

เอกสารอ้างอิง

- กรมปศุสัตว์. 2536. ข้อเสนอแนะในการเลี้ยงสัตว์. กองส่งเสริมการปศุสัตว์. (ระบบออนไลน์).
แหล่งข้อมูล <http://www.dld.go.th/service/buffalo/buffalo0.html>. (10 ตุลาคม 2549).
- กรมปศุสัตว์. 2545. ความรู้ด้านอาหารสัตว์. กองบำรุงพันธุ์สัตว์. (ระบบออนไลน์). แหล่งข้อมูล
http://www.dld.go.th/nutrition/Nutrition_Knowledge/nutrition_1.htm. (20 เมษายน
2548).
- กรมปศุสัตว์. 2548. ประมวลสถิติประจำปี 2548. กระทรวงเกษตรและสหกรณ์, กรุงเทพฯ. 156 หน้า.
- กรมปศุสัตว์. 2549. แผนปฏิบัติการด้านปศุสัตว์ (กระบือ). กองแผนงานกรมปศุสัตว์. (ระบบ
ออนไลน์). แหล่งข้อมูล <http://www.dld.go.th/planning/buffalo.html>. (10 ตุลาคม 2549).
- จรัญ จันทลักษณ์. 2527. ควายในระบบไร่นาไทย. สำนักพิมพ์ไทยวัฒนาพานิช. กรุงเทพฯ. 150 หน้า.
- จิรสิทธิ์ สงค์ประเสริฐ. 2529. การขุนโค-กระบือ. พิมพ์ครั้งที่ 3. สถาบันเทคโนโลยีการเกษตรแม่โจ้,
เชียงใหม่. 155 หน้า.
- จุฑารัตน์ เศรษฐกุล. 2539. เอกสารประกอบการสอนวิชาวิทยาศาสตร์เนื้อสัตว์ชั้นสูง. ภาควิชา
เทคโนโลยีการผลิตสัตว์ คณะเทคโนโลยีการเกษตร สถาบันเทคโนโลยีพระจอมเกล้าเจ้า
คุณทหารลาดกระบัง, กรุงเทพฯ. 126 หน้า.
- ชัยณรงค์ คันธพนิต. 2529. วิทยาศาสตร์เนื้อสัตว์. สำนักพิมพ์ไทยวัฒนาพานิช. กรุงเทพฯ. 276 หน้า.
- ชัยณรงค์ คันธพนิต, จินตนา อินทรมงคลม สุพัทธ์ ฟ้ารุ่งแสง และสฤณีพงษ์ ลิ้มปิยะเชิธร. 2525. การ
เปรียบเทียบลักษณะซากโค-กระบือ การตรวจฉิม และผลกระทบจากการแช่ซาก.
รายงานการประชุมวิชาการ สาขาสัตวศาสตร์ ครั้งที่ 20. มหาวิทยาลัยเกษตรศาสตร์.
กรุงเทพฯ. 1-5 กุมภาพันธ์ 2525.
- ชัยณรงค์ คันธพนิต และจันทร์พร เจ้าทรัพย์. 2539. การศึกษาเปรียบเทียบคุณสมบัติบางประการ
และการตรวจฉิมเนื้อจากกระบือและโคลูกผสมบราห์ที่ขุนด้วยอาหารชั้น 3 ระดับ. ว.
เกษตรศาสตร์ (วิทย.) 30: 435-443.
- ไชยวรรณ วัฒนจันทร์. 2532. การศึกษาเปรียบเทียบแบคทีเรียที่ย่อยสลายเซลลูโลสในกระหมักของ
กระบือปลักและโคที่ได้รับอาหารชนิดต่างๆ. ปัญหาพิเศษ. สาขาวิชาสัตวศาสตร์ คณะ
เกษตรศาสตร์ มหาวิทยาลัยขอนแก่น.

- เทอดชัย เวียรศิลป์. 2548. โภชนศาสตร์สัตว์เคี้ยวเอื้อง. พิมพ์ครั้งที่ 5. บริษัท ทรี โอ แอดเวอร์ไทซิ่ง แอนด์ มีเดีย จำกัด, เชียงใหม่. 357 หน้า.
- นันทนา ช่วยชูวงศ์. 2540. การศึกษาเปรียบเทียบสมรรถภาพการขุน คุณภาพผลผลิตและผลตอบแทนทางเศรษฐกิจของโคเนื้อ 5 พันธุ์ ที่มีอยู่ในประเทศไทย. วิทยานิพนธ์ วิทยาศาสตร์คุษฎีบัณฑิต สาขาสัตวบาล บัณฑิตวิทยาลัย, มหาวิทยาลัยเกษตรศาสตร์. 118 หน้า.
- ประเทือง นุชสาย ศรีจิตต์ สิมารักษ์ และเกรียงเดช ลำแดง. 2539. การเปรียบเทียบผลตอบแทนทางเศรษฐกิจ และลักษณะซากของการขุนโค-กระบือ. หน้า 66-82. รายงานผลงานวิจัยงานคั้นคว่ำและวิจัยการผลิตสัตว์ ประจำปี พ.ศ. 2539 สาขาการปรับปรุงพันธุ์สัตว์และการจัดการฟาร์ม. กรุงเทพฯ.
- ไพบุญย์ ใจเด็ด. 2539. หลักการเลี้ยงสัตว์. ภาควิชาเทคโนโลยีการผลิตสัตว์ คณะเทคโนโลยีการเกษตร สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง, กรุงเทพฯ. 226 หน้า.
- ไพโรจน์ วิริยจารี. 2535. การวางแผนการวิเคราะห์ทางด้านประสาทสัมผัส. ภาควิชาวิทยาศาสตร์และเทคโนโลยีทางการอาหาร, คณะเกษตรศาสตร์ มหาวิทยาลัยเชียงใหม่, เชียงใหม่. 275 หน้า.
- เมธา วรรณพัฒน์. 2547. การผลิตโคเนื้อและกระบือในเขตร้อน. พิมพ์ครั้งที่ 1. มหาวิทยาลัยขอนแก่น, ขอนแก่น. 208 หน้า.
- เมธา วรรณพัฒน์ และฉลอง วชิราภกร. 2533ก. เทคนิคการให้อาหารโคเนื้อและโคนม. สำนักพิมพ์ ฟีนีქซ์ พลัสซิ่ง จำกัด, กรุงเทพฯ. 142 หน้า.
- เมธา วรรณพัฒน์ และฉลอง วชิราภกร. 2533ข. การศึกษาการใช้ประโยชน์ของอาหารหยาบและอาหารข้นในสูตรอาหารกระบือขุน. หน้า 137-138. การประชุมทางวิชาการของมหาวิทยาลัยเกษตรศาสตร์ ครั้งที่ 28. มหาวิทยาลัยเกษตรศาสตร์, กรุงเทพฯ.
- เมธา วรรณพัฒน์. สมโภชน์ ประเสริฐสุข, ศักดิ์สิทธิ์ จันทร์ไทย และอภิชัย ศิวประภา. 2525. การปรับปรุงการใช้ประโยชน์ฟางข้าวเพื่อเลี้ยงโคโดยการหมักด้วยยูเรีย. ว.แก่นเกษตร. 10 (1-2): 11-19.
- เขवालัภณ์ สุรพันธ์พิศิษฐ์. 2536. เทคโนโลยีเนื้อสัตว์และผลิตภัณฑ์. พิมพ์ครั้งที่ 2. โรงพิมพ์สหมิตรออฟเซต. กรุงเทพฯ. 129 หน้า.
- ลักขณา รุจนะไกรกานต์. 2533. วิทยาศาสตร์และเทคโนโลยีเนื้อสัตว์. พิมพ์ครั้งที่ 1. มหาวิทยาลัยเชียงใหม่, เชียงใหม่. 407 หน้า

