growing chickens raised with and without outdoor access". *Asian-Australian Journal of Animal Science*. Vol. 24. (10): p. 1407 – 1416.

Miller, R.K. 2002. Factors affecting the quality of raw meat, In: Meat processing Improving quality. Joseph, K., K. John and D. Ledward (Eds.), CRC Press, FL, USA, pp: 26-63.

Min, B., K.C. Nam, J. Cordray, & D.U. Ahn. 2008. "Endogenous factors affecting oxidative stability of beef loin, pork loin, and chicken breast and thigh meats". Journal of Food Science. Vol. 73. (6): p. C439-46.

Mollette, C., H. Rèmignon & R. Babilè. 2003. "Early post-mortem pH and turkey breast meat quality". *Proceeding of the XVI European Symposium on the Quality of Poultry Meat, Saint-Brieuc* France. September 23-23. pp. 48-53.

Molette, C., H. Remignon & R. Babile. 2005. "Modification of glycolyzing enzymes lowers meat quality of turkey". *Poultry Science*. Vol. 84. p. 119-127.

Monin, G., & P. Sellier. 1985. "Pork of low technological quality with a normal rate of muscle pH fall in the immediate post-mortem period: The case of the Hampshire breed". *Meat Science*. Vol. 13. p. 49–63.

Monin, G., C. Larzul, P. Le Roy, J. Culioli, J. Mourot, S. Rousset-Akrim, A. Talmant, C. Touraille & P. Sellier. 1999. "Effects of the halothane genotype and slaughter weight on texture of pork". *Journal of Animal Science.* Vol. 77. p. 408-415.

Morzel, M., C. Chambon, M. Hamelin, V. Sante-Lhoutellier, T. Sayd, & G. Monin. 2004. Proteome changes during pork meat ageing following use of two different pre-slaughter handling procedures. *Meat Science*. Vol. 67. p. 689–696.

Malaysian Standard MS 1500:2009 Halal Food - Production, Preparation, Handling and Storage - General Guidelines (Second Revision)

Mucciolo, P. Carnes. 1985. "Content of Meat: A review". *Journal of Science, Food and Agriculture*. p. 28-457.

Nairn, M. E. 1984. "Carcass downgrading in broiler chickens". *British Poultry Science*. Vol. 25. p. 441-446.

Nakyinsige, K., Fatimah, A.B., Aghwan, Z.A., Zulkifli, I., Goh, Y.M. and Sazili, A.Q. 2014. "Bleeding Efficiency and Meat Oxidative Stability and Microbiological Quality of New Zealand White rabbits subjected to Halal slaughter without stunning and Gas stun-killing". *Asian Australasia Journal of Animal Science* Vol. 27. p. 406-413

Nakyinsige, K., Y. B. Che Man, & A. Q. Sazili. 2012. "Halal authenticity issues in meat and meat products". *Meat Science*. Vol. 91. p. 207-214.

Nam, K.C., S.J. Hur, H. Ismail & D.U. Ahn. 2002. "Lipid oxidation, volatiles, and colour changes in irradiated raw turkey breast during frozen storage". *Journal of Food Science*. Vol. 67. p. 2061-2066.

Nattress, F. M., C. K. Yost & L. P. Baker. 2001. "Evaluation of the ability of lysozyme and nisin to control meat spoilage bacteria". *International Journal of Food Microbiology*. Vol. 70. p.111-119.

Ngoka, D. A., G. W. Froning, S. R. Lowry & A. S. Babji. 1982. "Effects of sex, age, pre-slaughter factors, and holding conditions on the quality characteristics and chemical composition of turkey breast muscles". *Poultry Science*. Vol. 61. p. 1996-2003.

Nicole, C. J., & G. B Scott. 1990. "Pre-slaughter handling and transport of broiler chickens". *Applied Animal Behaviour Science*. Vol. 28. p. 57-73.

Northcutt, J. & R.J. Burh. 2001. "Pre-slaughter factors affecting poultry meat quality". Chapter 2. In: Alan R. Sams ed., Poultry meat processing. p. 345.

Northcutt, J.K., R.J. Buhr, L.L. Young, C.E. Lyon, & G.O. Ware. 2001. "Influence of age and post chill carcass aging duration on chicken breast fillet quality". *Poultry Science*. Vol. 80. p. 808–812.

Northcutt, J.K. 2009. "Factors affecting poultry meat quality". University of Georgia Cooperative Extension Service, Bulletin 1157.

Nortjé, G.L. & B.G. Shaw. 1989. "The effect of aging treatment on the microbiology and storage characteristics of beef in modified atmosphere packs containing 25% CO_2 plus 75% O_2. *Meat Science*. Vol. 25. p. 43-58.

Nychas, G. E., P. N. Skandamis, C. C. Tassou & K. P. Koutsoumanis. 2008. "Meat spoilage during distribution". *Meat Science*. Vol. 78. p.77-89.

Nychas, G.-J. E., E. H. Drosinos, & R. G. Board. 1998. "Chemical changes in stored meat". In A. Davies and R. Board (ed.), The microbiology of meat and poultry. Blackie Academic & Professional, London, England. p. 289.

O'Halloran, G.R., D.J. Troy, D.J. Buckley & W.J. Reville. 1997. "The role of endogenous proteases in the tenderisation of fast glycolysing muscle". *Meat Science*. Vol. 47. p. 187-210.

Oellingrath, I. M., A. Iversen, & G. Skrede. 1990. "Quantitative determination of myoglobin and haemoglobin in beef by high-performance liquid chromatography". *Meat Science*. Vol. 28. p.313-320.

Offer, G., & P. Knight. 1988. "The structural basis of water-holding in meat". Pages 63-243 in Developments in Meat Science, Vol. 4 R. Lawrie, ed. Elsvier, London.

Oluwatosin, O., E. Olawoyin, A. Agiang, C. De Neji & E. Iso. 2007. "Nutritional evaluation of the thigh and breast muscles of four cockerel strains". *African Journal of Animal and Biomedical Sciences*. Vol. 2. (2): p. 26-31.

Oluyemi, J.A. & F.A. Roberts. 2000. Poultry production in warm wet climates. 2nd edition, Ibadan, Spectrum book limited 2 (2), 57-62.

Organisation of Islamic Conference Standards. 2009. "General Guidelines on Halal Food". *Technical Report.* October. p. 5-8.

Owens, C. M., E. M. Hirchler, S. R. McKee, R. Martinez-Dawson & A. R. Sams. 2000. "The characterization and incidence of pale, soft, exudative turkey meat in commercial plant". *Poultry Science*. Vol. 79. p. 553-558.

