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## Comparison of the lipid content and the fumonisins concentration in maize genetic diversity

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In Mexico, corn is the staple food grain; per capita consumption is estimated at 800 g per day and that 70% of the population suffer from obesity and diabetes type 2. The aim of this study was to determine lipid content and fumonisin in maize genetic diversity, to avoid a potential health risk for high intake of carbohydrates and toxic substances that interfere with lipid metabolism. 25 samples were collected in three states (State of Mexico, Hidalgo and Morelos) at Central Regions in Mexico, (8) landraces were identified, (10) improved corn hybrids and (7) Bt corn, which were subjected to a lipid extraction method Golfisch, AOAC and total fumonisin by ELISA method (Ridascreen Fast Fumonisin). Chemical analysis confirmed a significant increase in total lipid content (8.075%) in Bt with respect to the non-Bt maize hybrids (5.07%). The presence of fumonisin levels was detected in 4 mg kg native and improved corn and 0.56 mg kg in Bt maize. In conclusion, the data showed an increase in total lipids in maize, which expressed a recombinant protein (Cry1Ab) and decreased levels fumonisin, regarding native and improved maize. Fumonisin levels detected may be a risk to consumer health. It is recommended to evaluate the additive effect of excess lipids and fumonisin in the diet of the Mexican population.

### Biography

Peña Betancourt S D is a Master in Science from the National Autonomous University of Mexico, clinical toxicology specialist and PhD from the University of Lyon, France. She is a full time Professor in the Agricultural and Animal Production Department at University Autonomous Metropolitan, campus Xochimilco and Head of the Laboratory of Toxicology. She has published 15 articles in national and international journals. She served as head of the research on quality safety of agricultural products Animal and Agricultural Production Department. She is a Tutor of the Master's and Doctoral programs in divers Institutions of higher education like UNAM, UAM, UAEM and UAZ.

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