



# International Conference on Toxicology and Risk Assessment

March 20-21, 2019 Frankfurt, Germany

## Contribution of Toxicological Assessment of Aflatoxins in Oleaginous Meant for Human Consumption in Cameroon

Evelyne Nguégwouo<sup>1,2\*</sup>, Alex Tchuenchieu<sup>1</sup>, Hippolyte Mouafo Tene<sup>1</sup>, Zita Youmbi Yepie<sup>5</sup>, Abel Wade<sup>4</sup>, Gabriel Medoua Nama<sup>1</sup>, Elie Fokou<sup>2</sup> and Marcel Evrard Nguidjoe<sup>3</sup>

<sup>1</sup>Centre for Food and Nutrition Research, IMPM, Cameroon

<sup>2</sup>Department of Biochemistry, University of Yaoundé I, Cameroon

<sup>3</sup>Faculty of Medicine and Biomedical Sciences of the University of Yaoundé I, Cameroon

<sup>4</sup>National Veterinary Laboratory, Annex of Yaounde, Ministry of Livestock, Fisheries and Animal Industries, Cameroon

<sup>5</sup>Regional Center for Special Education in Agriculture (CRESA) Forest - Wood, Faculty of Agricultural Sciences, University of Dschang, Cameroon

Aflatoxins are highly carcinogenic substances produced by a fungus called *Aspergillus*. They are associated with many public health and food security issues. This study aimed at contributing of toxicological assessment of total aflatoxins (B<sub>1</sub>, B<sub>2</sub>, G<sub>1</sub> and G<sub>2</sub>) in some oleaginous seeds such as peanuts, pistachios and soybeans consumed in Yaounde's town, the politic capital of Cameroon. A survey on 120 adult participants of the population allowed us to highlight the daily quantities of oleaginous seeds consumed, as well as the state of their knowledge on mycotoxins (aflatoxins). A total of 45 oleaginous samples based on food preference were collected according to the standard procedure from different markets in the town of Yaoundé. Analysis results obtained by validated Enzyme Linked Immunosorbent Assay showed that 26%, 33% and 40% of peanuts, pistachios and soybeans samples, respectively, were contaminated with total aflatoxins (AFt), with respective averages of 7, 27 µg / kg, 7.76 µg / kg and 1.19 µg / kg. The highest levels of AFt found in these samples were 19.52 µg / kg, 23.48 µg / kg and 1.25 µg / kg, respectively. Taking into account the average body weight (60 Kg), the Probable Daily Intake (PDI) for AFt through the consumption of peanuts, pistachios and soybeans in adults were: 18.05 ng / kg body weight/day, 12.55 ng / kg body weight/day and 0.32 ng / kg body weight/day, respectively. The Margin of Exposure (MOE) to aflatoxins contamination was 9.42 for peanuts, 13.6 for pistachios and 531.2 for soybeans. The Risk of Primary Liver Cancer (RPLC) was also estimated to be 0.81; 0.56 and 0.01 cancer/year/100.000 persons respectively for the three matrices. These results suggest the need for the establishment of regular control measures for these toxins in oilseeds marketed in Cameroon.

**Keywords:** Aflatoxins, Peanuts, Pistachios, Soybeans, Exposure, Yaoundé's population, Cameroon.

### Biography:

Dr. Nguégwouo Evelyne, Ph.D in Biochemistry, speciality food Science and Nutrition at the University of Yaoundé I, Cameroon. Researcher at the Centre for Food Research and Nutrition of the Institute of Medical Research and Medicinal Plan studies/MINRESI, Cameroon. Authors of several publications in food research and toxicology. Editorial boardmember of international reputed Journals.