

MOLD CONTAMINATION AND TOTAL AFLATOXINS IN CHILLED MUSCLE AND EDIBLE OFFAL OF CAMEL (*Camelus dromedarius*): A STUDY OF THEIR HUMAN DIETARY INTAKE, AND HEALTH RISK ASSESSMENT

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ABSTRACT

Camel meat and edible offal are among the emerging sources of animal-derived protein worldwide, particularly in Saudi Arabia. The objectives of the present study were first to investigate the mold contamination (count and identification) of the camel meat (round muscle), and edible offal (liver, kidney, neck muscles, and masseter muscles). Second, to estimate the total aflatoxins levels (AFTs) by the use of VICAM AflaTest. Third, to calculate the dietary intakes and potential health risks of the total AFTs among the Saudi population. The public health significance of the isolated mold genera and AFTs was additionally discussed. Mycological examination of the examined samples revealed mold contamination of the examined samples at 30% (muscle), 40% (liver), 30% (kidney), 70% (neck muscles), and 70% (masseter muscles). Identification of the isolated molds revealed detection of *Aspergillus* spp., *Penicillium* spp., *Alternaria* spp., *Cladosporium* spp., *Mucor* spp. and *Fusarium* spp. at variable rates. In addition, 25%, 25%, 45%, and 25% of the examined camel liver, kidney, neck muscles, and masseter muscles, respectively were found contaminated with AFTs. The liver had significantly the highest average residual contents of AFTs (5.80 ± 0.48 $\mu\text{g}/\text{kg}$). Calculation of the daily intake and margin of exposure of AFTs due to consumption of camel's edible offal revealed a high potential cancer risk. Therefore, it is highly recommended to reduce the daily intake of the camel's edible offal among Saudi consumers. To the best of our knowledge, this is the first report to investigate the mold contamination and aflatoxin content in the camel edible offal.

Key words: Camel, edible offal, mold, risk assessment, total aflatoxin