- ศักดิ์สงวน กอนันทา จินตนา อินทรมงคล ศิริวัฒน์ อินทรมงคล และศกภาพรรณ บุญยเวชชีวิน.
2538. การปรับปรุงพันธุกรรมกระบือปลักงาน. งานแสดงเกษตรและอุตสาหกรรมโลก.
อักษรสยามการพิมพ์. กรุงเทพฯ. 239 หน้า.
- สัญญาชัย จตุรสิทธา. 2551. เทคโนโลยีเนื้อสัตว์. พิมพ์ครั้งที่ 2. โรงพิมพ์มิ่งเมือง. เชียงใหม่. 335 หน้า.
- สัญญาชัย จตุรสิทธา. 2547. การจัดการเนื้อสัตว์. พิมพ์ครั้งที่ 3. โรงพิมพ์มิ่งเมือง. เชียงใหม่. 170 หน้า.
- สารกิจ ถวิลประวัตติ. 2529. การศึกษาเปรียบเทียบลักษณะซากกระบือพื้นเมืองกับกระบือลูกผสม
พื้นเมืองและมูร่าห์. หน้า 161-168. รายงานการประชุมทางวิชาการของ
มหาวิทยาลัยเกษตรศาสตร์ ครั้งที่ 24. มหาวิทยาลัยเกษตรศาสตร์. กรุงเทพฯ.
- สำนักคณะกรรมการวิจัยแห่งชาติ. 2532. กระบือสัตว์ที่ยังใช้ไม่คุ้มค่า. พิมพ์ครั้งที่ 1. โรงพิมพ์คุรุ
สภา, กรุงเทพฯ. 159 หน้า.
- อนุชา ศิริ และสุทัศน์ ศิริ. 2526. การเจริญเติบโตของสัตว์. สำนักวิจัยและส่งเสริมวิชาการ
การเกษตร. เทคโนโลยีการเกษตรแม่โจ้. 148 หน้า.
- Acker, D., and M. Cunningham. 1991. *Animal Science and Industry*. New Jersey: Prentice-Hall
Inc.
- Aharoni, Y., A. Orlov, and A. Brosh. 2004. Effect of high- forage content and oilseed
supplementation of fattening diets on conjugated linoleic acid (CLA) and trans fatty
acids profiles of beef lipid fractions. *Anim. Feed. Sci. & Technol.* 117: 43-60.
- Anjaneyulu, A.S.R., V. Lakshmanan, N. Sharma, and N. Kondaiah. 1990. Buffalo meat
production and meat quality: a review. *Indian Food Packer.* 44: 21-31.
- Anna, M.B., B. Picard, and Y. Geay. 1998. Muscle fibre characteristics in four muscles of
growing bulls I. Postnatal differentiation. *Livest. Prod. Sci.* 53: 15-23.
- AOAC. 1997. *Official Methods of Analysis (15th Ed.)* Association of Official Analytical Chemists,
Arlington, VA.
- Arousseau, B., D. Bauchart, E. Calichon, D. Micol, and A. Priolo. 2004. Effect of grass or
concentrate feeding systems and rate of growth on triglyceride and phospholipids and
their fatty acids in the *M. longissimus thoracis* of lambs. *Meat Sci.* 66: 531-541.
- Badiani, A., L. Montellato, D. Bochicchio, P. Anfossi, P. Anfossi, E. Zanardi, and M. Maranesi,
2004. Selected nutrient contents, fatty acid composition, including linoleic acid, and
retention values in separable lean from lamb rib loins as affected by external fat and
cooking method. *J. Agri. and Food Chem.*, 52: 5187-5194.

- Baik, M.G., J.K. Ha, W.Y. Kim, and I. K. Ham. 1997. Effects of different levels of concentrate in complete rations on nutrient digestibilities and ruminal metabolites in sheep and growth performance in Korean native bulls. *Asian-Aus. J. Anim. Sci.* 10: 371.
- Baruah, K.K., S.K. Ranijhan, and N.N. Pathak. 1988. Feed intake, nutrient utilization and growth in male buffalo calves fed different levels of protein and energy. *Buffalo. J.* 4: 131-138.
- Bas, p., A. Rouzeau, P. Poissonnet, and P. Sauvant. 1997. Influence de la densite energetique de la ration sur l'engraissement et la composition des depots adipeux chez l'agneau. pp. 32 In: 4. *Rencontres autour des Recherches sur les Ruminants.*
- Bauman, D.E., L.H. Baumgard, B.A. Corl, and J.M. Griinari. 1991. Biosynthesis of conjugated linoleic acid in ruminants. In: *Proceedings of the American Society of Animal Science*, Ithaca, NY. 1-15pp.
- Beaulieu, A.D., J.K. Drackley, and N.R. Merchen. 2002. Concentrations of conjugated linoleic acid (cis-9, trans-11-octadecadienoic acid) are not increased in tissue lipids of cattle fed a high concentrate diet supplemented with soybean oil. *J. Anim. Sci.* 80: 847-861.
- Bee, G. 2001. Dietary conjugated linoleic acids affect tissue lipid composition but not de novo lipogenesis in finishing pigs. *Anim. Research.* 50: 383-399.
- Bekhit, A.E.D., G.H. Geesink, M.A. Ilian, J. D. Mortan, J. R. Sedcole, and R. Bickerstaff. 2004. Pro-oxidant activity of carnosine rutin and quercetin in a beef model system and their effects on the metmyoglobin reducing activity. *Euro. Food Research and Techno.* 218(6): 507-514.
- Belury, M.A. 1995. Conjugated dienoic linoleate: a polyunsaturated fatty acid with unique chemoprotective properties. *Nutri. Rev.* 53: 83-89.
- Bemmers, M., and L.D. Satterlee. 1975. Physico-chemical characterization of normal and PSE porcine muscle myoglobins. *J. Food Sci.* 40: 40.
- Bessa, R.J.B., J.M.R. Santos-SilvaRibeiro, and A.V. Portugal. 2000. Reticulo-rumen biohydrogenation and the enrichment of ruminant edible products with linoleic acid conjugated isomers. *Livest. Prod. Sci.* 63: 201-211.
- Bharadwaj, A., and R.K. Sethi. 2000. Meat production potential in Murrah buffalo male calves under different systems of feeding management. *Indian J. Anim. Sci.* 70: 769-770.

