



RIKILT

WAGENINGEN UR

Plant toxins in food/food supplements

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Cluster: Natural Toxins and Pesticides
Internship number: NTP_2011_04

Plant toxins are secondary plant metabolites naturally occurring in weeds, ornamentals and edible crops. The chemical variety is enormous. Aromatic plants used as food ingredient (e.g. herbs, spices), as raw materials for flavours and fragrances (e.g. essential oils), or as (traditional) herbal medicinal products are examples of products in which plant toxins can be very abundant. In case of herbal medicinal products, plant toxins can be the same substances as those to which the health benefits are attributed, the difference between toxin and pharmaceutical obviously being the dose. There has been a steady increase in consumption of herbal preparations, both in human and animal nutrition. Concentrations of plant toxins are known to vary widely in the same species which complicated quality and safety control. Moreover, it is common that the raw plant materials are collected in the wild. Non-targeted species may be included either by accidental substitution or by adulteration. Besides herbal products, plant toxins may occur in honey and are inherent in certain food commodities (e.g. poppy seeds). Due to the very limited legislation and, consequently, lack of monitoring and enforcement data, relatively little is known about the levels of plant toxins in food supplements, herbal teas and medicines and specific food products.

A very brief initial survey of herbal teas, herbal-based food supplements, traditional herbal medicines and honey revealed that plant toxins such as pyrrolizidine alkaloids, ricine, strychnine, aristolochic acid and aconitine are present in these products. For poppy seeds, the European Food Safety Authority has concerns about the levels of morphine and related alkaloids. The goal of this project is to develop a method, based on LC-MS, for the combined determination of certain plant toxins and to conduct a more extended survey of the above products in order to gain insight in the current occurrence of plant toxins in herbal preparations and food.

Duration of the internship: approx. 6 months, starting: > September 2011

What we are asking

motivated student (HLO level or equivalent) for thesis or internship. Background in analytical chemistry, liquid chromatography/mass spectrometric detection.

What we offer

Expert guidance during the internship. Next to that a monthly internship compensation of € 295,--.