

Production of the Fusarium Mycotoxin Moniliformin by *Penicillium melanoconidium* - DTU Orbit (09/11/2017)

Production of the *Fusarium* Mycotoxin Moniliformin by *Penicillium melanoconidium*

Moniliformin is a mycotoxin produced by several cereal associated Fusaria. Here, we show for the first time that moniliformin can be produced by the cereal fungus, *Penicillium melanoconidium* (4 out of 4 strains), but not in the related species in the Viridicata series. Moniliformin was detected in 10 out of 11 media: two agars and several cereal and bean types. Moniliformin was identified by a novel mixed-mode anionic exchange reversed phase chromatographic method which was coupled to both tandem mass spectrometry (MS) and high resolution MS. Mixed-mode chromatography showed superior peak shape compared to that of HILIC and less matrix interference compared to that of reversed phase chromatography, but during a large series of analyses, the column was fouled by matrix interferences. Wheat and beans were artificially infected by *P. melanoconidium* containing up to 64 and 11 mg/kg moniliformin, respectively, while penicillic acid, roquefortine C, and penitrem A levels in wheat were up to 1095, 38, and 119 mg/kg, respectively.

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