- Bidner, T.D., N.R. Schupp, A.B. Mohamad, N.C. Rumore, R.E. Montgomery, C.P. Bagley, and K.W. Mc Millin. 1986. Acceptability of beef from Angus-Hereford or Angus-Hereford-Brahman steers finished on all forage or a high energy diet. *J. Anim. Sci.* 62: 381-387.
- Biesalski, H.K. 2005. Meat as a component of a healthy diet are there any risks or benefits if meat is avoided in diet. *Meat Sci.* 70(3): 509-524.
- Biggs, H.G., J.M. Erikson, and W.R. Moorehead. 1975. A manual colorimetric assay of triglycerides in serum. *Clin. Chem.* 21: 437-447.
- Boehm, M.L., T.L. Kendall, V.F. Thompson, and D.E. Goll, 1998. Changes in the calpains and calpastatin during postmortem storage of bovine muscle. *J. Anim. Sci.* 76(9): 2415-2434.
- Bolte, M.R., B.W. Hess, W.J. Means, G.E. Moss, and D.C. Rule. 2002. Feeding lambs high-oleate or high-linoleate safflower seeds differentially influences carcass fatty acid composition. *J. Anim. Sci.* 80: 609-616.
- Boren, J.C., R.L. Lochmiller, and D.M. Leslie. 1996. Relation of serum and muscle free amino acid to dietary protein in the Northern Bobwhite. *Proc. Okla. Acad. Sci.* 76: 55-65.
- Borghese, A. and M. Mazzi. 2005. Buffalo production and research. *Food and Agri Organization of the united nations*. (Online). <http://www.fao.org/docrep/010/ah847e/ah847e00.htm> (Access on 10/10/2006).
- Borghese, A., and M. Mazzi. 2005. Buffalo population and strategies in the world. pp. 1-39. In: Borghese A, (eds.). *Buffalo production and research*, REU Technical Series 67, FAO Regional Office for Europe, Rome.
- Bowling, R.A., J.K. Riggs, G.C., Smith, Z.L. Carpenter, R.L. Reddish, and O.D. Butler. 1978. Production, carcass and palatability characteristics of steers produced by different management systems. *J. Anim. Sci.* 46: 333-339.
- Cassens, R.C., C. Faoustman, and F. Jimenez-Colmenero. 1988. Modern developments in research on colour of meat. pp. 2-11. In: B. Krol, P. Van Roon and J. Houben (Eds.), *Trends in Modern Meat Technology*2. Wageningen, The Netherlands: Pudoc.
- Castillo, L.S. 1981. The nutrition of water buffaloes. In recent advances in buffalo research and development. FFTC book series no. 22.

- Casutt, M.M., M.R. Scheeder, D.A. Ossowski, F. Sutter, B.J. Slisinski, and A.A. Danilo. 2000. Comparative evaluation of rumen-protected fat, coconut oil and various oilseeds supplemented to fattening bulls. 2. Effects on composition and oxidative stability of adipose tissues. *Arch. Tierernäh*, 53: 25-44.
- Chan, W.K. M., E.A. Decker, J.B. Lee, and D.A. Butterfield. 1994. EPR spin-trapping studies of the hydroxyl radical scavenging activity of carnosine and related dipeptides. *J. Agri. and Food Chem.* 42: 1407-1410.
- Chantalakhana, C. 1981. Comparative evaluation of swamp buffaloes in the SABRAO region, p. 91-110. In *Proceedings of the 2nd SABRAO Workshop on Animal Genetic Resources*, Kuala Lumpur, 5-6 May, 1981.
- Chin, S.F., W. Liu, J.M. Storkson, Y.L. Ha, and M.W. Pariza. 1992. Dietary sources of conjugated dienoic isomers of linoleic acid, a newly recognized class of anticarcinogens. *J. Food Compo. and Anal.*, 5: 185-197.
- Chrystall, B. 1994. Meat texture measurement. In: Pearson, A.M., and T.R. Duston (Eds), Quality attributes and their measurement in meat, poultry and fish products, *Advances in Meat Research*, 9: 316-322.
- Close, W.H. 1997. Nutritional manipulation of meat quality in pigs and poultry. pp. 181-192. In: T.P. Lyons and K.A. Jacques. *Biotechnology in the Feed Industry*, Nottingham, Nottingham University press.
- Cutrignelli, M.I., S. Calabro, P. Laudadio, F. Grasso, and T. Di Lella. 1996. Chemical-nutritional characteristics of meat produced by young buffalo bulls. pp. 101-106. In: *Proceedings of the XXXI International Symposium of Zootecny "Role of animal products on animal health"*, Milano, Italy, 13 September, 1996.
- Dalan, I. 1996. Effect of diets and production systems on carcass characteristics and meat quality of buffalo and cattle. *Proceedings of the 2nd ABC congress*. October 9-12 1996. Manila, Philippine. 248-251p.
- Dao Lan, N., M.V. Sanh, and L.V. Ly. 2004. Effect of season and roughage: concentrate ratio on weight gain of young buffalo. Workshop-seminar "Making better use of local feed resources" SAREC-UAF, National Institute of Animal Husbandry, Hanoi. (online). <http://www.mekarn.org/sarpro/sahn.htm>. (Access on 10/02/2008).

- Dawood, A. 1995. Nutrient composition of Najdi-Camel meat. *Meat Sci.* 39: 71-78.
- De Mendoza, M.G., L.A. de Moreno, N. Huerta-Leidenz, S. Uzeategui-Bracho, M.J. Beriain, and G.C. Smith. 2005. Occurrence of conjugated linoleic acid in longissimus dorsi muscle of water buffalo (*Bubalus bubalis*) and zebu-type cattle raised under savannah condition. *Meat Sci.* 69: 93-100.
- Dermirel, G., A.M. Wachira, L.A. Sinclair, R.G. Wilkinson, J.D. Wood, and M. Enser. 2004. Effect of dietary n-3 polyunsaturated fatty acids breeds and vitamin E on fatty acids of lamb muscle liver and adipose tissue. *British J. Nutri.* 91: 551-565.
- Demirel, G., J.D. Wood, and M. Enser. 2004. Conjugated linoleic acid content of lamb muscle and liver fed different supplements. *Small Ruminant Research.* 53: 23-28.
- Demirel, M.C., A.R. Atilgan, R.L. Jernigan, B. Erman, and I. Bahar. 2006. Identification of kinetically hot residues in proteins. *Prot. Sci.* 7: 2522-2532.
- DePeters, E.J., and L.E. Smith. 1986. Forage quality and concentrate for cows in early lactation. *J. Dairy Sci.* 69: 135.
- Devine, C.E., N.M. Wahlgren, and E. Tornberg. 1999. Effect of rigor temperature on muscle shortening and tenderization of restrained and unrestrained beef M. Longissimus thoracis et lumborum. *Meat sci.* 51: 61-72.
- Dhanda, O.P. 2004. Developments in water buffalo in Asia and Oceania. pp.17-28. In: *Proc. of the Seventh World Buffalo Congress*, Manila, Philippines, 20-23 Oct.
- Di Luccia, A., A. Satriani, C.M.A. Barone, P. Colatruccio, S. Gigli, M. Occidente, E. Trivellone, A. Zullo and D. Matassino. 2003. Effect of dietary energy content on the intramuscular fat depots and triglyceride composition of river buffalo meat. *Meat Sci.* 65: 1379-1389.
- Dosi, R., A.D. Maro, A. Chambery, G. Colonna, S. Costantini, G. Geraci, and A. Parente. 2006. Characterization and kinetics studies of water buffalo (*Bubalus bubalis*) myoglobin. *Comp. Biochem. Physical.* 46: 667-672.
- Dransfield, E. 1994. Optimisation of tenderization, aging and tenderness. *Meat Sci.* 36: 105-121.
- Dufey, P. A. 1999. Fleisch ist eine CLA-Nahrungsquelle. *Agrarforschung.* 6: 177-180.
- Durand, D., V. Scislowski, D. Gruffat, Y. Chillard, and D. Bauchart. 2005. High-fat rations and lipid peroxidation in ruminants: consequences on the health of animals and quality of their products. pp. 151-162. In: *J.F. Hocquette and S. Gigli (Eds.), Indicators of milk*

and beef quality. *EAAP publication no. 112*. Wageningen, The Netherlands: Wageningen Academic Publishers.