Pearson, A.M., J.I. Gray, A.M. Wolzak & N.A. Horenstein. 1983. "Safety implications of oxidized lipids in muscle foods". *Food Technology*. Vol. 37. p. 121-129.

Penny, I.F., & R. Ferguson-Pryce. 1979. "Measurement of autolysis in beef muscle homogenates". *Meat Science*. Vol. 3. p. 121-134.

Petracci, M. & D.L. Fletcher. 2002. "Broiler skin and meat colour changes during storage". *Poultry Science*. Vol. 81. p. 1589–1597.

Petracci, M., M. Betti, M. Bianchi & C. Cavani. 2004. "Colour variation and characterization of broilers breast meat during processing in Italy". *Poultry Science.* Vol. 83. p. 2086-2092.

Pietrzak, M., M. L. Greaser, & A. A. Sosnicki. 1997. "Effects of rapid rigor mortis processes on protein functionality in Pectoralis major muscle of domestic turkeys". *Journal of Animal Science.* Vol. 75. p. 2106-2116.

Piske, D. 1982. "Slaughter blood utilization for human consumption: A Review". "Newsletter of the Institute of Alimententos Technology, Campinas Vol. 19(3) p. 253-308.

Purchas, R.W., D.C. Simcock, T.W. Knight, B.H.P. Wilkinson. 2003. "Variation in the form of iron in beef and lamb meat and losses of iron during cooking and storage". *International Journal of Food Science and Technology.* Vol. 38. p. 827-837.

Qiao, M., D. L. Fletcher, D. P. Smith & J. K. Northcutt. 2001. "The effect of broilers breast meat colour on pH, moisture, water-holding capacity, and emulsification capacity". *Poultry Science*. Vol. 80. p. 676-680.

Quentin, M., I. Douvarel, C. Berri, E. Le Bihan-Duval, E. Baeza, Y. Jego & M. Picard. 2003. "Growth, carcass composition and meat quality response to dietary concentrations in fast-, medium- and slow-growing commercial broilers". *Animal Research.* Vol. 52. p. 65-77.

Raharjo, S. & J.N. Sofos. 1993. "Methodology for measuring malonaldehyde as a product of lipid peroxidation in muscle tissues: A review". *Meat Science*. Vol. 35. p. 145-169.

Rahman, S.F. 1999. Post-harvest handling of foods of animal origin. In: Handbook of food preservation. Rahman. S.F. (ed). Marcel Dekker, NY, pp: 47-54.

Raj, A.B.M. & N.G. Gregory. 1990a. "Effect of rate of induction of carbon dioxide anaesthesia on the time of onset of unconsciousness and convulsions". *Research in Veterinary Science.* Vol. 49. p. 360-363.

Raj, A.B.M. & N.G. Gregory. 1990b. "Investigations into batch stunning/killing of chickens using carbon dioxide or argon-induced hypoxia". *Research in Veterinary Science.* Vol. 49. p. 364-366.

Raj, A.B.M. 2006 "Recent developments in stunning and slaughter of poultry". In World's Poultry Science Journal. Vol. 62. September.

Raj, A.B.M., G.R. Nute, S.B. Wotton & A. Baker. 1992. "Sensory evaluation of breast fillets from argon-stunned and electrically-stimulated broiler carcasses processed under commercial conditions.

Raj, A.B.M., L.J. Wilkins, R.I. Richardson, S.P. Johnson & S.B. Wotton. 1997. "Carcass and meat quality in broilers either killed with a gas mixture or stunned with an electric current under commercial conditions". *British Poultry Science.* (in press).

Raj, A.B.M., N.G. Gregory. 1991. "Efficiency of bleeding of broilers after gaseous or electrical stunning". *Veterinary Records.* Vol. 128. p. 127-128.

Raj, A.B.M., T.C. Grey, A.R. Audsley, & N.C. Gregory. 1990. "Effect of electrical and gaseous stunning on the carcass and meat quality of broilers". *British Poultry Science.* Vol. 31. p. 725-733.

Rathgeber, B. M., J. A. Boles, & P. J. Shand. 1999. "Rapid post-mortem pH decline and delayed chilling reduce quality of turkey breast meat". *Poultry Science.* Vol. 78. p. 477-484.

Richards, M. P. & H.O. Huntin. 2002. "Contributions of blood and blood components to lipid oxidation in fish muscle". *Journal of Agricultural and Food Chemistry.* Vol. 50. p. 555–564.

Richards, M. P., N.M. Nelson, H.G. Kristinsson, S.S.J. Mony, H.T. Petty & A.C.M. Oliveira. 2007. "Effects of fish heme protein structure and lipid substrate composition on haemoglobin-mediated lipid oxidation". *Journal of Agricultural and Food Chemistry.* Vol. 46. p. 4363-4371.

Rosen, S.D., 2004. "Physiological insights into Shechita". *The Veterinary Record.* Vol. 154. p. 759-765.

Russell, S.M., D.L. Fletcher & N.A. Cox. 1996. "Spoilage bacteria of fresh broiler chicken carcasses". *Poultry Science.* Vol. 75. p. 2041-2047.

Sabow, A.B., A.Q. Sazili, I. Zulkifli, Y.M. Goh, M.Z.A. Ab Kadir, N.R. Abdulla, K. Nakyinsige, U. Kaka, & K.D. Adeyemi. 2015. "A comparison of bleeding efficiency, microbiological quality and lipid oxidation in goats subjected to conscious halal slaughter and slaughter following minimal anesthesia". *Meat Science.* Vol. 104. p. 78-84.

Sams, A.R., & A.D. Mills. 1993. "The effect of feed withdrawal duration on the responsiveness of broiler pectoralis to *rigor mortis* acceleration". *Poultry Science*. Vol. 72. p. 1789-1796.

Sams, A. R. 1999. "Meat quality during processing". *Poultry Science* Vol. 78. p. 798-803.

Sandercock, D. A., R. R. Hunter, G. R. Nute, M. A. Mitchell & P. M. Hocking. 2001. "Acute heat stress-induced alterations in blood acid-base status and skeletal muscle membrane integrity in broiler chickens at two ages: implications for meat quality". *Poultry Science*. Vol. 80. p. 418-425.

Santos, A.L., N.K. Sakomura, E.R. Freitas, C.M.S. Fortes, & E.N.M. Carrilho. 2005. "Comparison of free range broiler chicken strains raised in confined or semi-confined systems". *Revista Brasileira de Ciência Avícola*. Vol. 7. (2): p. 85-92.

