

BEEF FROM ARGENTINE GRASS PRODUCTION SYSTEMS

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Beef is essentially an important source of proteins with essential amino acids, the best source of iron vitamins B12 and PUFA, etc. Beef from grass systems has also other benefic characteristics related to the effects of the dietary grass components in its composition.

Consumer concern for the presence of different kind of meat residues as pesticides, anabolics, β -agonists, and dioxins, etc. and diseases as the BSE found especially in intensive systems of beef production, is increasing. Topics as animal welfare and ambient contamination are also growing in different areas of the public opinion and in the next years will also affect meat consumption. Beef from natural grass systems, with animals grassing freely, present usually very low levels of contamination from agrochemical or different drugs as hormones or anabolics. The no use of industrial residues avoids the presence of unwanted contaminants.

The beef consumption was also affect for nutritional reasons due to the apparent relationships between the intake of red meat and cardiovascular diseases and same types of cancer. The presence of saturated fat and cholesterol are the principal factors that limit the amounts of red meat recommended by nutritionist and physicians. Grass beef has less fat and cholesterol but more PUFA compared with grain feed beef and then is more acceptable as a part of a healthy diet. The grass beef also has more omega 3 fatty acids metabolized from the linolenic acid (18:3 omega 3) present in grass lipids. Natural antioxidants and anticancerigens like Vit E and β -carotene present in grass also are deposited in the grass beef. Linoleic acid isomers (CLA) from the rumen biohydrogenation process with anticancerigen properties are also present in grass beef in significant quantities. Several researches from different parts of the World have confirm all of this nutritional advantages of grass beef compared with grain beef showing clearly the difference between the grass vs the grain beef systems. Japanese physicians (Okuyama & Ikemoto, 1999) recommend increasing the proportion of grass in cattle diets as a mean of restore, in the Japan population, the ratio omega 6/omega 3 to previous healthy values. English researches remark the healthy characteristics of this type of beef and recent epidemiological studies show that lean beef decreases the man serum cholesterol.

Grass beef has very distinguishes characteristics and has all the possibilities to be accepted for nutritionists, physicians and consumers. All of this is valid if we keep or/and increase, as countries leaders in grass beef production as Australia and New Zealand, the quality of our grass beef by the excellence in ante and post-mortem technologies. The goal must be tender, juicy, and tasteful beef from cattle growing freely in fertile lands. Several studies made in Argentina (García et al. 1992, 1993, 1994, 1995, 1996) have shown the effects of the diet grass or grain or different strategies of supplementation in the quantity and quality of intramuscular fat, in the content of cholesterol. The PUFA are altered in quality and quantity according to dietary grass or grain and the ratio 18:2 omega 6/18:3 omega 3 is a good indicator of the diet used (García et a. 1999). Increasing this ratio means a steadily increases in all the ratios omega 6/omega 3 in other biologically important PUFA as the ratio 20:4 n-6/20:5 n-3 and 20:4 n-6/ 22:5 n-3.

REFERENCES

- García, P.T. & J. J. Casal. Intramuscular vs dissected body fats in grass fed steers. Proc. 38th International Congress Meat Science & Technology, 2:57-60 (1992).
- García, P.T. & J. J. Casal. Lipids in Longissimus muscles from grass or grain fed steers. Proc. 38th International Congress Meat Science & Technology, 2: 53-56 (1992).
- García, P.T. & Castro Almeyra, A. Lipids in Argentine beef cuts. Proc. 38th International Congress Meat Science & Technology, 2:65-68 (1992).
- García, P.T. & J. J. Casal. Argentine beef lipids. *Fleischwirtschaft* 73:755-758 (1993).
- García, P. T., Margaría, C. A., Pensel, N.A. & J. J. Casal. Effect of energy diet on steer muscle lipids. Proc. 40th International Congress on Meat Science & Technology, S-IVA.29 (1994).
- García, P.T., Margaría, C.A. & Pensel, N.A. . Intramuscular fat and cholesterol in beef and poultry meats. Proc. 40th International Congress on Meat Science & Technology, W-1.05 (1994).
- García, P. T., Casal, J.J., Pensel, N. A. & C. A. Margaría. Lipids in lean beef. Proc. 41st International Congress of Meat Science & Technology, pp. 58-59 (1995).
- García, P.T., Casal, J. J., Pensel, N. A. & C. A. Margaría. Meat consumption and serum lipids and lipoproteins in man. ECAL Group. Proc. 41st International Congress of Meat Science & Technology, pp. 25-26 (1995).
- García, P. T., Casal, J. J., Pensel, N. A. & C. A. Margaría. Cholesterol content in different meats. Proc. 41st International Congress of Meat Science & Technology, pp. 54-55 (1995).
- García, P. T., Pensel, N. A., Margaría, C. A., Rosso, O. & Gómez, P. Intramuscular lipids in grass-fed steers under different grain supplementation. Proc. 42nd International Congress on Meat Science & Technology, pp. 206-207 (1996).
- García, P. T. & Pensel, N. A. Lipids in veal muscles. Proc. 42nd International Congress on Meat Science & Technology, pp. 210-211 (1996).
- García, P.T., Pensel, N.A., Margaría, C.A., Rosso, O. & Machado, C. Intramuscular fat, cholesterol and 18:2 n-6/n-3 ratio in total lipids of two frame steers under different dietary regimen. Proc. 45th International Congress on Meat Science & Technology. Yokohama Japón (1999).
- Okuyama, H. & Ikemoto, A. Needs to modify the fatty acid composition of meats for human health. Proc. 45th International Congress on Meat Science & Technology. Yokohama, Japan (1999).