- Dutaud, D., L. Aubry, M.A. Sentandreu, and A. Quali. 2006. Bovine muscle 20S proteasome: I. Simple purification procedure and enzymatic characterization in relation with postmortem conditions. *Meat Sci.* 74: 327-336.
- Eggert, J.M., M.A. Belury, A. Kempa-Steczko, S.E. Mills, and A.P. Schinckel. 2001. Effect of conjugated linoleic acid on the belly firmness and fatty acid composition of genetically lean pigs. *J. Anim. Sci.* 79: 2866-2872.
- Elmore, J.S., H.E., Warren, D.S. Mottram, N.D. Scollan, M. Enser, and R.I. Richardson. 2004. A comparison of the aroma volatiles and fatty acid compositions of grilled beef muscle from Aberdeen Angus and Holstein-Friesian steers fed diets based on silage or concentrates. *Meat Sci.* 68: 27-33.
- Enser, M., N.D. Scollan, N.J. Choi, E. Kurt, K. Hallett, and J.D. Wood. 1999. Effect of dietary lipid on the content of conjugated linoleic acid (CLA) in beef muscle. *Anim. Sci.* 69: 143-146.
- Faarungsang, S. 1991. Thai Swamp Buffalo. Department of Animal Science, Kasetsart University, Thailand. (online). <http://www.angrin.tlri.gov.tw/apec2003/Chapter1Thai.pdf>. (Access on 10/10/2006).
- Faarungsang, S. 2004. Thai Swamp Buffalo General Information. *The Chinese Society of Animal Science 2003*.
- Failla, S., D. Settineri, V. Bisegna, and M. Mormile. 2001. Produzione del vitello bufalino a carne bianca alimentato con due diversi tipi di latte. Nota II: qualità della carne. pp. 281-284. In: *Proceedings of the 1 st Italian Congress on Buffalo Breeding*, Eboli, Italy, 3-5 October, 2001.
- FAO Statistics. 2000. (Online). http://www.aphca.org/publications/files/w_buffalo.pdf. (Access on 10/10/2006).
- Faustmen, C., and R.C. Cassens. 1990. The biochemical basis for discoloration in fresh meat: a review. *J. Muscle Foods.* 1: 217-243.
- Folch, J., M. Lee, and G.H.S. Stanley. 1957. A simple method for the isolation and purification of total lipid from animal tissue. *J. Biol. Chem.* 226: 497-509.

- Foucat, L., M. Renerre, P. Gatellier, and M. Anton. 1994. ¹H NMR study of bovine myoglobin autoxidation influence of muscle type and time post-mortem. *Int. J. Food Sci. Technol.* 29: 1-8.
- French, P., C. Stanton, F. Lawless, E. G.O’Riordan, F.J. Monahan, P.J. Caffrey, and A.P. Moloney. 2000b. Fatty acid composition, including conjugated linoleic acid, intramuscular fat from steers offered grazed grass, grass silage, or concentrate-based diets. *J. Anim. Sci.* 78: 2849-2855.
- French, P., E.G. O’Riordan, F.J. Monahan, P.J. Caffrey, M.T. Mooney, D.J. Troy, and A.P. Moloney. 2001. The eating quality of meat of steers fed grass and/or concentrates. *Meat Sci.* 57: 379-386.
- French, P., P.J. Caffrey, M.F. Vidal, E.G. O’Riordan, F.J. Monahan, M.T. Mooney, D.J. Troy, and A.P. Moloney. 2000a. Meat quality of steers finished on autumn grass silage or concentrate-based diets. *Meat Sci.* 56: 173-180.
- Fritsche, J., and H. Steinhardt. 1998. Amounts of conjugated linoleic acid (CLA) in German foods and evaluation of daily intake. *Food Res. Technol.* 206: 77-82.
- Gandemer, G. 1999. Lipids and meat quality: lipolysis, oxidation, Maillard reaction and flavour. *Science des Aliment.* 19: 439-458.
- Geesink, G.H., S. Kuchay, A.H. Chishi, and M. Koochmaraie. 2006. μ -Calpain is essential for postmortem proteolysis of muscle proteins. *J. Anim. Sci.* 84: 2834-2840.
- Gibney, M.J. 1993. Fat in animal products: facts and perceptions. pp. 57-61. In: J. D. Wood, and T. L. J. Lawrence (Eds.), *Safety and quality of food from animals. British Society of Animal Production Occasional Publication n17*. Edinburgh: British Society of Animal Production.
- Gigli, S., A. Romita, A. Borghese, and M. Mormile. 1982. Water buffaloes and Friesian bovine males performances at different ages: fifth quarter and carcass characteristics. Atti II Convegno Internazionale sull’allevamento buffalino nel mondo. Caserta, Italia, Sett. 29-Ott. 2: 593-609.
- Gigli, S., L. Ferrara, S. Failla, F. Napolitano, A. Di Luccia, and F. Manniti. 1993. Caratteristiche qualitative della carcassa e della carne di vitelloni podilici, bufalimi, frisoni e romagnoli alimentati con due diversi livelli nutritive. *Agricoltura Ricerca.* 144: 29-50.

- Giuffrida de Mendoza, M., L. Arenas de Moreno, N. Huerta-Leidenz, S. Uzcategui-Bracho, M.J. Beriain, and G.C. Smith. 2005. Occurrence of conjugated linoleic acid in longissimus dorsi muscle of water buffalo (*Bubalus bubalis*) and zebu-type cattle raised under savannah conditions. *Meat Sci.* 69: 93-100.
- Glaser, K.R., C. Weck, and M.R. Scheeder. 2002. Effect of feeding pigs increasing levels of C 18:1 trans fatty acids on fatty acid composition of backfat and intramuscular fat as well as backfat firmness. *Archiv der Tierernahrung.* 56: 117-130.
- Gray, J. I., and A.M. Pearson. 1987. The effect of dietary oregano essential oil on lipid oxidation in raw and cooked chicken during refrigerated storage. In: J.I. Gray and A.M. Pearson (Eds), Rancidity and warmed-over flavor. *Advances in Meat Research.* 3: 221-269.
- Gray, J.I., and F.T. Monahan. 1992. Measurement of lipid oxidation in meat and meat products. *Trends Food. Sci. Technol.* 3: 315-319.
- Griinari, J. M., and D.E. Bauman. 1999. Biosynthesis of conjugated linoleic acid and its incorporation into meat and milk in ruminants. pp. 108-200. In: M.P., Yurawecz, M.M. Mossoba, J.K.G. Kramer, M.W. Pariza, and G. Nelson (Eds), *Advances in conjugated linoleic acid.* Champaign, IL: American Oil Chemists Society Press. *Research.*
- Griswold, K.E., G.A. Apgar, R.A. Robinson, B.N. Jacobson, D. Johnson, and H.D. Woody. 2003. Effectiveness of short-term feeding strategies for altering conjugated linoleic acid content of beef. *J. Anim. Sci.* 81: 1862-1871.
- Ha, Y.L., J. Storkson, and M.W. Pariza. 1990. Inhibition of bezo (a) pyrene-induced mouse forestomach neoplasia by conjugated dienoic derivatives of linoleic acid. *Cancer Res.* 50(40): 1097-1101.
- Harfoot, C.G., and G.P. Hazelwood. 1988. Lipid metabolism in the rumen. pp. 285-322. In: P. N. Hobson (Ed). *The Rumen Microbial Ecosystem.* London: Elsevier Science Publishers.
- Hill, F. 1969. The solubility of intramuscular collagen in meat animal of various ages. *J. Food Sci.* 31: 161-166.
- Honikel, K.O., and R. Hamn. 1999. Measurement of water-holding capacity and juiciness. pp. 125-161. In: A.M. Pearson and T.R. Dutson (Eds.), *Quality Attributes and Their Measurement in Meat, Poultry and Fish Products.* Aspen Publishere Inc. Gaithersburg, Maryland, USA.

