Risiken erkennen – Gesundheit schützen

Cause of the Bitter Taste of Pine Seeds Still Unknown

Updated Opinion No. 045/2011 of the BfR from 26 September 2011*

In some cases, pine seeds can leave a bitter taste in the mouth after consumption. These taste disturbances either occur immediately or with a time delay of two to three days and in most cases die away after two weeks at the latest[1]. So far, the symptoms have always been described as reversible. Consumers in Germany and other EU member states have reported these symptoms. According to current scientific knowledge, there is no danger to health.

Up till now, these taste disturbances have been described for pine seeds originating from China and Pakistan. Those countries mainly use pine seeds of the Korean pine (*Pinus koraiensis*) for the food sector. There is a suspicion that in addition to this species which is listed as edible by the *Food and Agriculture Organization of the United States* (FAO) [2] other types of pine seeds are mixed in which are not included in this list. Even though various approaches are currently used to prove the existence of different species in commercially available pine seeds on the basis of their fatty acid pattern[3][4], no evidence to substantiate this suspicion has been presented yet. In the view of the BfR, further studies on botanically defined pine seed samples are required to provide such evidence.

The cause of the taste disturbances is unknown. The current assumption is that the bitter taste is attributable directly or indirectly to the natural components of the seeds. Based on the studies available, residue from pesticides, poison from mycotoxins or heavy metals can be excluded as a cause. In addition, it is not possible at this point in time to identify, neither by means of visual controls nor chemical and analytical procedures, pine seeds whose consumption leads to taste impairment.

[1] Mostin M, 2001.
Taste disturbances after pine nut ingestion. European Journal of Emergency Medicine, Vol. 8/1: 76.

[2] FAO, 1998.
Non-wood forest products from conifers, Food and Agriculture Organization of the United Nations. Available online at: http://www.fao.org/docrep/x0453e/X0453e00.htm [09.08.2010].

[3] Destaillats F, 2010.
Identification of the botanical origin of pine nuts found in food products by gas-liquid chromatography analysis of fatty acid profile. Journal of Agricultural and Food Chemistry, 58: 2082-2087.

[4] Köbler H, 2011.
Nuclear magnetic resonance spectroscopy and chemometrics to identify pine nuts that cause taste disturbance. Journal of Agricultural and Food Chemistry, 59: 6877-6881.

*The updated opinion replaces the information No. 017/2010 from 12 April 2010