AP-13: Identification of patulin molecule produced *in vitro* by three *penicillium expansum* strains through gc-ms technique

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Objectives: Among post-harvest pathogens of apples, Penicillium expansum is considered one of themost common fungal pathogens worldwide. It is the causal agent of blue rot, the main post-harvestdisease of apples. This pathogen is also the main producer of patulin; the mycotoxin commonly found in fruit in general and apples and apple products in particular. Because of its high resistance to chemical treatment at high temperatures and its stability in acidic environments, patulin persists throughout the production chain right up to the finished product, and presents a real danger to human and animal health. The aim of this project is therefore to characterize and identify the patulin molecule produced in vitro by three strains of Penicillium expansum, isolated from apples grown in eastern Algeria, using gas chromatography-mass spectrometry.

Methods*: In vitro* patulin production was achieved by liquid fermentation on YES medium at 25°C. Liquid-liquid extraction of secondary metabolites with ethyl acetate yielded various crude extracts.

Results and discussion: Following GC-MS analysis, the presence of patulin was indicated by chromatograms appearing at the same retention time as the patulin standard. This technique also provided structural information on this mycotoxin. GC-MS results confirmed the ability of all three *Penicillium expansum* strains to produce patulin in YES liquid culture media.

Conclusion: According to these results, it was concluded that apples produced in eastern Algeria are contaminated with mycotoxigenic *Penicillium expansum* strains able to produce Patuline, which represents a real risk of mycotoxicosis caused by the ingestion of apples- based food contaminated by this mycotoxin.

Key words: *Penicillium expansum*, patulin, GC-MS, apples