- Houseknecht, K.L., J.P. Vandenheuvel, S.Y. Moyacamarena, C.P. Portocarremo, L.W. Peck, K.P. Nickel, and M.A. Belury. 1998. Dietary conjugated linoleic acid normalizes impaired glucose tolerance in the zucker diabetic fatty fa/fa rat. *Biochem. Biophysic. Res. Commu.* 244: 678-682.
- Huff-Lonergan, E., T. Mitsuhashi, D.D. Beekman, F.C. Parrish, D.G. Olson, and R.M. Robson. 1996. Proteolysis of specific muscle structural proteins by μ -calpain at low pH and temperature is similar to degradation in postmortem bovine muscle. *J. Anim. Sci.* 74: 993-1008.
- Ip, C., S. Banni, E. Angioni, G. Carta, J. McGinley, H.J. Thompson, D. Barbano, and D. Bauman. 1999. Conjugated linoleic-acid enriched butter fat alters mammary gland morphogenesis and reduces cancer risk in rats. *J. Nutri.* 129: 2135-2142.
- Ivan, M., P.S. Mir, L.M. Koenig, L. Neill, T. Entz, and Z. Mir. 2001. Effect of dietary sunflower seed oil on rumen protozoa population and tissue concentration of conjugated linoleic acid in sheep. *Small Ruminant Research.* 41: 215-227.
- Joo, S.T., J.I. Lee, Y.L. Ha, and G.B. Park. 2002. Effect of dietary conjugated linoleic acid on fatty acid composition, lipid oxidation, color, and water holding capacity of pork loin. *J. Anim. Sci.* 80: 108-112.
- Jung, D.H., H.G. Biggs, and W.R. Moorehead. 1975. Colorimetry of serum cholesterol with use of ferric acetate uranyl acetate and ferrous sulfate/sulfuric acid reagents. *Clin. Chem.* 21: 1526-1530.
- Kanatt, S.R., P. Paul, S.F. D'Souza, and P. Thomas. 1997. Effect of gamma irradiation on the lipid peroxidation in chicken, lamb and buffalo meat during chilled storage. *Food Technol.* 17: 283-294.
- Keasava R.V., B.N. Kowale, N.P. Babu, and G.S. Bisht. 1996. Effect of cooking and storage on lipid oxidation and development of cholesterol oxidation products in water buffalo Meat. *Meat Sci.* 43: 179-185.
- Kemp, J.D., M. Mahyuddin, D.G. Ely, J.D. Fox, and W.G. Moody. 1981. Effect of feeding systems, slaughter weight and sex on organic properties, and fatty acid composition of lamb. *J. Anim. Sci.* 51: 321-330.

- Kepler, C.R., K.P. Hirons, J.J. McNeill, and S.B. Tove. 1966. Intermediates and products of the biohydrogenation of linoleic acid by *Butyrivibrio fibrisolvens*. *J. Biol. Chem.* 241: 1350-1354.
- Kerry, J.P., D.J. Buckley, and P.A. Morrissey. 2000. Improvement of oxidative stability of beef and lamb with vitamin E. pp. 229-261. In: Decker, E., C. Faustman and C.J. Lopez-Bote (Eds.), *Antioxidants in Muscle Foods: Nutrition Strategies to Improve*. United States: John Wiley & Sons.
- Knight, T.W., S. Knowly, and A.F. Death. 2003. Factors affecting the variation in fatty acid concentrations in lean beef from grass-fed cattle in New Zealand and the implications for human health. *New Zealand J. Agri. Res.* 46: 83-95.
- Koohmaraie, M. 1996. Biochemical factors regulating the toughening and tenderization processes of meat. *Meat Sci.* 43: 193-201.
- Kott, R.W., P.G. Hatfield, J.W. Bergman, C.R. Flynn, H. Van Wagoner, and J.A. Boles. 2003. Feedlot performance, carcass composition, and muscle and fat, CLA concentrations of lambs fed diets supplemented with safflower seeds. *Small Ruminant Research.* 49: 11-17.
- Lambert, A.D., J.P. Smith, and K.L. Dodds. 1992. Physical, chemical and sensory changes in radiated fresh pork packaged in modified atmosphere. *J. Food Sci.* 57: 1294-1299.
- Larick, D.K., and B.E. Turner. 1990. Flavor characteristics of forage and grain-fed beef as influenced by phospholipids and fatty acid compositional differences. *J. Food Sci.* 55: 312-317.
- Larick, D.K., H.B. Hedrick, M.E. Bailey, J.E. Williams, D.L. Hancock, G.B. Garner, and R.E. Morrow. 1987. Flavor constituents of beef as influenced by forage- and grain-feeding. *J. Food Sci.* 52: 245-251.
- Lauridsen, C., H. Mu, and P. Henckel. 2005. Influence of dietary conjugated linoleic acid (CLA) and age at slaughtering on performance, slaughter and meat quality, lipoproteins, and tissue deposition of CLA in barrows. *Meat Sci.* 69: 393-399.
- Lawless F., J.J. Murphy, G. Kjellmer, J.F. Conolly, R. Devery, S. Aherne, M. O'Shea, and C. Stanton. 1996. Effect of diet on bovine milkfat conjugated linoleic acid content. *Irish J. Agric. Food Res.* 35: 208.
- Lawrie, R.A. 1991. *Meat science* (5th ed.). England: Pergamon Press, Chapters 10.

- Lee, K.N., D. Krichevsky, and M.W. Pariza. 1994. Conjugated linoleic acid and atherosclerosis in rabbits. *Atherosclerosis*. 108: 19-25.
- Lemcke, B. 2006. Water Buffalo Handling: Property to Abattoir. Livestock Management, Pastoral Production, Darwin., DPIFM Agnote No. J63.
- Levie, A. 1970. The Meat Handbook. 2nd. Connecticut, Avi publishing Westport.
- Liang, J.B., and M.N. Samiyah, 1989. Comparative energy requirement of growing swamp and Murrah buffaloes. *Buffalo. J.* 2: 225-227.
- Liu, Q., K.K. Scheller, S.C. Arp, D.M. Schaefer, and S.N. Williams. 1996. Titration of fresh meat color stability and malondialdehyde development with Holstein steers fed vitamin E-supplemented diets. *J. Anim. Sci.* 74: 117-126.
- Lorenz, S., A. Buettner, K. Ender, G. Nuernberg, H.J. Papstein, and P. Schieberle. 2002. Influence of deeping system on the fatty acid composition in the longissimus muscle of bulls and odorants formed after pressure-cooking. *Euro. Food Res. Technol.*, 214: 112-118.
- Ma, D.W.L., A.A. Wierzbicki, C.J. Field, and M.T. Clandinin. 1999. Conjugated linoleic acid in Canadian dairy and beef products. *J. Agri. Food Chem.* 47: 1956-1960.
- Madron, M.S., D.G. Peterson, D.A. dwyer, B.A. Corl, L.H. Baumgard, and D.H. Beermann. 2002. Effect of extruded full-fat soybeans on conjugated linoleic acid content of intramuscular, intermuscular and subcutaneous fat in beef steers. *J. Anim. Sci.* 80: 1135-1143.
- Mahmoudzadeh, H., H. Fazaeli, I. Kordnejad, and H.R. Mirzaei. 2007. Response of male buffalo calves to different levels of energy and protein in finishing diets. *Pakistan J. Biol. Sci.* 10: 1398-1405.
- Majdoub, L., M. Vermore, and I. Ortiqes-Marty. 2001. Net nutrient metabolism in hindlimb of growing lambs supplemented with propionate. In: *Proceeding of the French-Polish symposium held in Paris (FRA) on the 25 and 26th of September*. Animal and Human Growth and development: Regulatory mechanism. session 3: Regulation of muscle growth and lipid metabolism. 24: 51.
- Mandell, I.B., J.G. Buchanan-Smith, and C.P. Compbell. 1998. Effects of forage vs. grain feeding on carcass characteristics, fatty acid composition, and beef quality in Limousin-cross steers when time on feed is controlled. *J. Anim. Sci.* 76: 2619-2630.

