

Study of volatile organic compounds emitted by mycotoxin-producing fungi in order to develop a sensor.

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Context

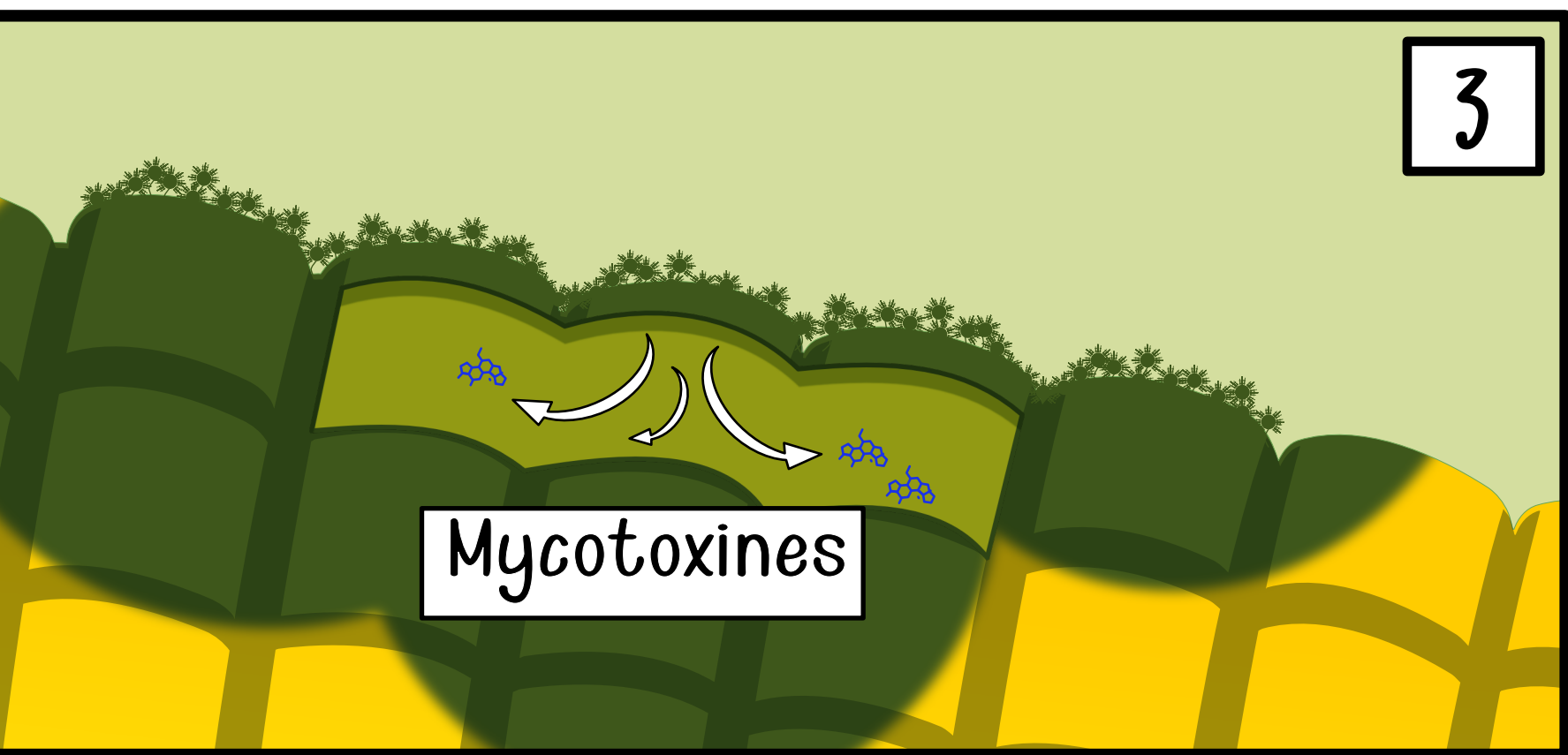
Foodstuff (corn, wheat, rice, etc.) can be contaminated by several filamentous fungal species (*Aspergillus*, *Fusarium* and *Penicillium*) in pre or post-harvest conditions.