Sauveur, B. 1997. "Criteria and factors of the quality of red label chicken. INRA Productions Animales Vol. 10. p. 219–226.

Savenije, B., E. Lambooji, M.A. Gerritzen, K. Venema, & J. Korf. 2002. "Effects of feed deprivation and transport on preslaugter blood metabolites, early postmortem muscle metabolites, and meat quality". *Poultry Science*. Vol. 81. p. 699-708.

Scheepers, M. 1999. *Effect of breed on the quality of beef*. (Msc Thesis) Home Economics. University of Pretoria, South Africa.

Scheuermann, G.N., S.F. Bilgili, J.B. Hess, & D.R. Mulvaney. 2003. "Breast muscle development in commercial broiler chickens". *Poultry Science*. Vol. 82. p. 1648–1658.

Sellier, P., & G. Monin. 1994. "Genetics of pig meat quality: A review". *Journal of Muscle Foods*. Vol. 5. p. 187–219.

Sentence, C.B. 1991. Growth of bacteria and spoilage of meat. In: The production of chilled meat for export. Retrieved on March 2014, from http://www.meatupdate.csiro.au/data/Chilled_meat_for_export_02-91.pdf.

Shahidi, F. 1994. Assessment of lipid oxidation and off-flavor development in meat and meat products. In: Flavor of meat and meat products. Chapman and Hall, London, U.K, pp: 247-266.

Shawkat, A., K. Geun-Ho, & J. Seon Tea. 2008. "A review: influences of pre-slaughter stress on poultry meat quality". *Asian - Australasian Journal of Animal Sciences*. Vol. 21. (6): p. 912 – 916.

Shen, Q. W., & M. Du. 2005a. "Role of AMP-activated protein kinase in glycolysis of post-mortem muscle". *Journal of Science and Food Agriculture*. Vol. 85. p. 2401-2406.

Shen, Q. W., C. S. Jones, N. Kalchayanand, M. J. Zhu, & M. Du. 2005. "Effect of dietary α-lipoic acid on growth, body composition, muscle pH and AMP-

activated protein kinase phosphorylation in mice". *Journal of Animal Science*. Vol. 83. p. 2611-2617.

Signorini, M., J.A. Salazar, E. Ponce-Alquicira, & I. Guerrero-Legarreta. 2007. "Effect of lactic acid and lactic acid bacteria treatment on myofibrillar protein degradation and dynamic rheology of beef". *Journal of texture studies*. Vol. 38. p. 373-392.

Simitzis, P.E. & S.G. Deligeorgis. 2010. Lipid oxidation of meat and use of essential oils as antioxidants in meat products. http://www.scitopics.com/Lipid_Oxidation_of_Meat_and_Use_of_Essential_Oils_as_Antioxidants_in_Meat_Products.html. Accessed: December, 2014.

Smith, D. P., & J. K. Northcutt. 2009. "PSE syndrome in poultry symposium. Pale poultry muscle syndrome". *Poultry Science*. Vol. 88. p. 1493-1496.

Smith, D. P., C.E. Lyon, & B. G. Lyon. 2002. "The effect of age, dietary carbohydrate source, and feed withdrawal on broilers breast fillet colour". *Poultry Science*. Vol. 81. p. 584-1588.

Soares, A. L., T. N. Santos, D. Marchi, A. Oba, E. I. Ida & M. Shimokomaki. 2007. "Is there a PtSS-poultry stress syndrome equivalent to pork stress syndrome-PSS leading to broilers PSE meat"? Dept. of Food Science and Technoloty, Agricultural Sciences Centre, Londrina State University, Londrina, PR, Brazil.

Sparrey, J.M. & P.J. Kettlewell. 1994. "Shackling of poultry: Is it a welfare problem"? *World's Poultry Science Journal*. Vol. 50. p. 167-176.

Srihari, T., W. Wiehrer, D. Pette & B. G. Harris. 1981. "Electrophoretic analyses of myofibrillar proteins from the body wall muscle of Ascarissuum". *Molecular Biochemistry and Parasitology*. Vol. 3. p. 71-82.

Stanišić, N., M. Petričević, D. Živković, M. M. Petrović, D. Ostojić- Andrić, S. Aleksić, and S. Stajić. 2012. "Changes of Physical-Chemical Properties of Beef during 14 days of Chilling". *Biotechnology in Animal Husbandry*. Vol. 28. (1): p. 77-85.

Stetzer, A. J., & F. K. McKeith. 2003. "Benchmarking value in the pork supply chain: Quantitative strategies and opportunities to improve quality". Savoy, IL: American Meat Science Association.

Suchý, P., P. Jelínek, E. Straková, & J. Hucl. 2002. "Chemical composition of muscles of hybrid broiler chickens during prolonged feeding". *Czech Journal of Animal Science*. Vol. 47. (12): p. 511–518.

Sunday, O.P., M.O.I. Olusegun, O.A. Brilliant, O.E. Raphael & O.F. Adeboye. 2010. "Genotype and Sex Effect on Gastrointestinal Nutrient Content, Microflora and Carcass Traits in Nigerian Native Chickens". *International Journal of Poultry Science*. Vol. 9. (8): p. 731-737.

Swatland, H. J. 1994. "The conversion of muscle to meat. In Structure and Development of Meat Animals and Poultry". Technomic Publishing Co., Inc. Lancaster, PA, USA.

Tappel, A. L. 1995. "Unsaturated lipid oxidation catalyzed by haematin compounds". *Journal of Biological Chemistry*. Vol. 217. p. 721-733.

Tauro, P., K.K. Kapoor & K.S. Yadav. 1986. An Introduction to Microbiology, 1st Edn., New Age International Publisher. New Delhi, India. pp: 364. ISBN: 085-226-878-5.

Thanonkaew, A., S. Benjakul, W. Visessanguan. 2006. "Chemical composition and thermal property of cuttlefish (Sepia pharaonis) muscle". *Journal of Food Composition and Analysis*. Vol. 19. p. 127–133.

The Poultry Site 2006. Malaysia Poultry and Products Annual 2006. Downloaded from http://www.thepoultrysite.com/articles/661/malaysia-poultry-and-products-annual-2006 . Accessed on October, 2013.

The Poultry Site 2006. Standard for Islamic Halal Slaughter Regulations for Meat and Poutry. Downloaded from http://thepoultrysite.com/articles/186/gcc-standard-for-Islamic-halal-slaughter-regulations-for-meat-and-poultry. Accessed on November, 2015.

Toldra, F. & M. Flores. 2000. "The use of muscle enzymes as predictors of pork meat quality". *Food Chemistry*. Vol. 69. p. 387-395.