- Marcos, E., J.S. Fleming, J.L. Martinez, N. Waszczynskyj, and C.R. Socol. 2003. Quantitative and qualitative buffalo carcass characteristics fed with different relationship of roughage and concentrate on a feedlot system in Brazil. pp: 30. In: Proceeding of the 4th Asian Buffalo Congress. New Delhi, India.
- Marino, R., M. Albenzo, A. Girolami, A. Muscio, A. Sevi, and A. Braghieri. 2006. Effect of forage to concentrate ratio on growth performance, and on carcass and meat quality of Podolian young bulls. *Meat Sci.* 72: 415-424.
- Mason, I.L. 1974. Speies, type and breed. pp. 1-47. In W.R. Cockriil (Ed). The Husbandry and Health of the Domestic Buffalo. Rome : Publication Division, Food and Agriculture Organization of the United Nations.
- McKeith, F.K., W. Smith, G.C. Smith, I.R. Dutson, and Z.L. Carpenter. 1985. Tenderness of major muscle from three breed-type of cattle at different times on feed. *Meat Sci.* 13: 151-166.
- Melton, S.L. 1990. Effect of feeds on flavor of red meat, a review. *J. Anim. Sci.* 68: 4421-4435.
- Melton, S.L., J.M. Black, G.W. Davis and W.R. Backus. 1982. Flavor and selected chemical characteristics of ground beef from steers backgrounded on pasture and fed corn up to 140 days. *J. Food. Sci.* 47: 699.
- Mir, P.S., T.A. McAllister, S. Zaman, S. Jones, S.D.M. Jones, M.L. He, and J.L. Aalhus. 2003. Effect of dietary sunflower oil and vitamin E on beef cattle performance, carcass characteristics and meat quality. *Canadian J. Anim Sci.* 83: 53-66.
- Mir, P.S., Z. Mir, P.S. Kuber, C.T. Gaskins, E.L. Martin, and M.V. Dodson. 2002. Growth, carcass characteristics, muscle conjugated linoleic acid (CLA) content, and response to intravenous glucose challenge in high percentage Wagyu, Wagyu x Limousin and Limousin steers fed sunflower oil-containing diets. *J. Anim. Sci.* 80: 2996-3004.
- Moloney, A.P., M.T. Mooney, J.P. Kerry, and D.J. Troy. 2001. Producing tender and flavoursome beef with enhanced nutritional characteristics. *Proceedings of the Nutri Soci.* 60: 221-229.
- Morrison, W.R., and L.M. Smith. 1964. Preparation of fatty acid methyl esters and dimethylacetals form lipids with boron fluoride-methanol. *J. Lipid Res.* 5: 600-608.
- Mottram, D.S. 1998. Flavour formation in meat and products: a review. *Food Chem.* 62: 415-424.

- Muir, P.D., J.M. Beaker, and M.D. Bown. 1998. Effects of forage and grain-based feeding system on beef quality: A review. *New Zealand Journal of Agricultural Research*. 41: 623-635.
- Mulholland, J.G., J.B. Coombe, and W. R. McManus. 1976. Effect of starch on the utilization by sheep of a straw diet supplemented with urea and minerals. *Aust. J. Agric. Sci.* 27: 139.
- Na-Chiangmai A., 2000. Development of a buffalo breeding scheme in Thailand. ICAR Technical Series. 4: 61-68.
- Naik, G.N., P. Paul, S.P. Chawla, A.T. Shericar, and P.M. Nair. 1994. Influence of low dose irradiation on the quality of fresh buffalo meat stored at 0-3 °C. *Meat Sci.* 38: 307-313.
- Naik, P.K., V. Lakshmanan, D.S. Sahu, S.K. Mendiratta, U.R. Mehra and R.S. Dass. 2003. Effect of feeding ammoniated and ammoniated plus hydrochloric acid treated wheat straw on carcass and slaughter characteristics of male buffalo calves. pp: 35. In: *Proceedings of the 4th Asian Buffalo Congress*, New Delhi, India. 24 – 28 February 2003.
- Neath, K.E., A.N. Del Barrio, R.M. Lapitan, J.R.V. Herrera, L.C. Cruz, T. Fujihara, S. Muroya, K. Chikumi, M. Hirabayashi, and Y. Kanai. 2007. Difference in tenderness and pH decline between water buffalo meat and beef during postmortem aging. *Meat Sci.* 75: 499-505.
- Noci, F., P. O'Kiely, F.J. Monahan, C. Stanton, and A.P. Moloney. 2005. Conjugated linoleic acid concentration in *M. Longissimus dorsi* from heifers offered sunflower oil-based concentrates and conserved forages. *Meat Sci.* 69: 509-518.
- Nuernberg, K., G. Nuernberg, K. Ender, S. Lorenz, K. Winkler, and R. Rickert. 2002. n-3 fatty acid, and conjugated linoleic acid on longissimus muscle in beef cattle. *European J. Lipid Sci Technol.* 104: 463-471.
- O'Sullivan, A., K. Galvin, A.P. Moloney, D.J. Troy, K. O'Sullivan, and J.P. Kerry. 2003. Effect of pre-slaughter rations of forage and/or concentrate on the composition and quality of retail package beef. *Meat Sci.* 63: 279-286.
- Parodi, P.W. 2002. Health benefits of conjugated linoleic acid. *Food Indus J.* 5: 222-259.
- Pearson, A.M. and R.B. Young. 1989. Muscle and meat biochemistry. Academic Press, San Diego.

- Petrova, Y., V. Banskalieva, and V. Dimov. 1994. Effect of feeding on distribution of fatty acid at Sn-2 position in triacylglycerols of different adipose tissues in lambs. *Small Ruminant Research*. 13: 263-267.
- Ponnampalam, E.N., A.J. Sinclair, A.R. Egan, S.J. Blakeley, and B.J. Leury. 2001. Effect of diets containing n-3 fatty acids on muscle long-chain n-3 fatty acid content in lambs fed low-and medium-quality roughage diets. *J. Anim Sci*. 79: 698-706.
- Poulson, C.S., T.R. Dhiman, A.L. Ure. D. Cornforth, and K.C. Olson. 2004. Conjugated linoleic acid content of beef from cattle fed diets containing high grain, CLA, or raised on forages. *Live. Prod. Sci*. 91: 117-128.
- Priolo, A., A. Lanza, V. Galofaro, V. Fasone, and A. Bella. 2003. Partially or totally replacing soybean meal and maize by chickpeas in lamb diets: intramuscular fatty acid composition. *Anim. Feed Sci. and Technol*. 108: 215-221.
- Punia, B.S., and D.D. Sharma. 1990. Influence of dietary energy on ruminal VFA production rate in buffaloes and cattle. *Indian J. Anim. Sci*. 60: 888-892.
- Punia, B.S., S. Singha, and S. Singh. 2001. Buffalo calf feeding and management. *Buffalo Bull*. 20: 3-11.
- Raes, K., A. Balcaen, P. Dirinck, A. De Winne, E. Claeys, and D. Demeyer. 2003. Meat quality, fatty acid composition and flavour analysis in Belgian retail beef. *Meat Sci*. 65: 1237-1246.
- Raes, K., S. De Smet, and D. Demeyer. 2004. Effect of dietary fatty acids on incorporation of long chain polyunsaturated fatty acids and conjugated linoleic acid in lamb, beef and pork meat: a review. *Animal Feed Sci and Techno*. 113: 119-221.
- Rajendran T., A.S.R. Anjaneyulu, and N. Kondaiah. 2006. Quality and shelf life evaluation of emulsion and restructured buffalo meat nuggets at cold storage (4±1°C). *Meat Sci*. 72: 373-379.
- Rathina R.K., R. Jagannatha, D. Narasimha, and N.S. Mahendrakar. 2000. Influence of direct and delayed chilling of excised female buffalo muscles on their textural quality. *Meat Sci*. 56: 95-99.