1



Fungi grow in field or during storage. They produce secondary metabolites named mycotoxins.

2



Mycotoxines

3

4



Mycotoxins are thermoresistant, even after hot or cold treatment they are still toxic.

Mycotoxin's contamination can cause severe illnesses upon chronic exposure and can even lead to death after acute exposure.

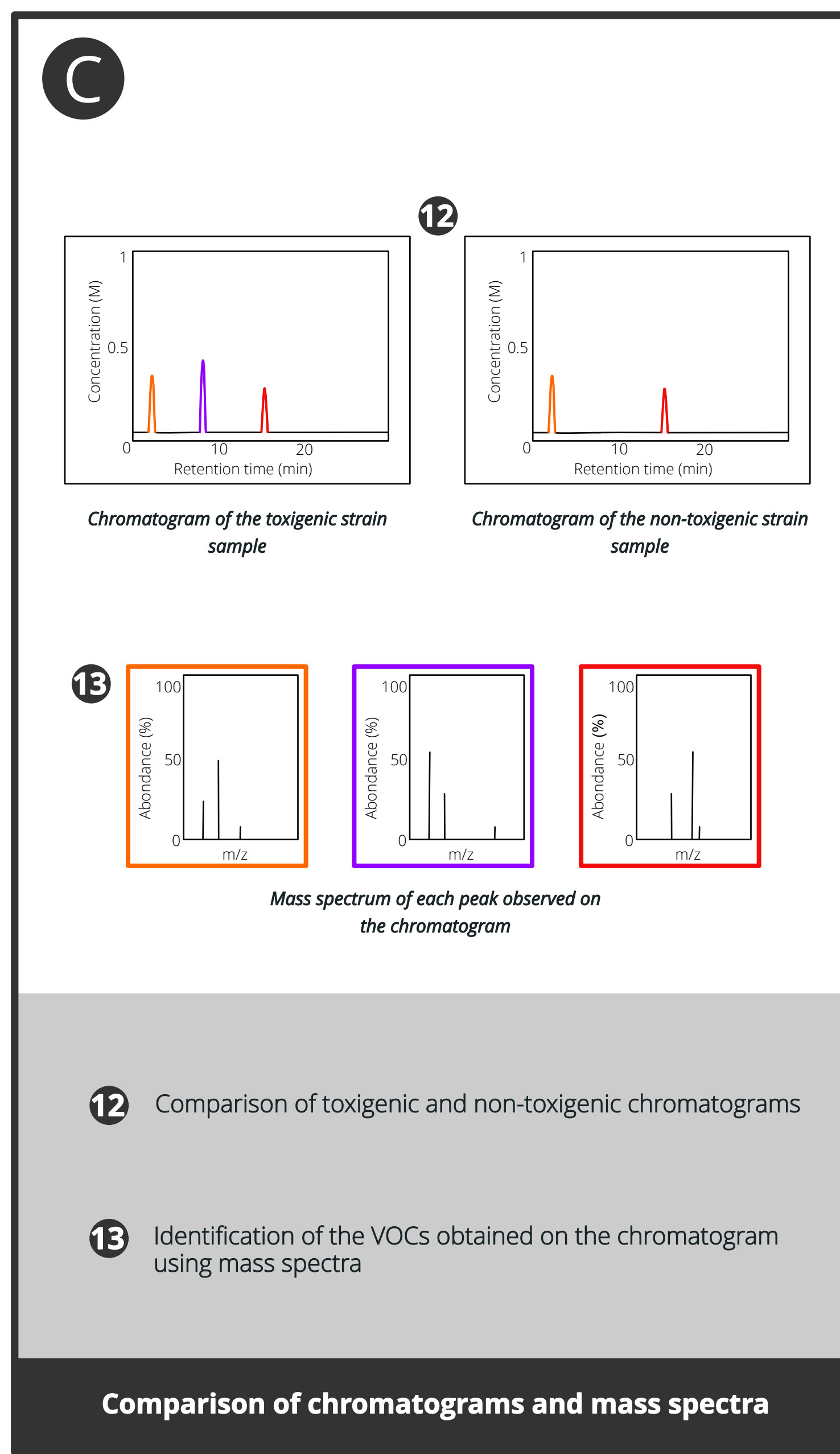
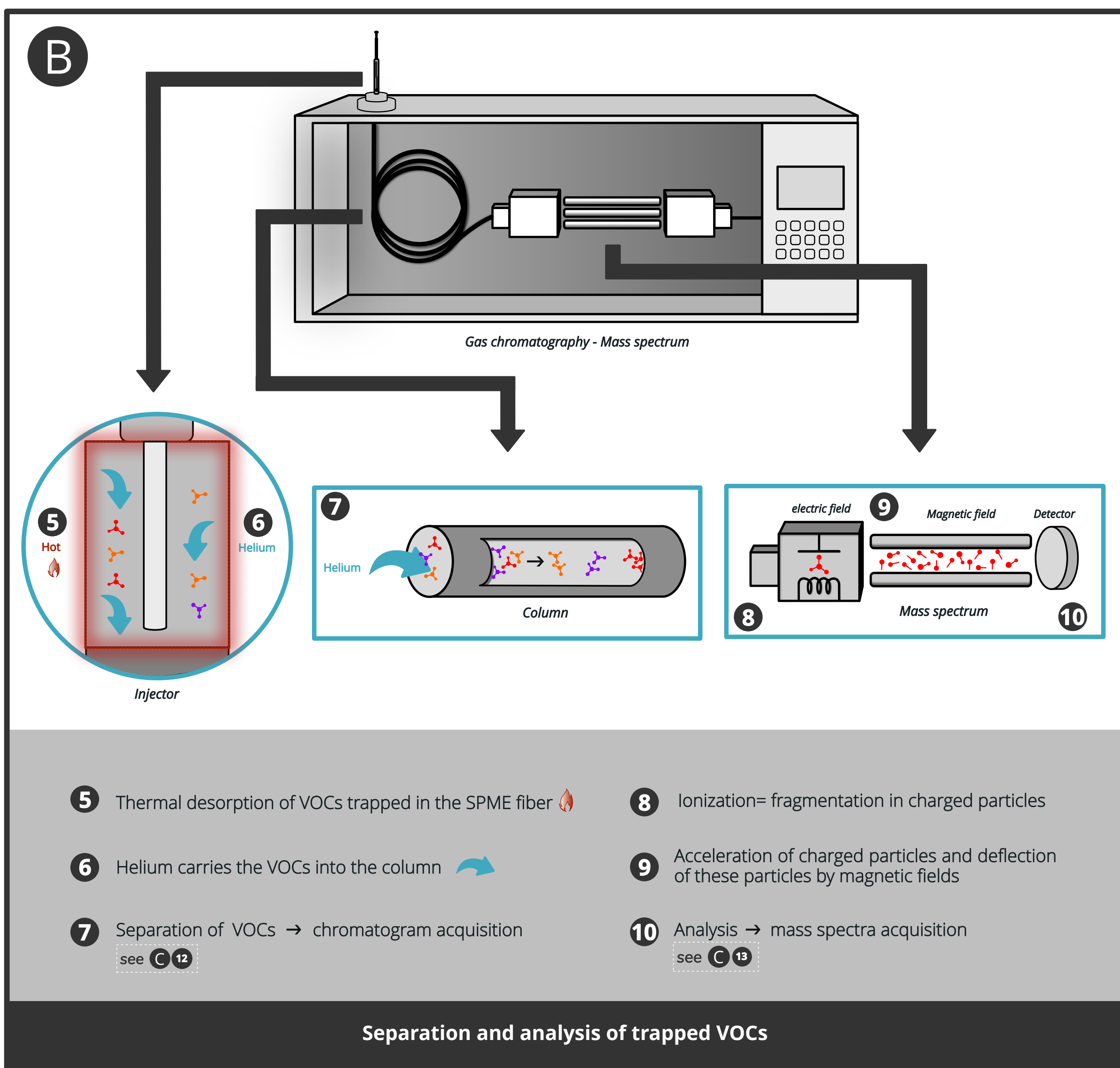
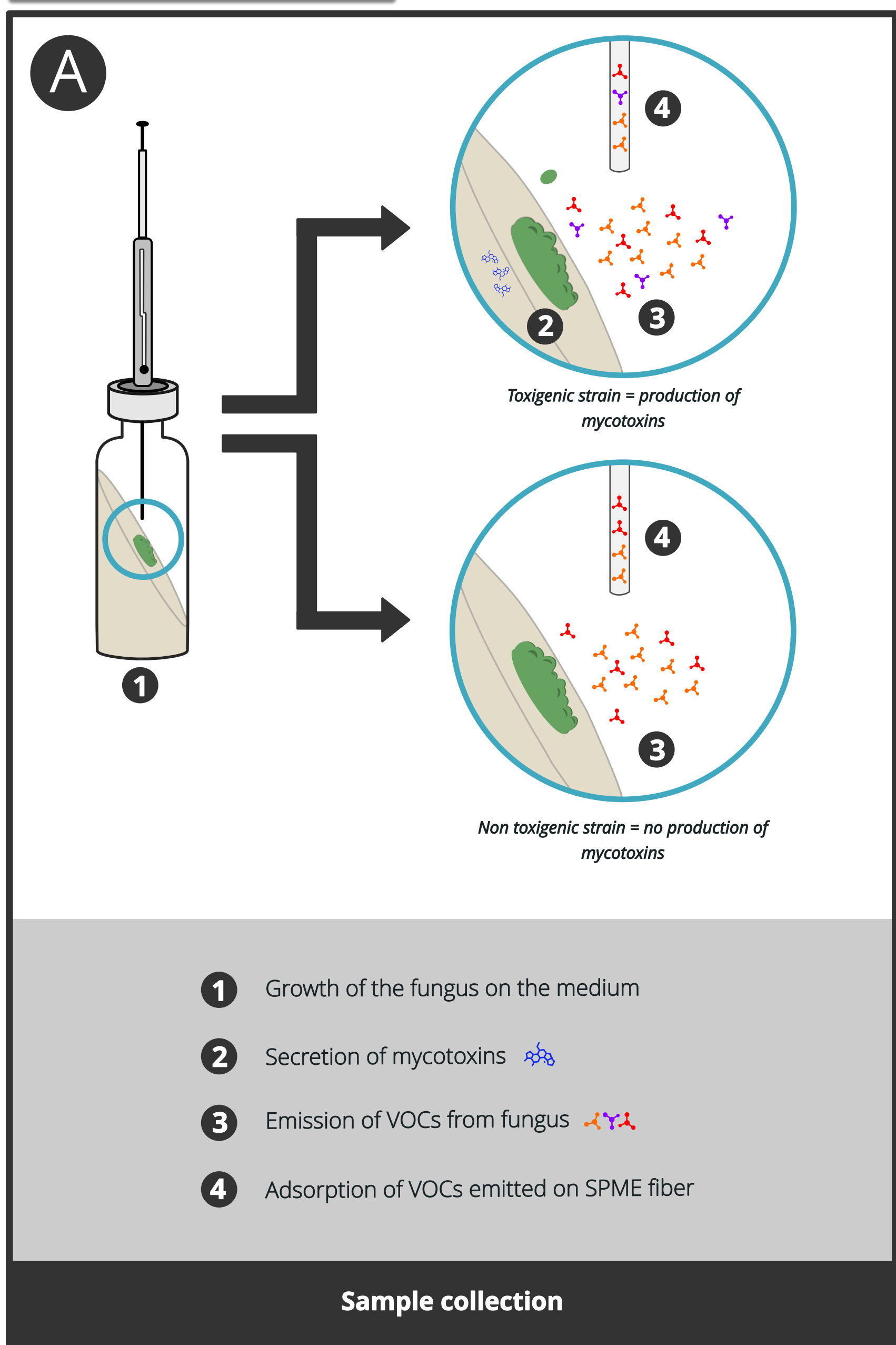