Toldra, F. 2006. "The role of muscle enzymes in dry-cured meat products with different drying conditions. *Trends in Food Science and Technology*. Vol. 17. p. 164-168.

Van Laack, R. L., C. H. Liu, M. O. Smith & H. D. Loveday. 2000. "Characteristics of pale, soft, exudative broilers breast meat". *Poultry Science*. Vol. 79. p. 1057-1061.

Wang, H., M.D. Pato & P.J. Shand. 2005. "Biochemical properties of natural actomyosin extracted from normal and pale, soft, and exudative pork loin after frozen storage". *Journal of Food Science*. Vol. 70. p. C313-C320.

Warriss, P. D., T. G. Knowles, S. N. Brown, J. E. Edwards, P. J. Kettlewell, M. A. Mitchell, C. A. Baxter. 1999. "Effects of lairage time on body temperature and glycogen reserves of broiler chickens held in transport modules". *Veterinary Record*. Vol. 145. p. 213-222.

Warriss, P.D. 1977. "The residual blood content of meat. A review". *Journal of Science Food Agriculture*. Vol. 28. p. 457-462.

Wattanachant, C., A. Songsang, S. Wattanasit, P. Adulyatham & S. Wattanachant. 2004. "Carcass quality, chemical composition, physical properties and textural characteristics of meat from naked-neck chicken and common Thai indigenous chicken". Research report, Prince of Songkla University. Songkhla, Thailand. p. 158.

Wattanachant, S., & C. Wattanachant. 2007. "Chemical composition, properties and microstructure of Thai indigenous chicken muscles as influenced by age and rearing systems". Research report, Prince of Songkla University. Songkhla, Thailand. p. 77.

Webster, A. J. F., A. Tuddenham, C. A. Saville & G. B. Scott. 1993. Thermal stress on chickens in transit. *British Poultry Science*. Vol. 34. p. 267- 276.

Wilkins, L. J., S. N. Brown, A. J. Phillips & P. D. Warriss. 2000. "Variation in the colour of broilers breast fillets in the UK". *British Poultry Science.* Vol. 41. p.308–312.

Woelfel, R. L., C. M. Owens, E. M. Hirschler, R. Martinez-Dawson & A. R. Sams. 2002. "The characterization and incidence of pale, soft, and exudative broilers meat in a commercial processing plant". *Poultry Science.* Vol. 81. p. 579–584.

Wołoszyn, J., J. Książkiewicz, T. Skrabka-Błotnicka, G. Haraf, J. Biernat, & T. Kisiel. 2006. "Comparison of amino acid and fatty acid composition of duck breast muscles from five flocks". Arch Tierz. Vol. 49. p. 194-204.

Wynveen, E. J., B. C. Bowker, A. L. Grant, B. P. Demos, & D. E. Gerrard. 1999. "Effects of muscle pH and chilling on development of PSE-like turkey breast meat". *British Poultry Science*. Vol.40. p. 253-256.

Yang, C.C. & T.C. Chen. 1993. "Effects of refrigerated storage, pH adjustment, and marinade on colour of raw and microwave cooked chicken meat". *Poultry Science.* Vol. 72. p. 355-362.

Youssao, A.K.I., M. Senou, M. Dahouda, T.M. Kpodekon, J. Djenontin, N.D. Idrissou, A.G. Bonou, P.U. Tougan, H.M. Assogba, E. Bankole, X. Rognon & M. Tixier-Boichard. 2009. "Genetic improvement of local chickens by crossing with the Label Rouge (T55XSA51): growth performances and heterosis effects". *International Journal of Poultry Science.* Vol. 8. (6): p. 536-544.

Zaman, R., H. Mohd. Nassir & N.B. Abdurrazq. 2012. "Effect of different methods of slaughtering on protein expression in chicken meat". *IIUM Engineering Journal.* Vol. 13. p. 27-34.

Zanusso, J., H. Rémignon, A. Auvergne, C. Molette, H. Manse, & R. Babilé. 2001. "Zootechnical characteristics and qualities of Meat Chicken: Comparisons between males, females and Chapons". Fourth Days of Avian Research, Nantes, France. p. 269-272.

Zayas, J. F. 1997. "Functionality of Proteins in Food". Springer-Verlag., Berlin.

Zhang, L. & S. Barbut. 2005. "Rheological characteristics of fresh and frozen PSE, normal and DFD chicken breast meat". *British Poultry Science*. Vol. 46. p. 687-693.

Zhuang, H. & E. M. Savage. 2010. "Comparisons of sensory descriptive flavour and texture profiles of cooked broiler breast fillets categorized by raw meat colour lightness values". *Poultry Science.* Vol. 89. p. 1049-1055.

APPENDIX 1

Reference elements standard preparation

Manganese Standard Preparation

The reference element standard of manganese was prepared using Merck stock solution standard (Merck, Darmstadt, Germany) containing 1000 mg/L of the element. The concentration of calibration standard used for manganese determination in the meat samples ranged from 0.4 - 2.0 ppm. Deionized water was used as blank.

Calculations

Preparation of 0.4, 1.2 and 2.0 ppm of manganese standard respectively

$$\text{mL of stock solution required} = \frac{(\text{conc. of dilute standard}) \times (\text{vol. of dilute standard})}{(\text{conc. of stock solution})}$$

Where,

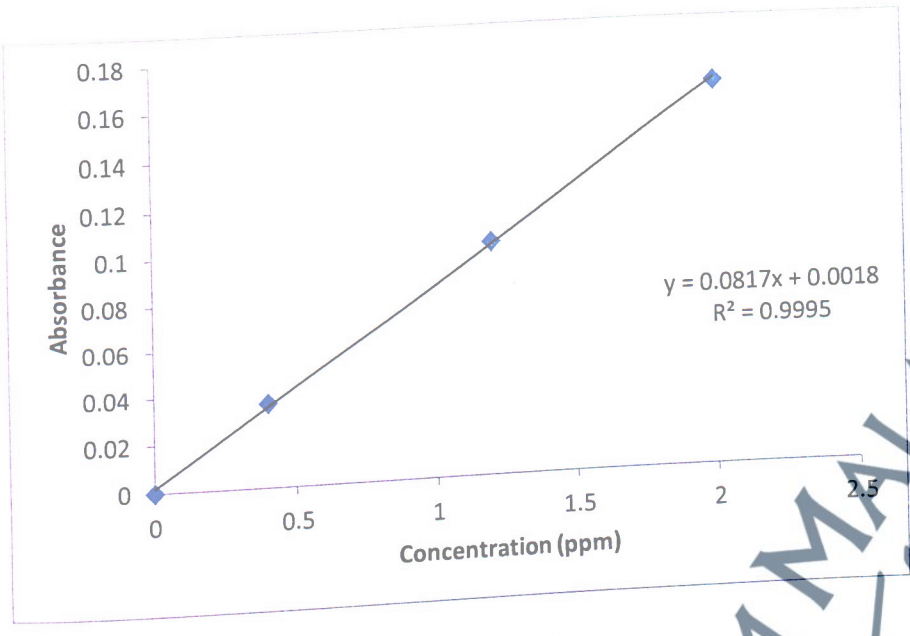
Concentration of dilute standard = 0.4, 1.2 and 2.0 ppm

Volume of dilute standard = 100 ml

Concentration of stock solution = 1000 ppm

mL of stock solution required to dilute 0.4, 1.2 and 2 ppm are 40, 120 and 200 µl respectively.

