

Caliviz: the first user-friendly tool for visualizing French total diet study data

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The French Total Diet Studies (TDS) conducted by ANSES aims to monitor the exposure of several population groups to hundreds of chemicals through their food consumption. The second edition of TDS pointed out for example a dozen substances (including dioxins, PCBs, acrylamide, lead and arsenic) for which a health risk due to food contamination could not be excluded. In order to inform consumers more comprehensively about this dietary exposure and to improve risk-based official controls of food by authorities, there was a need to explore easily the collected data for identifying potential problematic food/substances pairs. In this context, the Caliviz platform was developed as an open-access and open-source interactive tool to visualize all the published data from the French TDS.

Designed as a multi-tab Web App, the Caliviz platform offers multiple features to access general or detailed information collected from the second TDS. Firstly, a glossary page provides an overview of the monitored chemical contaminants as well as the potential associated health risks. Two interactives tabs offer multiple visualizations for (i) the contamination level of the different user-defined substances in the different food products and food groups and (ii) the relative contributions of the food groups to the total exposure to each substance within the adult and children populations. The users have also the possibility to adapt these visualizations depending on the assumption to deal with left-censored data (lower-bound, middle-bound or upper-bound scenarios). Finally, the platform also includes download features to easily extract data subsets associated with one or several specific food products and/or chemical contaminants.

Caliviz was developed as a generic and evolving platform, giving then possibilities to integrate other data for visualizations such as those from the new upcoming edition of the French TDS or the infant TDS assessing the exposure of children under 3 years. Available in French and English version, several additional features will also be implemented in the upcoming months, such as cartographies of the contamination levels or comparison with toxicological reference values.

Keywords: total diet study, food contamination, chemical contaminants, data visualization, dietary exposure.

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References

Anses, 2011. Second French Total Diet Study (TDS 2), ANSES Opinion and Expert report.