



TOXINS DETECTION

Rapid detection of Aflatoxin M1 in milk

Applicant	Università degli Studi Padova
Inventors	Vamerli Teofilo, Barion Giuseppe, Tiozzo Netti Stefano
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TRL scale



What's needed for?

The present invention relates to a method and a device useful for directly and rapidly quantifying the presence in milk of Aflatoxin M1, a carcinogenic mycotoxin deriving from Aflatoxin B1. In particular conditions of humidity or high temperatures, some vegetable raw materials accumulate toxic fungi that produce a particular carcinogenic and toxic mycotoxin, called aflatoxin B1. Once ingested by dairy animals in breeding, this is converted in the liver into aflatoxin M1, which is dangerous for humans even at very low concentrations. Classical methods to quantify its presence usually require complex purification and sample preparation processes with the use of chemical solvents, extending analysis times and producing waste, while others do not offer accurate measurements. This invention has developed a spectral detection system which, through the use of a sensor, provides a very precise signal on the concentration of the toxin with rapid times (from 2 to 6 minutes) without producing waste. The tool can therefore be used directly in farms and dairy industries, being portable and compact. The analyzes may also be carried out by personnel without specific analytical chemistry skills.

Advantages

Quick and accurate analysis, Ease of use: small and portable device
Applicable directly in the stable, No operating costs, No management costs, Green methodology: it does not produce waste, It does not require qualified personnel

Applications

Raw milk control in pre-harvest (stable), Bulk milk control (Milk plant), Control on whey and milk derivatives, Preliminary control by food safety authorities (ULSS), Preliminary check by fraud prevention bodies (NAS)