Calibration Standard	Concentration of Standard (ppm)	Absorbance
1	0.000	0.000
2	0.400	0.036
3	1.200	0.101
4	2.000	0.164



Standard curve of Manganese (0.4-2.0 ppm)

Calcium Standard Preparation

The reference element standard of calcium was prepared using Merck stock solution standard (Merck, Darmstadt, Germany) containing 1000 mg/L of the element. The concentration of calibration standard used for calcium determination in the meat samples ranged from 1 - 5 ppm. Deionized water was used as blank.

Calculations

Preparation of 1, 3 and 5 ppm of calcium standard respectively

$$\text{mL of stock solution required} = \frac{\text{(conc. of dilute standard) x (vol. of dilute standard)}}{\text{(conc. of stock solution)}}$$

Where,

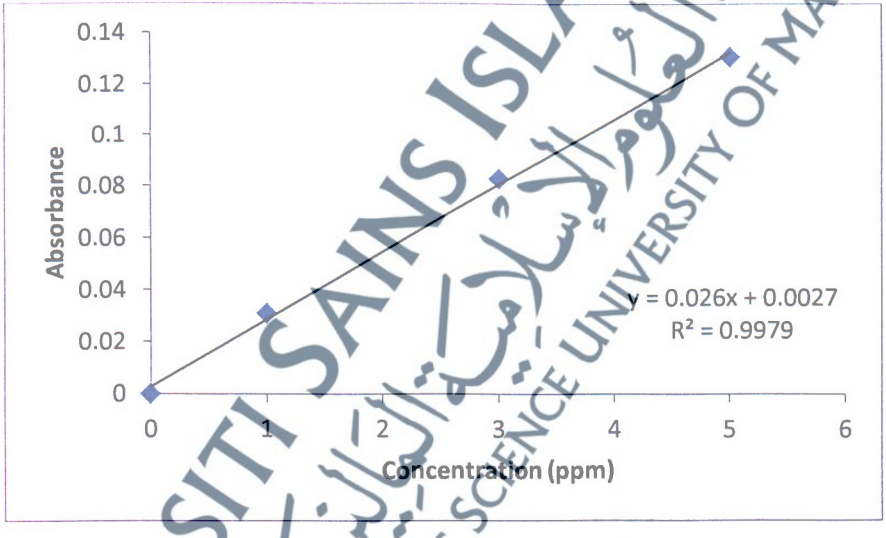
Concentration of dilute standard = 1, 3 and 5 ppm

Volume of dilute standard = 100 ml

Concentration of stock solution = 1000 ppm

mL of stock solution required to dilute 1, 3 and 5 ppm are 100, 300 and 500 µl respectively.

Calibration Standard	Concentration of Standard (ppm)	Absorbance
1	0.000	0.000
2	1.000	0.031
3	3.000	0.083
4	5.000	0.131



Standard curve of Calcium (1-5 ppm)

Copper Standard Preparation

The reference element standard of copper was prepared using Merck stock solution standard (Merck, Darmstadt, Germany) containing 1000 mg/L of the element. The

concentration of calibration standard used for copper determination in the meat samples ranged from 1 - 5 ppm. Deionized water was used as blank.

Calculations

Preparation of 1, 3 and 5 ppm of copper standard respectively

$$\text{mL of stock solution required} = \frac{(\text{conc. of dilute standard}) \times (\text{vol. of dilute standard})}{(\text{conc. of stock solution})}$$

Where,

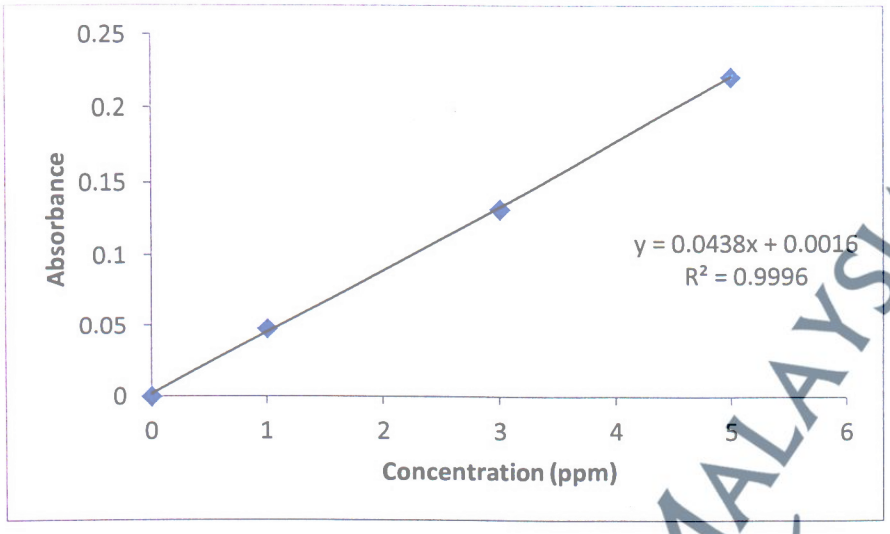
Concentration of dilute standard = 1, 3 and 5 ppm

Volume of dilute standard = 100 ml

Concentration of stock solution = 1000 ppm

mL of stock solution required to dilute 1, 3 and 5 ppm are 100, 300 and 500 µl respectively.

Calibration Standard	Concentration of Standard (ppm)	Absorbance
1	0.000	0.000
2	1.000	0.048
3	3.000	0.013
4	5.000	0.221



Standard curve of copper (1-5 ppm)

Iron Standard Preparation

The reference element standard of iron was prepared using Merck stock solution standard (Merck, Darmstadt, Germany) containing 1000 mg/L of the element. The concentration of calibration standard used for iron determination in the meat samples ranged from 2 - 6 ppm. Deionized water was used as blank.