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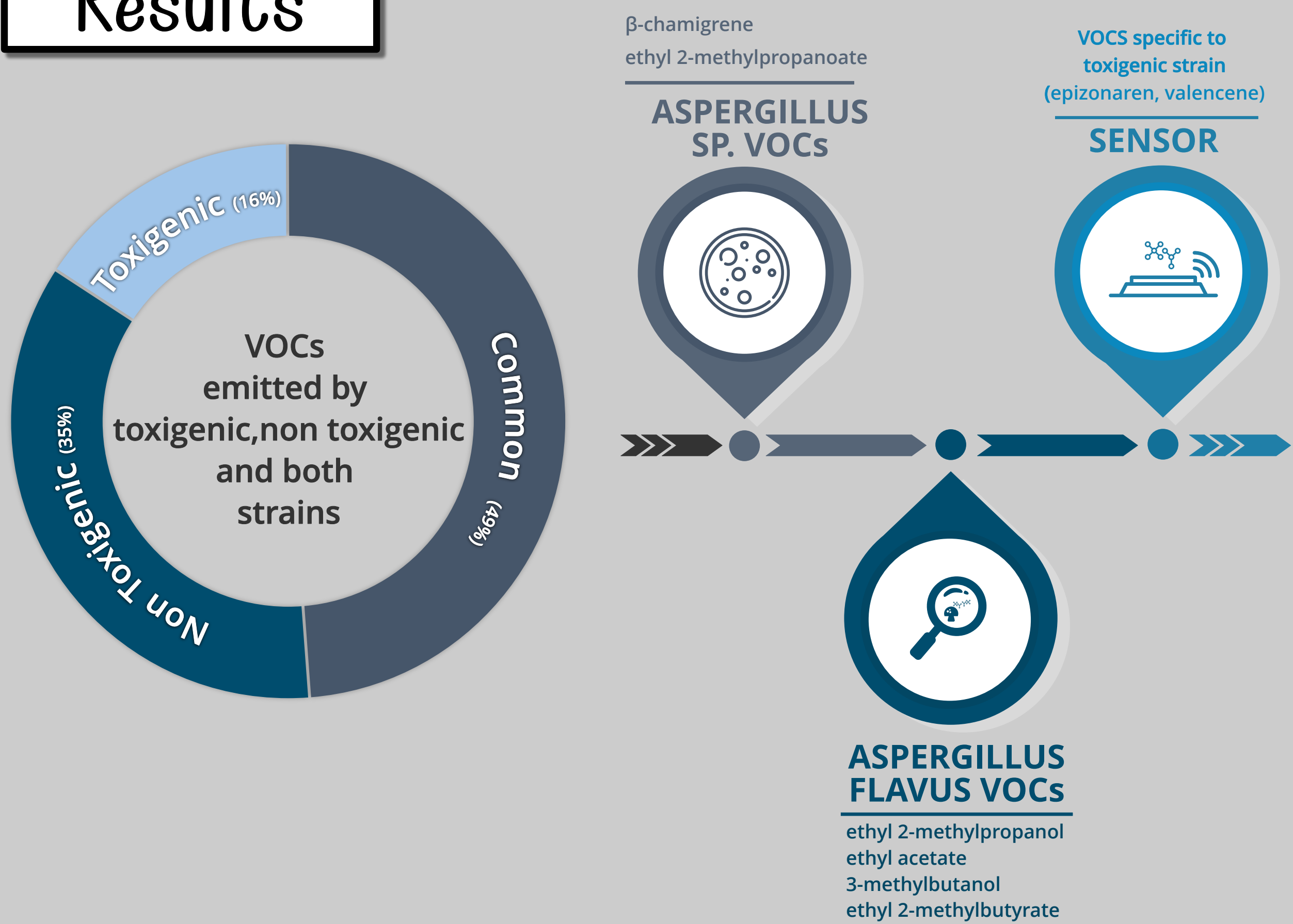
Objective

