



## Nicotine Testing

Nicotine is an alkaloid which naturally occurs in solanaceous plants such as the tobacco plant *Nicotiana tabacum* and, in smaller quantities, in potatoes, tomatoes and egg plants. Until well into the 1970s, nicotine was used as a pesticide, which is now prohibited. However, within tobacco brew it is a common household remedy to combat plant lice. In 2006, traces of nicotine were found in chicken eggs and in 2009, they were increasingly found in ceps. In 2011 increased levels of nicotine in raw materials for tea, herbs and spices of European and non-European origin were reported. As a consequence, the European Union has established maximum residue levels in a number of additional commodity groups in August 2011

### Effects:

When a body is exposed to nicotine, the individual experiences a “kick.” This is partly caused by nicotine stimulating the adrenal glands, which results in the release of adrenaline. This surge of adrenaline stimulates the body. There is an immediate release of glucose, as well as an increase in heart rate, breathing activity, and blood pressure. Nicotine also makes the pancreas produce less insulin, causing a slight increase in blood sugar or glucose. Indirectly, nicotine causes the release of dopamine in the pleasure and motivation areas of the brain.

**Toxicity:** Toxicology In small concentrations, nicotine has a stimulating effect. In higher concentrations, however, it is a strong neurotoxin. In 2009, the European Food Safety Authority (EFSA) has set up an acceptable daily intake (ADI) and an acute reference dose (ArfD) of both **0.0008 mg/kg** body weight only.

**Regulatory:** Provisions Within Europe, maximum residue levels (MRLs) in food are harmonised in **Regulation (EC) No. 396/2005**. For substances without an established MRL, a default limit of **0.01 mg/kg** applies.

**Analysis:** Our experts from the Competence Centre for organic contaminants as well as veterinary drug residues have long term experience in the analysis of nicotine from various vegetable, mushrooms, herbs, spices and tea and animal matrices.

**Maximum residue levels (MRLs):** Nicotine in **mushrooms, herbs, tea and spices (Regulation (EU) No. 2015/401 amending Regulation (EC) No. 396/2005) - EU Pesticides Database (v.2.1) Pesticide residue(s) and maximum residue levels (mg/kg) (europa.eu)**

As always, **Eureka** is here to support you not only with our **sampling, testing and inspection services**, but also with **expert advice on related topics**.

Please email us for all your upcoming requirements as per each country MRLs.

