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## The assessment of the exposure levels of mycotoxins among dairy cattle in the two South African provinces using HPLC (ESI)-MS/MS<sup>n</sup>

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Mycotoxins can be formed on crops in the field, during harvest, or during storage, processing, or feeding. Many different mycotoxins exist and they affect dairy cattle in many ways, the most important is perhaps immunosuppression. Symptoms of mycotoxins may be nonspecific and wide ranging which may include: reduced production, reduced feed consumption, intermittent diarrhea (sometimes with bloody or dark manure), reduced feed intake, thriftiness, rough hair coat, reduced reproductive performance including irregular oestrous cycles, embryonic mortalities. While mycotoxins can cause acute toxicity, they are more likely to cause chronic problems of increased disease and decreased milk production. Contamination of milk by aflatoxin can cause huge economic losses. Management of crops and feeds is important to reduce mycotoxin contamination. Mintek, undertakes research and development which focuses on various nanostructured materials and nano-minerals and their application in health (including diagnostics and therapeutics) and water treatment. The organization also seeks to advance the field of food security and as a result, we partner with the University of Johannesburg for the assessment exposure levels to mycotoxins among dairy cattle in the Mpumalanga and Kwa-Zulu Natal provinces using HPLC (ESI)-MS/MS<sup>n</sup>. The levels and nature of mycotoxins and some of their main metabolites in dairy feed, raw milk and urine samples collected from some dairy cattle farms are currently being assessed and will be discussed in detail. The research project aims to generate data to propose recommendation to the South African government on the threat of mycotoxins contamination to animal and human health.

### Biography

Makhapa Makhafola is currently the General Manager at Research & Development, Mintek. He worked as a Lecturer in Analytical Chemistry at Technikon Northern Gauteng (now called as Tshwane University of Technology) and University of Venda. In 2004, he was appointed as Director: Quality Assurance at Border Technikon (now called as Walter Sisulu University). He was the Director: Quality Assurance at University of Venda until he joined University of Kwa-Zulu Natal as the Director Quality Promotion & Assurance in July 2010. He served as a member of Umalusi Council and also as Chairperson of Lovedale FET College Audit Committee. He is currently the Chairperson of DST/MINTEK Nanotechnology Innovation Centre Steering Committee. He served as a member of the Higher Education Quality Assurance Manager's Forum. He completed his Post-doctoral training in Analytical Chemistry at Indiana University. He presented his research work in more than 30 international conferences and published in credible journals.

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