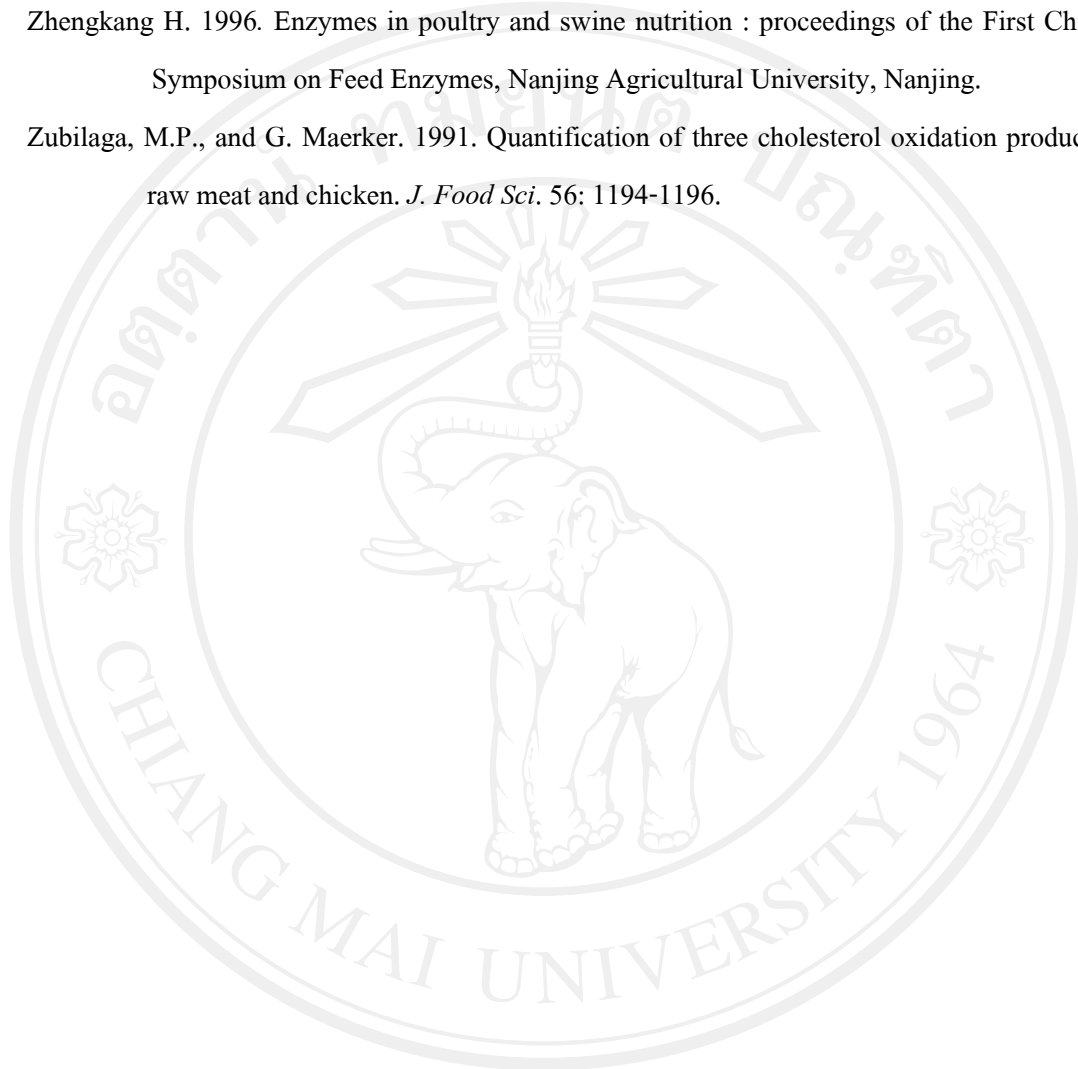
- Realini, C.E., S.K. Duckett, G.W. Brito, M. Dalla Rizza, and D. De Mattos. 2004. Effect of pasture vs. concentrate feeding with or without antioxidants on carcass characteristics, fatty acid composition and quality of Uruguayan beef. *Meat Sci.* 66: 567-577.
- Rocha, L.R. 2001. Buffalo production systems in the America. pp: 74-86. In: Proceedings of the Sixth World Buffalo Congress. Maracaibo, Venezuela.
- Rode, L.M., D.C. Weakly, and L.D. Satter. 1985. Effect of forage amount and particle size in diets of lactating dairy cows on size of digestion and microbial protein synthesis. *Can. J. Anim. Sci.* 65: 101.
- Romita, A., S. Gigli, A. Borghese, and A. di Giacomo. 1982. Water buffaloes and Friesian bovine males performances at different ages. I° - In vivo and at slaughtering characteristics. Atti II° Convegno Internazionale sull'Allevamento Bufalino nel Mondo, Caserta, Italia, Sett. 29-Ott. 2: 573-592.
- Rompala, R.E., S.D.M. Jones, J.G. Buchanan-Smith, and H.S. Bayley. 1985. Feedlot performance and composition of gain in late-maturing steers exhibiting normal and compensatory growth. *J. Anim. Sci.* 61: 637-646.
- Rossell, J.B. 1994. Measurement of rancidity. pp. 152-174. In: J.C. Allen and R.J. Hamilton (Eds.), *Rancidity in Foods*. Chapman & Hall, London, England.
- Rule, D.C., K.S. Broughton, S.M. Shellito and G. Maiorano. 2002. Comparison of muscle fatty acid profiles and cholesterol concentrations of bison, beef cattle, elk, and chicken, *J. Anim. Sci.* 80: 1202-1211.
- Sahoo, J., and A.S.R. Anjaneyulu. 1997. Quality of ground buffalo meat by preblending with sodium ascorbate. *Meat Sci.* 46(3): 237-247.
- Santos-Silva, J., R.J.B. Bessa, and F. Santos-Silva. 2002. Effect of genotype, feeding system and slaughter weight on the quality of light lambs II. Fatty acid composition of meat. *Lives. Prod. Sci.* 77: 187-194.
- Santos-Silva, J., R.J.B. Bessa, and I.A. Mendes. 2003. The effect of supplementation with expanded sunflower seed on carcass and meat quality of lambs raised on pasture. *Meat Sci.* 65: 1301-1308.
- SAS. 1996. SAS User's Guide. Statistics. SAS. Inst., Inc., Cary. NC. USA.

