Determination of residues of anabolic agents in red meat and meat products using HPLC and ELISA

Kadim I T, Mahgoub O and Al-Maqbali R
Sultan Qaboos University, Oman

Safety of meat and meat products is a multidimensional concept. There are reasons to believe, there is an information asymmetry between consumers, producers and safety authorities along the supply chain. Within this framework, this research aimed to detect some anabolic (estrogen, testosterone and trenbolone) residues in meat and meat products using ELISA and HPLC. Anabolic agents are widely used as growth promoters in livestock production. The administration of such chemicals to meat producing animals may lead to deposition of residual materials in meat and consequently presents a potential human health hazard. A total of 81 meat samples (beef, buffalo and sheep) representing fresh, frozen, minced, sausages, burger and mortadella were obtained. Estrogen was detected in all meat samples (100%); trenbolone was not detected in any sample (0%); and testosterone was detected in 24 red meat samples (30%) using ELISA and HPLC. There was a large variation in anabolic concentrations between meat and meat product samples suggesting that larger number of meat samples may be required for more accurate risk assessment. The level of estrogen and testosterone in considerable number of samples was over acceptable limits. The ELISA and HPLC tests were shown to be effective in measuring anabolic compounds in meat and meat products. The presence of anabolic agents in meat and meat products must be strictly monitored.

Biography
Kadim I T has completed his PhD in Meat Science from Massey University, New Zealand. He has more than 30 years of progressive experience as an academic, consultant and researcher. He has a professional history, as a faculty member at 3 institutes (Massey University; New Zealand; Sultan Qaboos University, Sultanate of Oman; and Basrah University, Iraq). He has published more than 100 papers in reputed journals and has been serving as an Editorial Board Member of 3 journals.

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