For the moment, mycotoxins are analyzed by HPLC-MS/MS a long, expensive and desructive method. The purpose of the present work is to **identify volatile organic compounds (VOCs)** markers that are produce as the same time as **mycotoxins** by the fungi in order to develop specific sensor.

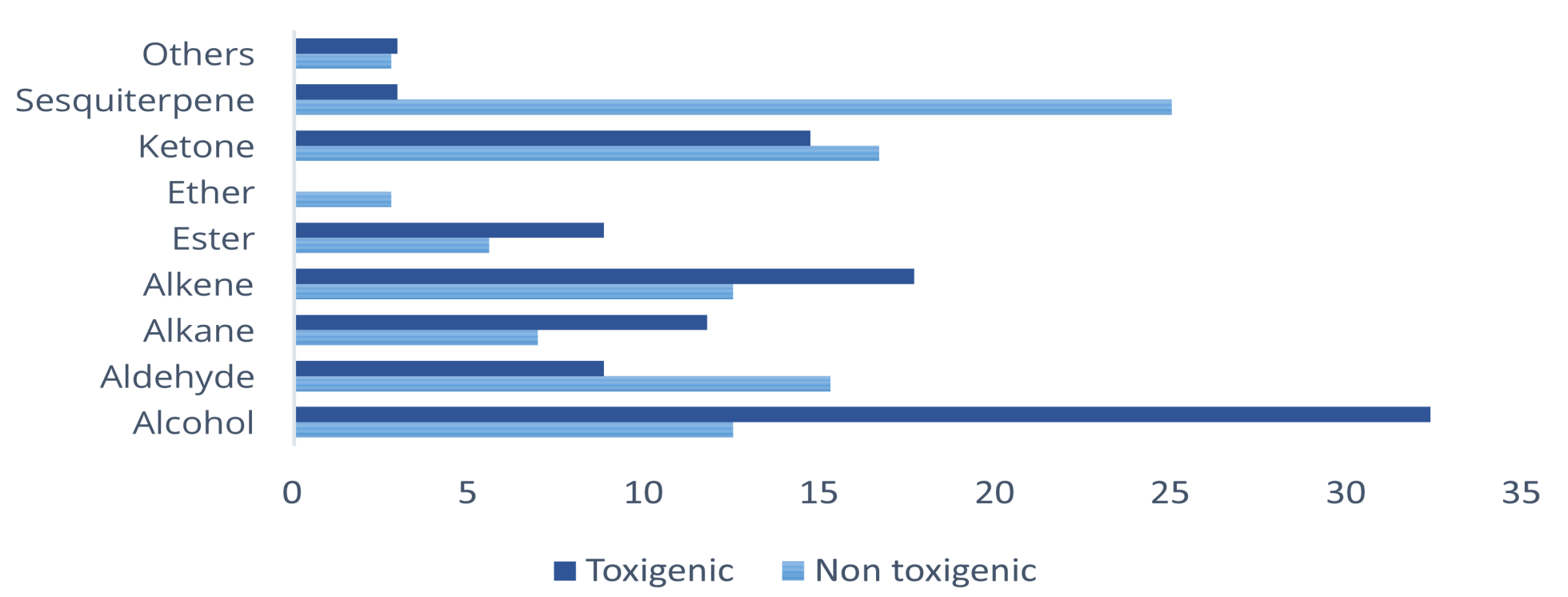
Method



Results



VOCs class emitted by toxicigen and non toxicigen strains



- Some VOCs emitted by toxicigen and non toxicigen strains are different
- A part of the VOCs are constantly emitted by the strain during their growth
- VOCs specifically emitted by the toxicigen strain have been identified. They are potential biomarkers to develop specific sensors.

Outline

- Increase sensitivity of the method
- Correlate VOCs emission and mycotoxin production

Contact

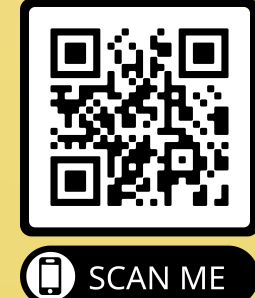
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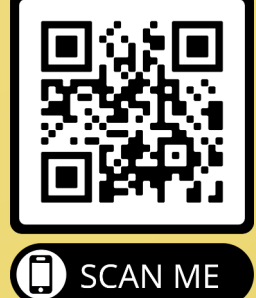
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