- Schmid, A., M. Collomb, R. Sieber, and G. Bee. 2006. Conjugated linoleic acid in meat and meat products: a review. *Meat Sci.* 73: 29-41.
- Scollan, N.D., M. Enser, S. Gulati, R.I. Richardson, and J.D. Wood. 2003. Effect of including a ruminally protected lipid supplement in the diet on the fatty acid composition of beef muscle in Charolais steers. *British Journal of Nutrition.* 90: 709-716.
- Sekhon, K.S., and A.S. Bawa. 1996. Effect of muscle-type, stage of maturity and level of nutrition on the quality of meat from male buffalo calves. *Food Research International.* 29: 77-783.
- Sengar, S.S., D.C. Joshi, V. Lakshmanan, and A.S.R. Anjaneyulu. 1986. Effect of levels of dietary protein on growth, nutrient utilization and carcass characteristics of male buffalo calves. *Buffalo Bull.* 5: 80-85.
- Sethi, R.K., 2003. Improving riverine and swamp buffaloes through breeding. pp: 51-60. In: Proc. of the Fourth Asian Buffalo Congress, New Delhi, India, 25 to 28 Feb.
- Shackelford, S.D., T.L. Wheeler, and M. Kohmaraie. 1995. Relationship between shear force and trained sensory panel tenderness ratings of 10 major muscles from *Bos indicus* and *Bos taurus* cattle. *J. Anim. Sci.* 73: 3333-3340.
- Shantha, N.C., A.D. Crum, and E.A. Decker. 1994. Evaluation of conjugated linoleic-acid concentrations in cooked beef. *J. Agri. Food Chem.* 4: 1757-1760.
- Sharma, S.K., S.C. Gupta, M. Wadhwa, and M.P.S. Bakshi. 2005. Effect of roughage to concentrate ratio on buffalo meat production. *Bubalus Bubalis.* 1: 44-51.
- Singh, R., S. Kishan, and J.J. Kishan. 2003. Comparative efficiency of nutrient utilization in buffalo, Haryana and cross-bred calves fed cereal free ration. *Indian J. Anim. Nutr.* 20: 6-10.
- Sirri, F., N. Tallarico, A. Meluzzi, and A. Franchini. 2003. Fatty acid composition and productive traits of broiler fed diets containing conjugated linoleic acid. *Poultry Sci.* 82: 1356-1361.
- Skunmun, P. 2000. The current status of buffalo production in Thailand. pp: 99-104. In: Proc. of the Third Asian Buffalo Congress, Kandy, Sri Lanka, 27 to 31 Mar.
- Smith, G.C., K.E. Belk, J.N. Sofos, J.D. Tatum, and S.N. Williams. 2000. Economic implications of improved color stability in beef. pp: 397-426. In: E.A. Decker, C. Faustman, and

- C.J. Lopez-Bote (Eds.). *Antioxidants in Muscle Foods: Nutritional Strategies to Improve Quality*. New York: Wiley-Interscience.
- Sonon, R.N., D.C. Beitz, A.H. Trenkle, J.R. Russell, and R. Rosemann. 2004. Conjugated linoleic acid (CLA) concentration in beef tissues from cattle finished on pasture initially with limited grain. *J. Anim. Sci.* 79: 134.
- Spanghero, M., L. Gracco, R. Valusso, and E. Piasentier. 2004. In vivo performance, slaughtering traits and meat quality of bovine (Italian Simmental) and buffalo (Italian Meaditerranean) bulls. *Livest. Prod. Sci.* 91: 129-141.
- Stasiniewicz, T., J. Strzetelski, J. Kowalczyk, S. Osieglowski, and H. Pustkowiak. 2000. Performance and meat quality of fattening bulls fed with rapeseed oil cake or linseed. *J. Anim. and Feed Sci.* 9: 283-296.
- Steen, R.W.J., and D.J. Kilpatrick. 2000. The effects of the ratio of grass silage to concentrates in the diet and restricted dry matter intake on the performance and carcass composition of beef cattle. *Livest. Prod. Sci.* 62: 181-192.
- Strzetelski, J., J. Kowalczyk, S. Osieglowski, T. Stasiniewicz, E. Lipiarska, and H. Pustkowiak. 2001. Fattening bulls on maize silage and concentrate supplemented with vegetable oils. *J. Anim. Feed Sci.* 10: 259-271.
- Suthikrai, W. 2002. Buffalo production in Thailand. pp: 528-531. In: Proc. of the First Buffalo Symposium of the Americas, Estacao das Docas-Belém-Parà-Brazil, 01 to 08 Sept.
- Symczyk, B., P.M. Pisulewski, W. Szczurek, and P. Hanczakowski. 2001. Effects of conjugated linoleic acid on growth performance, feed conversion efficiency, and subsequence carcass quality in broiler chickens. *British J. of Nutri.* 85: 465-473.
- Szumacher-Strabel, M., A. Potkanski, A. Cieslak, J. Kowalczyk, and M. Czauderna. 2001. The effects of different amounts and types of fat on the level of conjugated linoleic acid in the meat and milk of sheep. *J. Anim. Feed Sci.* 10: 103-108.
- Tanaka, K. 2005. Occurrence of conjugated linoleic acid in ruminant products and its physiological functions. *J. Anim. Sci.* 76: 291-303.
- Tateo, A., P. De Palo, N.C. Quaglia, and P. Centoducati. 2007. Some qualitative and chromatic aspects of thawed buffalo (*Bubalus bubalis*) meat. *Meat Sci.* 76: 352-358.

- Torrescano, G., A. Sanchez-Escalante, B. Gimenez, P. Roncales, and J.A. Beltran. 2003. Shear values of raw samples of 14 bovine muscles and their relation to muscle collagen characteristics. *Meat Sci.* 64: 85-91.
- United States Department of Agriculture (USDA). 1996. *Technical Bulletin, number 8*. USDA, New York.
- Valin, C., A. Pinkas, H. Dragnev, S. Boikovski, and D. Polikronov. 1984. Comparative study of buffalo meat and beef. *Meat Sci.*, 10 (10): 69-84.
- Van Soest, P.J. 1994. *Nutritional Ecology of the Ruminant (2nd ed.)*. Ithaca, NY: Cornell University Press.
- Varnam, A.H., and J.P. Sutherland. 1995. Meat and meat product. technology, chemistry and microbiology. Chapman and Hall, London. Vol. 3: 417p.
- Vatansever, L., E. Kurt, M. Enser, G.R. Nute, N.D. Scollan, and J.D. Wood. 2000. Shelf life and eating quality of beef from cattle of different breeds given diets differing in n-3 polyunsaturated fatty acid composition. *Anim. Sci.* 71: 471-482.
- Visonneau, S., A. Cesano, S.A. Tepper, J.A. Scimeca, D. Santali, and D. Kritchevsky. 1997. Conjugated linoleic acid suppresses the growth of human breast adenocarcinoma cells in SCID mice. *Anticancer Res.* 17: 969-974.
- Wachira, A.M., L.A. Sinclair, R.C. Wilkinson, M. Enser, J.D. Wood, and A.V. Fisher. 2002. Effects of dietary fat source and breed on the carcass composition, n-3 polyunsaturated fatty acid and conjugated linoleic acid content of sheep meat and adipose tissue. *British J. Nutri.* 88: 697-709.
- Wanapat, M. 1990. Nutritional aspects of ruminant production in southeast asia with special reference to Thailand. Funny press. Ltd. Bangkok.
- Wanapat, M. and C. Wachirapakorn. 1990. Utilization of roughage and concentrate by feedlot swamp buffaloes (*Bubalus bubalis*). *Asian-Australian J. Anim. Sci.* 3: 195-204.
- Wood, J.D., and M. Enser. 1997. Factors influencing fatty acids in meat and the role of antioxidants in improving meat quality. *The British Journal of Nutrition.* 78: 549-560.
- Yang, A., M.C. Lanari, M. Brewster, and R.K. Tume. 2002. Lipid stability and meat colour of beef from pasture and grain-fed cattle with or without vitamin E supplement. *Meat Sci.* 60: 41-50.

- Young, A.W. and R.G. Kauffman. 1978. Evaluation of beef from steers fed grain, corn silage or haylage-corn silage diets. *J. Anim. Sci.* 46: 41-49.
- Zhengkang H. 1996. Enzymes in poultry and swine nutrition : proceedings of the First Chinese Symposium on Feed Enzymes, Nanjing Agricultural University, Nanjing.
- Zubilaga, M.P., and G. Maerker. 1991. Quantification of three cholesterol oxidation products in raw meat and chicken. *J. Food Sci.* 56: 1194-1196.



ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่
Copyright© by Chiang Mai University
All rights reserved