



Total Diet Study as a tool to assess chemical contamination of foods - application in Sub-Saharan Africa

BACKGROUND

Risk based approaches to food safety management are well accepted, yet the evidence and scientific basis to support such an approach is often lacking. This is the case for many developing countries. For example, limited information is available on the food chemical hazards which might be of concern in sub-Saharan Africa. While, the approaches used by national governments to get the required information may vary, one of those approaches promoted and endorsed by FAO/WHO is the Total diet study (TDS) approach. Indeed, TDS are considered as being the most-cost effective means of assessing the safety and nutritional quality of the diet by monitoring chemicals, such as pesticides and heavy metals, in foods to estimate dietary exposures, and to characterize associated risk to public health.

METHODOLOGY

Steps characterising a TDS include the selection of foods based on food consumption data in order to represent a typical diet as well as possible, including the preparation of food for consumption. Data from related foods are subsequently pooled before analysis.

APPLICATIONS

A well designed TDS study can serve many purposes and the resulting data may contribute to:

- The prioritization and establishment of appropriate risk management activities, such as development of food safety regulations, standards or policies,
- the identification of appropriate follow up investigations and research,
- the characterization of needs in terms of surveillance or monitoring programs
- the definition of capacity development requirements, and
- the development of appropriate risk communication, including advice to industry or consumers

Furthermore, for the international perspective a TDS at regional or national level can provide useful data to international risk assessment and regulatory bodies such as the Joint FAO/WHO Meetings on Pesticide Residues (JMPPR), the Joint FAO/WHO Expert Committee on Food Additives (JECFA) and the GEMS/Food and the Codex Alimentarius Commission.



©FAO/ Riccardo Gangale

Steps characterising a TDS include the selection of foods based on food consumption data in order to represent a typical diet as well as possible, including the preparation of food for consumption.





It is challenging for African countries to provide data to support international risk assessment and thus have their situation reflected in such assessments.

In the longer term, the implementation of periodic TDS can allow the identification of trends in chemical contamination in food and in this context may be useful as an indicator in evaluating the effectiveness of food control systems and measures to manage chemical risks in foods.

Total Diet Study in sub-Saharan Africa



A 3-year project has just started in Benin, Cameroon, Mali and Nigeria to implement a regional Total Diet Study to assess food chemical contamination of interest (e.g. mycotoxins, heavy metals, persistent organic pollutants, pesticides residues and veterinary drugs) their national diets. The project is funded by the Standards and Trade Development Facility (STDF) and will be managed by FAO in close collaboration with the Centre Pasteur Cameroon and WHO.

Overall, this project will allow the assessment of the chemical safety of the diet consumed by populations in the four participating countries. The project will provide baseline data to support the development of food safety policies to support management of chemical hazards in foods.

Expected benefits

- Capacity developed to conduct TDS
- Evidence based overview of chemical contamination of food in 4 countries
- Risk assessment developed based on local data
- Knowledge sharing and risk communication based on country specific data
- Evidence informed decision making and risk management

GLOBAL BENEFITS

It is challenging for African countries to provide data to support international risk assessment and thus have their situation reflected in such assessments. This project will enable four African countries to valuably contribute and provide credible data for risk assessments and standard setting processes at international level.

FOR MORE INFORMATION CONTACT:

Food-Quality@fao.org

www.fao.org/food/food-safety-quality/home-page/en/