

# CURRENT TRENDS IN MASS SPECTROMETRY AND CHROMATOGRAPHY

September 25-26, 2017 Atlanta, USA

## The assessment of the exposure levels to 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 non-specific 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 oestrus cycles and 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. 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 of Research & Development at Mintek. He has worked as a Lecturer in Analytical Chemistry at Technikon Northern Gauteng (now called Tshwane University of Technology) and University of Venda. In 2004, he was appointed as the Director: Quality Assurance at Border Technikon (now called Walter Sisulu University). He was the Director of the Quality Assurance at the University of Venda until he joined University of Kwa-Zulu Natal as the Director Quality Promotion & Assurance Iso in 2010. He is currently the Chairperson of DST/MINTEK Nanotechnology Innovation Centre Steering Committee. He has served as a Member of Umalusi Council and as Chairperson of Lovedale FET College Audit Committee, Member of the Higher Education Quality Assurance Manager's Forum and chaired and facilitated various workshops on quality assurance in higher education, Member of the HyPlat Board and as an Academic Committee Member of QS World Ranking Universities. He did his Post-Doctoral training in Analytical Chemistry at Indiana University. He has presented his research work in more than 30 international conferences and published in credible journals.

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