Tropane alkaloids in mint teas at the Serbian market

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Solanaceae and the other related families of plants produce tropane alkaloids (TAs) at the high concentrations, particularly in case of Datura stramonium and Brugmansia arborea seeds. TAs are a group of over 200 secondary metabolites, found in all parts of the tropane alkaloids containing plants and they have anticholinergic effect due to being the antagonists of acetylcholine muscarinic receptors in mammals.

Tea, one of the most popular drinks in the world, has many beneficial effects on human health such as phenolic compounds, but can be accidentally contaminated with Solanaceae seeds during harvest. In fact, tea is one of the most potential matrices that can be contaminated with these type of seeds.

Detected pesticides in mint tea samples (mg/kg)

<table>
<thead>
<tr>
<th>Tea sample</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atropine</td>
<td>*</td>
<td>5.41</td>
<td>*</td>
<td>7.23</td>
<td>*</td>
</tr>
<tr>
<td>Scopolamine</td>
<td>*</td>
<td>1.92</td>
<td>*</td>
<td>2.66</td>
<td>*</td>
</tr>
<tr>
<td>Tea sample</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Atropine</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Scopolamine</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>4.27</td>
</tr>
</tbody>
</table>

*Detection < LOD

Out of the 10 tested mint tea samples three of them contained atropine and scopolamine in the concentrations above the LOQ. Although this research was conducted on relatively small number of mint tea samples, the obtained results, which are not indicating the serious health concern in this case, are undoubtedly accentuating the need for monitoring the TAs presence in herbal teas.