

10th Global Summit on

Food Safety, Processing & Technology

December 05-07, 2016 San Antonio, USA

Drug residues in foods of animal origin: Perceptions and concerns of consumers in northwestern Ethiopia

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Statement of the Problem: Veterinary drugs play a crucial role in improving the yield of food producing animals. Yet, these drugs get the chance to distribute in most tissues of animals, making the presence of drug residues in the derived food products inevitable. Various health concerns arise as a result of drug residues that are above permissible amounts. In this regard, the perceptions and concerns of consumers will have significant impact on their consumption of animal products. This study is intended to assess consumer's perception and concern towards veterinary drug residues in animal derived foodstuffs they use.

Methodology: A cross-sectional study was conducted using self-administered structured questionnaire on a convenient sample of academic staff at the University of Gondar, northwestern Ethiopia.

Results: Majority of the 65 respondents who were included in the analysis (60, 92.3%) were male who reported consuming animal products and 39 (60.0%) were younger than 30 year old. Less than half (25, 38.5%) reported experiencing health problems as a result of consumption of animal products. 34 (52.3%) respondents had moderate to very strong level of concern about animal drug residues. However, the highest number of respondents expressed concerns about microbiological contamination (56, 86.2%) and pesticide residues (46, 70.8%) in animal products. The main reasons for concern were potential toxicities (27, 41.5%), antimicrobial resistance (25, 38.5%) and potential risk of cancer (23, 35.3%). Respondents have reported changing their animal product consumption behaviors as a result of their concerns. Spearman correlation analysis showed that concerns were significantly associated with reported changes in behavior ($p < 0.01$).

Conclusion & Significance: Consumers have concerns about the health effects of veterinary drug residues and other contaminants to the extent that they change their behavior. Studies on the extent of the problem in animal products and effective regulatory interventions are recommended.

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Effects of whey protein isolate based coating enriched with *Zingiber officinale* and *Matricaria recutita* essential oils on color parameters of rainbow trout

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The present study investigated the effect of whey protein isolate (WPI) coating enriched with essential oils (ginger and chamomile) on color parameters of rainbow trout (*Oncorhynchus mykiss*) fillets in refrigerated storage (4 °C). Fish samples were divided into six groups; C1 (control, without edible films), C2 (whey protein isolate coating solution without essential oils), C3 (whey protein isolate coating enriched with 0.2% [v/v] ginger EO added), C4 (whey protein isolate coating enriched with 0.2% [v/v] chamomile EO added), C5 (whey protein isolate coating enriched with 0.2% [v/v] combine essential oils ginger and chamomile) and C6 (whey protein isolate coating enriched with 0.4% [v/v] combine essential oils ginger and chamomile). The colour parameters for the colour change were quantified by the Hunter L (whiteness/darkness), a (redness/greenness) and b (yellowness/blueness) system. There were significant differences ($p < 0.05$) for L*, a* and b* of rainbow trout over the storage periods.

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