

## Not all squash are edible

In France, squash, pumpkins, melons and colocynths are often seen on market stalls and in family vegetable gardens. The species usually grown and marketed in Europe are the following: *Cucumis melo* (melon), *Cucumis sativus* (cucumber, gherkin), *Cucurbita pepo* (squash, courgette), *Cucurbita moschata* (butternut squash, etc.), *Cucurbita maxima* (pumpkin), *Citrullus lanatus* (watermelon). Many other vegetable varieties are also available under the name "squash". The species name *Cucurbita pepo* L. includes not only squash, courgettes and pumpkins (edible forms), but also ornamental colocynths (inedible forms).



Inedible *Citrullus Colocynthis* – Source: Pr A. Badoc

Not all "squash" are edible, and the shape and colour of some inedible squash can be misleading to the uninformed consumer. Individuals may have inadvertently planted inedible species in their vegetable gardens, but there may also be hybridisation of edible squash with inedible squash where several species are grown in close proximity.

The toxicity of inedible species is mainly digestive, due to the presence of bitter cytotoxic compounds called cucurbitacins. These are responsible for the unpleasant taste of the squash and above all for a drastic intestinal purgative action. However, there is still uncertainty about the link between cucurbitacin, bitterness and toxicity, and there is a lack of studies on the subject.

Against this background, Poison Control Centres (PCCs) are regularly consulted about the occurrence of digestive disorders associated with the consumption of supposedly edible "squash".

For example, in the five years between 1 January 2012 and 31 December 2016, 176 dossiers<sup>1</sup> concerning 353 people having eaten an inedible gourd were registered in the PCC information system. As expected, cases occurred most often (82% of cases) at harvest time in the second half of the year, and on average, two people were exposed to the same vegetable.

The origin of the inedible gourd was determined in 86 dossiers (48.8%) corresponding to 197 people:

- Purchased at the market, supermarket or market gardener ("market") for 32 dossiers (18.2%) involving 90 people;
- Grown in the family vegetable garden ("garden") for 52 dossiers (29.5%) involving 105 people;
- Collection of "wild" specimens for two dossiers involving two people.

More than two thirds (n=204) of the individuals experienced digestive symptoms, mainly diarrhoea (54.4%) and vomiting (47.5%), which most often appeared very rapidly after ingestion (a few hours) and lasted for up to several days.

There were no fatalities or serious cases. The worst affected individuals (n=14, 4%), mainly elderly people or very young children, who are therefore more vulnerable, suffered major digestive disorders that were poorly tolerated (hypotension, dehydration) and some required hospitalisation.

Poisoning from commercially purchased inedible gourds is not uncommon.

Inedible "ornamental" squash should be sold only in the "decoration" section of a shop or in a dedicated section during specific periods (Halloween, etc.), and not near edible squash. If, however, these squash are used to decorate a display in the vegetable section, the "inedible" label should be clearly visible, to avoid confusion in the event of purchase, with a clear separation from edible squash.



*Cucurbita maxima* or edible pumpkin – Source Pr A. Badoc

1. A dossier consists of one or more related cases: here, several people who have eaten the same product.

This would limit the risk of shoppers mistaking ornamental squash for vegetables.

In the case of home-grown "squash", it also seems important that garden centres or seed companies clearly indicate the species, variety and edibility on young plants or seed packets. They should also clearly mention the possibilities of hybridisation when two species of cucurbits – one of which is inedible – are planted in close proximity.

**Magali LABADIE (Bordeaux Poison Control Centre)**

TO FIND OUT MORE, VISIT:

[http://www.centres-antipoison.net/cctv/CCTV\\_Courges\\_2017.pdf](http://www.centres-antipoison.net/cctv/CCTV_Courges_2017.pdf)