Calculations

Preparation of 2, 4 and 6 ppm of iron standard respectively

$$\text{mL of stock solution required} = \frac{\text{(conc. of dilute standard) x (vol. of dilute standard)}}{\text{(conc. of stock solution)}}$$

Where,

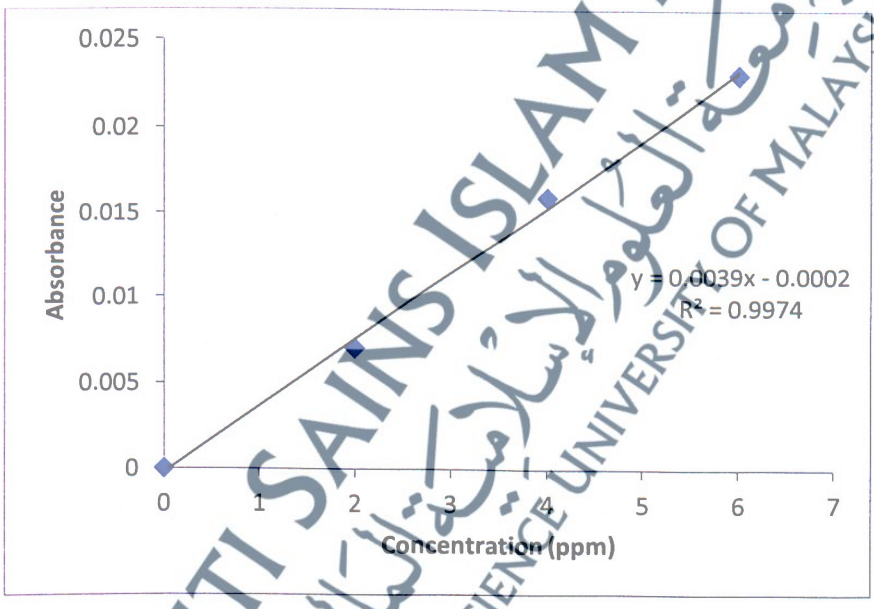
Concentration of dilute standard = 2, 4 and 6 ppm

Volume of dilute standard = 100 ml

Concentration of stock solution = 1000 ppm

mL of stock solution required to dilute 2, 4 and 6 ppm are 200, 400 and 600 µl respectively.

Calibration Standard	Concentration of Standard (ppm)	Absorbance
1	0.000	0.000
2	2.000	0.007
3	4.000	0.016
4	6.000	0.023



Standard curve of Iron (2-6 ppm)

Magnesium Standard Preparation

The reference element standard of magnesium was prepared using Merck stock solution standard (Merck, Darmstadt, Germany) containing 1000 mg/L of the element. The concentration of calibration standard used for magnesium determination in the meat samples ranged from 0.1 - 0.5 ppm. Deionized water was used as blank.

Calculations

Preparation of 0.1, 0.3 and 0.5 ppm of magnesium standard respectively

$$\text{mL of stock solution required} = \frac{\text{(conc. of dilute standard) x (vol. of dilute standard)}}{\text{(conc. of stock solution)}}$$

Where,

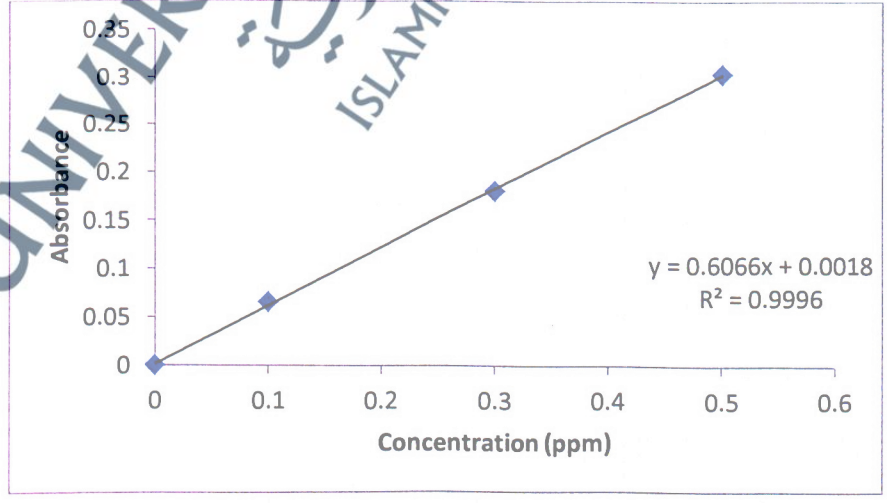
Concentration of dilute standard = 0.1, 0.3 and 0.5 ppm

Volume of dilute standard = 100 ml

Concentration of stock solution = 1000 ppm

mL of stock solution required to dilute 0.1, 0.3 and 0.5 ppm are 10, 30 and 50 µl respectively.

Calibration Standard	Concentration of Standard (ppm)	Absorbance
1	0.000	0.000
2	0.100	0.066
3	0.300	0.181
4	0.500	0.306



Standard curve of Magnesium (0.1-0.5 ppm)

Zinc Standard Preparation

The reference element standard of zinc was prepared using Merck stock solution standard (Merck, Darmstadt, Germany) containing 1000 mg/L of the element. The concentration of calibration standard used for zinc determination in the meat samples ranged from 0.3 - 1.0 ppm. Deionized water was used as blank.

Calculations

Preparation of 0.3, 0.6 and 1.0 ppm of zinc standard respectively

$$\text{mL of stock solution required} = \frac{(\text{conc. of dilute standard}) \times (\text{vol. of dilute standard})}{(\text{conc. of stock solution})}$$

Where,

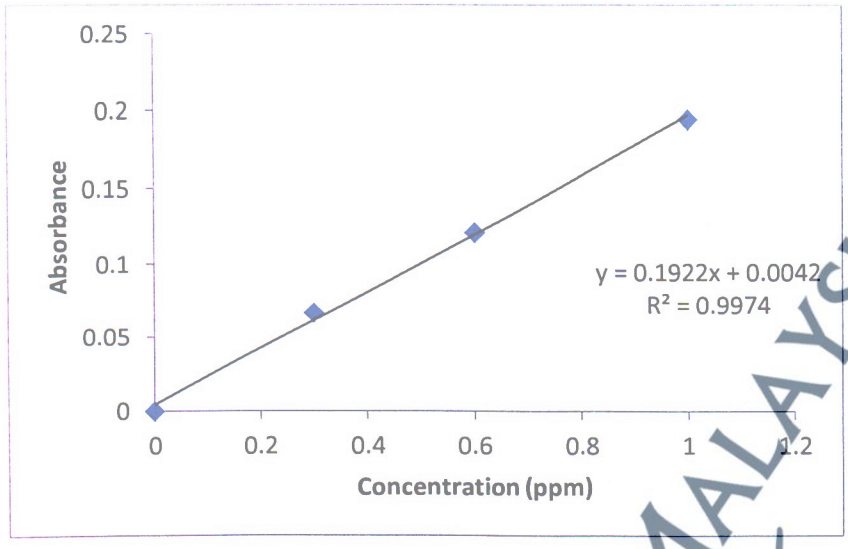
Concentration of dilute standard = 0.3, 0.6 and 1.0 ppm

Volume of dilute standard = 100 ml

Concentration of stock solution = 1000 ppm

mL of stock solution required to dilute 0.3, 0.6 and 1.0 ppm are 30, 60 and 100 µl respectively.

