Isolation, Identification and Mycotoxigenic Activities of Some Mycoflora of Sun-dried Meat

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Abstract

Sun-dried meat (also known locally as 'kundi' or 'tinko') is usually consumed in Africa for its supply of protein and other nutrients needed to sustain human and animal life. The meat is used in preparing and cooking various types of delicious soups and stews consumed locally. Meat is usually preserved traditionally by sun-drying to prevent the spoilage and to make it available for later use while retaining its nutritive value. Meat is preserved in Nigeria by sun-drying after cooking or smoking. The meat is usually exposed to microbial contamination at the time of processing, storage and distribution. Environmental factors, chemical composition and specific growth requirements usually determine the type of microorganisms in the contaminated meat. Some of these factors and chemical composition include: water-activity/water content, proteins, peptides, sugars, aminoacids, minerals and vitamins. This study was aimed at isolating and identifying some mycoflora species associated with sun-dried meat contamination in Ibadan, Nigeria. Samples of the meat were randomly purchased from selected markets. The moisture content of the samples were determined. The samples were observed to be contaminated with mycoflora species identified as Aspergillus sp., Penicillium sp., Sporotrichum sp., Picha sp and Saccaromyces sp.. Aspergillus species had the highest frequency of occurrence among the isolated mycoflora. Mycotoxin detection was carried out using the enzyme-linked immunosorbent serological assay (ELISA) technique. Some of the isolated species were mycotoxigenic producing aflatoxin at various levels. Results from this study may be used to develop and establish public health standards as consumption of this meat exposes the consumers to the probable toxic metabolites produced by the mycoflora. This study highlights some recommendations for policy making.

Keywords: ELISA, mycoflora, mycotoxin, sun-dried meat

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