

FACT SHEET

PYRROLIZIDINE ALKALOID TESTING FOR THE FOOD INDUSTRY

Identification and quantification of pyrrolizidine alkaloids in food, drinks and herbal supplements.

Food business operators (FBOs) producing herbal infusions and teas, certain dried herbs, pollen products and herbal food supplements, must ensure their products contain safe levels of pyrrolizidine alkaloids (PAs). New legislation relating to PA levels applies from July 2022, which must be complied with to sell these products in the EU. Our specialist inspection, testing and advisory services can help you ensure the safety and quality of your goods.



What are pyrrolizidine alkaloids?

Pyrrolizidine alkaloid (PAs) is the term used for a group of chemical compounds which are alkaloids containing a pyrrolizidine ring system. These are toxins produced naturally by several plant species, most of which are weeds. They form part of the plant's chemical defence system against insect herbivores.

An estimated 6,000 plant species worldwide may contain pyrrolizidine alkaloids. The PA content in food depends on many factors, including the species and origin of the PA-producing plant, harvest, storage, and extraction procedures.

How are pyrrolizidine alkaloids associated with human health?

Many PAs are considered potentially harmful to humans and ingesting large concentrations can lead to genotoxic and potentially carcinogenic effects. Therefore, it is important to minimise the levels of PAs in the foods we consume. In the EU, the presence of PAs is regulated in certain products such as teas, infusions and herbs and cumin seeds and these products should be assessed routinely.

What is the regulation for pyrrolizidine alkaloids?

From 1st July 2022, Regulation (EC) No 1881/2006 sets out the maximum



acceptable levels of PAs in specific high-risk foodstuffs sold in the EU. The regulation lists 21 different PAs which need to be quantified via methods such as liquid chromatography-mass spectroscopy (LC-MS/MS).

Which products need to be tested for pyrrolizidine alkaloids?

The European Commission has listed the following product categories that must adhere to the Regulation and will require testing to ensure the levels of PAs present are below the maximum permissible limit:

- Herbal infusions
- Teas
- Food supplements containing herbal ingredients
- Pollen and pollen-based products
- Borage leaves for consumer purchase
- Dried herbs such as oregano, lovage and marjoram
- Cumin seeds

How Intertek can help

We are a leading Total Quality Assurance provider with a network of more than 1,000 labs and offices in over 100 countries. Our specialist food testing team routinely identify and quantify all 21 controlled PAs and other related contaminants included in the 'tea standard' via LC-MS/MS for food business operators.

In addition to PA testing, we provide a wide range of food services including microbiological, allergen and water testing, nutritional analysis, meat speciation and label validation. Our blend of expert food inspection, testing and advisory services helps our customers to achieve compliance and improve safety, quality, and efficiency so your business can go from strength to strength.

FOR MORE INFORMATION



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