Calibration Standard	Concentration of Standard (ppm)	Absorbance
1	0.000	0.000
2	0.300	0.067
3	0.600	0.121
4	1.000	0.194



Standard curve of Zinc (0.3-1.0 ppm)

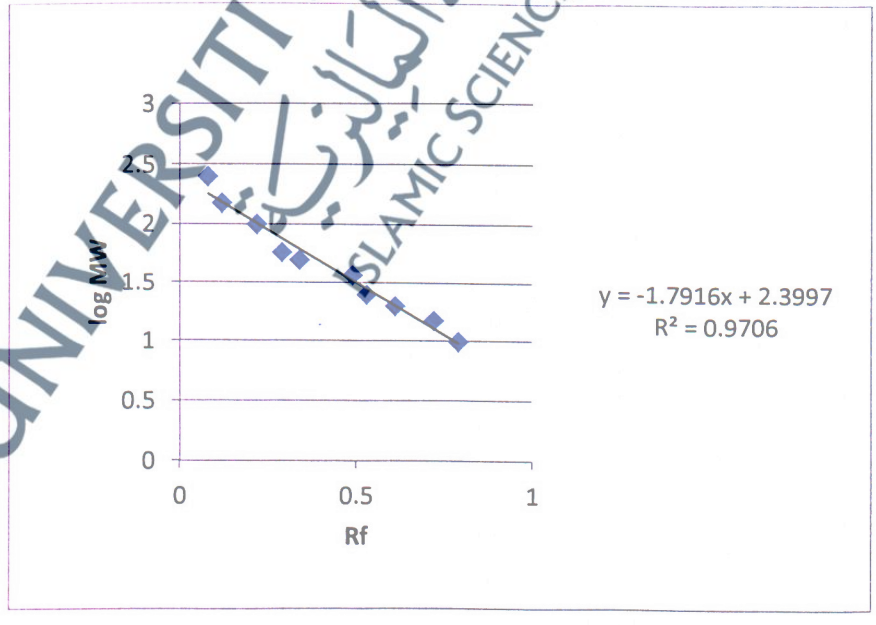
APPENDIX 2

Molecular Weight Determination of Bands

Migration distance of dye front: 9 cm

R_f = migration distance of protein/ migration distance of the dye front

Band Numbers	Mw of Bands	Log Mw	Migration distance of Unknown Protein(cm)	R_f
1	10	1.00	7.1	0.79
2	15	1.18	6.5	0.72
3	20	1.30	5.5	0.61
4	25	1.4	4.8	0.53
5	37	1.57	4.4	0.49
6	50	1.70	3.1	0.34
7	75	1.76	2.6	0.29
8	100	2.0	2.0	0.22
9	150	2.18	1.1	0.12
10	250	2.40	0.72	0.08



Molecular Weight Determination of Protein bands of HM and NHM during refrigerated storage

Band Number	Migration distance of unknown protein	R_f
1	1.2	0.13
2	2.4	0.27
3	2.7	0.30
4	2.9	0.32
5	3.1	0.34
6	3.3	0.42
7	4.7	0.52
8	7.6	0.84

From Figure 13:

$y = -1.7916x + 2.3997$

$x = R_f$ of unknown protein band

When $R_f = 0.13$,

$y = \log MW$

$MW = 10^y = 10^{-1.7916(0.13) + 2.3997}$

MW = **146.8 KDa**

When $R_f = 0.27$,

$y = \log MW$

$MW = 10^y = 10^{-1.7916(0.27) + 2.3997}$

MW = **83.4 KDa**

When **$R_f = 0.30$,**

$y = \log MW$

$MW = 10^y = 10^{-1.7916(0.30) + 2.3997}$

MW = **72.8 KDa**

When **$R_f = 0.32$,**

$y = \log MW$

$MW = 10^y = 10^{-1.7916(0.32) + 2.3997}$

MW = **67.1 KDa**

When $\mathbf{R_f = 0.34}$,

y = logMW

$MW = 10^{y} = 10^{-1.7916(0.34) + 2.3997}$

MW = **50.5 KDa**

When $\mathbf{R_f = 0.42}$,

y = logMW

$MW = 10^{y} = 10^{-1.7916(0.42) + 2.3997}$

MW = **44.0 KDa**

When $\mathbf{R_f = 0.52}$,

y = logMW

$MW = 10^{y} = 10^{-1.7916(0.52) + 2.3997}$

MW = **29.1 KDa**

When $\mathbf{R_f = 0.84}$,

y = logMW

$MW = 10^{y} = 10^{-1.7916(0.84) + 2.3997}$

MW = **7.7 KDa**

Molecular weight of NHM and HM protein bands after SDS-PAGE

Samples	Number of Bands	Range of Molecular Weight (kDa)
NH1	6	44-146.8
NH9	8	7.7-146.8
H1	6	44-146.8
H9	8	29.1-146.8

[a]NH1= Non-Halal sample after 24 h refrigeration at 4°C, NH9= Non-Halal sample after 9 days of refrigerated storage at 4°C, H1=Halal slaughter sample after 24 h refrigeration at 4°C, H9= Halal slaughter sample after 9 days of refrigerated storage

APPENDIX 3

Partial sequence of LAB isolates (1: *L. casei,* 2: *E.* spp., 3: *E. devriesei*, 4: *E. pseudoavium*).

