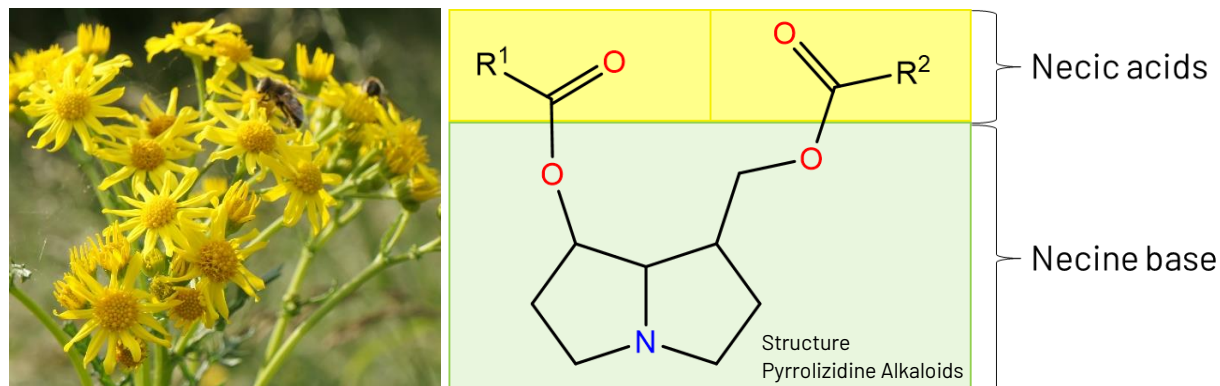


Group: Wageningen Food Safety Research (WFSR), Organic Chemistry (ORC)

Project: Analysis of Pyrrolizidine Alkaloids

Supervisors: Laura Righetti (ORC/WFSR), Leonie Straub (ORC/WFSR)



Background and research interests- Pyrrolizidine alkaloids (PAs) are secondary plant metabolites and natural toxins occurring in >6000 plants. They were found to exhibit carcinogenic and genotoxic properties following chronic exposure and hepatotoxic activity following acute poisoning in mammals. Human poisoning is typically caused by food or medicine contaminated with PA-rich weeds. The general structure of PAs consists of a necine base, that is esterified with one or two necic acids, additionally they can be present as free base or as N-oxides. This results in a very high structural diversity with many isomers, by today more than 800 PAs are known.

In the European Union the maximum levels of 35 PAs for several plant-based food products are legislated. At the WFSR, where the EURL for plant toxins is located, about 80 standards of regulated and unregulated PAs are available.

Objectives

The aim of the study is to analyze PAs in plant species using different analytical tools, including high resolution mass spectrometry.

Methodology/ what students can learn

After preparation of the plant extracts, the samples will be analyzed using liquid chromatography coupled to high resolution mass spectrometry.

Requirements

We are looking for a BSc or MSc student interested in learning analytical techniques, and gather knowledge about food safety. The project will have a duration of 6 months.

Contact information

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