Sample	Sequence
L. casei	NNGGNGGCGTTCCGGATTTATTGGGCGTAAGCGAGCGCAGGCGGAAGAATAAGTCTGATGTG AAAGCCCTCGGCTTAACCGAGGAACTGCATCGGAAACTGTTTTTCTTGAGTGCAGAAGAGGAG AGTGGAACTCCATGTGTAGCGGTGGAATGCGTAGATATATGGAAGAACACCAGTGGCGAAGG CGGCTCTCTGGTCTGCAACTGACGCTGAGGCTCGAAAGCATGGGTAGCGAACAGGATTAGATA CCCTGGTAGTCCATGCCGTAAACGATGAGTGCTAAGTGTTGGGAGGTTTCCGCCTCTCAGTGCT GCAGCTAACGCATTAAGCACTCCGCCTGGGGAGTACGACCGCAAGGTTGAAACTCAAAGGAA TTGACGGGGGCCCGCACAAGCGGTGGAGCATGTGGTTTAATTCGAAGCAACGCGAAGAACCT TACCAGGTCTTGACATCTAGTGCCATTTGTAGAGATACAAAGTTCCCTTCGGGGACGCTAAGA CAGGTGGTGCATGGCTGTCGTCAGCTCGTGTCGTGAGATGTTGGGTTAAGTCCCGCAACGAGC GCAACCCTTGTTATTAGTTGCCAGCATTAAGTTGGGCACTCTAATGAGACTGCCGGTGACAAA CCGGAGGAAGGTGGGGATGACGTCAAGTCATCATGCCCCTTATGACCTGGGCTACACACGTGC TACAATGGGCAGTACAACGAGAAGCAAGCCTGCGAAGGCAAGCGAATCTCTGAAAGCTGTTC TCAGTTCGGACTGCAGTCTGCAACTCGACTGCACGAAGCTGGAATCGCTAGTAATCGCGGATC AGCACGCCGCGGTNGGAATACGTTCCGGGCNCTTGTACACACNGCCCGTCACACCATGGGG AGTCTGCAATGCCCAAAGCCGGTGGCCTAACCTTCGGGGAAGGAGCCGTCTAAGGCAGGGCA GATGACTGGGGTGAAGTCTAACAGGGGTAACCCGTAAAA

Sample	Sequence
E. spp.	GNNNNGGGCGGTTGCCGGATTATTGGGCGTAAGCGAGCGCAGGCGGTTTCTTAAGTCTGATGT
	GAAAGCCCCCGGCTCAACCGGGGAGGGTCATTGGAAACTGGGAAACTTGAGTGCAGAAGAGG
	AGAGTGGAATTCCATGTGTAGCGGTGAAATGCGTAGATATATGGAGGAACACCAGTGGCGAA
	GGCGGCTCTCTGGTCTGTAACTGACGCTGAGGCTCGAAAGCGTGGGGAGCAAACAGGATTAG
	ATACCCTGGTAGTCCACGCCGTAAACGATGAGTGCTAAGTGTTGGAGGGTTTCCGCCCTTCAG
	TGCTGCAGCTAACGCATTAAGCACTCCGCCTGGGGAGTACGACCGCAAGGTTGAAACTCAAAG
	GAATTGACGGGGGCCCGCACAAGCGGTGGAGCATGTGGTTTAATTCGAAGCAACGCGAAGAA
	CCTTACCAGGTCTTGACATCCTTTGACCACTCTAGAGATAGAGCTTCCCCTTCGGGGGCAAAGT
	GACAGGTGGTGCATGGTTGTCGTCAGCTCGTGTCGTGAGATGTTGGGTTAAGTCCCGCAACGA
	GCGCAACCCTTATTGTTAGTTGCCATCATTTAGTTGGGCACTCTAGCGAGACTGCCGGTGACAA
	ACCGGAGGAAGGTGGGGATGACGTCAAATCATCATGCCCCTTATGACCTGGGCTACACACGTG
	CTACAATGGGAAGTACAACGAGTCGCGAAGTCGCGAGGCTAAGCTAATCTCTTAAAGCTTCTC
	TCAGTTCGGATTGTAGGCTGCAACTCGCCTACATGAAGCCGGAATCGCTAGTAATCGCGGATC
	AGCACGCCGCGGTGAATACGTTCCCCGGGCCTTGTACACACCGCCCGTCACACCACGAGAGTT
	TGTAACACCCGAAGTCGGTGAGGTAACCTTTTTGGAGCCAGCCGCCTAAGGTGGGATAGATGA
	TTGGGGGTGAAGTCGTAACAGGGTAACCCGTAAA

Sample	Sequence
E. devriesei	GNNGGGGCGTTTCCGGATTTTTGGGCGTAAGCGAGCGCAGGCGGTTTCTTAAGTCTGATGTG
	AAAGCCCCCCGGCTCAACCGGGGAGGGTCATTGGAAACTGGGAAACTTGAGTGCAGAAGAG
	GAGAGTGGAATTCCATGTGTAGCGGTGAAATGCGTAGATATATGGAGGAACACCAGTGGCG
	AAGGCGGCTCTCTGGTCTGTAACTGACGCTGAGGCTCGAAAGCGTGGGGAGCAAACAGGAT
	TAGATACCCTGGTAGTCCACGCCGTAAACGATGAGTGCTAAGTGTTGGAGGGTTTCCGCCCT
	TCAGTGCTGCAGCTAACGCATTAAGCACTCCGCCTGGGGAGTACGACCGCAAGGTTGAAAC
	TCAAAGGAATTGACGGGGGCCCGCACAAGCGGTGGAGCATGTGGTTTAATTCGAAGCAACG
	CGAAGAACCTTACCAGGTCTTGACATCCTTTGACCACTCTAGAGATAGAGCTTCCCCTTCGG
	GGGCAAAGTGACAGGTGGTGCATGGTTGTCGTCAGCTCGTGTCGTGAGATGTTGGGTTAAG
	TCCCGCAACGAGCGCAACCCTTATTGTTAGTTGCCATCATTAAGTTGGGCACTCTAGCGAGA
	CTGCCGGTGACAAACCGGAGGAAGGTGGGGATGACGTCAAATCATCATGCCCCTTATGACC
	TGGGCTACACACGTGCTACAATGGGAAGTACAACGAGTCGCGAAGTCGCGAGGCTAAGCTA
	ATCTCTTAAAGCTTCTCTCAGTTCGGATTGTAGGCTGCAACTCGCCTACATGAAGCCGGAAT
	CGCTAGTAATCGCGGATCAGCACGCCGCGGTGAATACGTTCCCGGGCCTTGTACACACCGC
	CCGTCACACCACGAGAGTTTGTAACACCCGAAGTCGGTGAGGTAACCTTTTGGAGCCAGCC
	GCCTAAGGTGGGATAGATGATTGGGGGTGAAGTCGTAACAGGGGAAACCGTAAAA