REPORT

CHINESE HONEY 2016

Astragalus sinicus
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Acknowledgements

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Introduction

This work was organized in order to strengthen the European knowledge of Chinese honeys, the technical competency of the palynologists in identification of foreign pollen and to harmonize the methodologies and the terminology.

Materials and methods

Samples were sent to 44 analysts, 36 of them (33 laboratories) reported back.

<table>
<thead>
<tr>
<th>Countries</th>
<th>n analysts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>1</td>
</tr>
<tr>
<td>Croatia</td>
<td>5</td>
</tr>
<tr>
<td>France</td>
<td>4</td>
</tr>
<tr>
<td>Germany</td>
<td>5</td>
</tr>
<tr>
<td>Greece</td>
<td>4</td>
</tr>
<tr>
<td>Italy</td>
<td>9</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1</td>
</tr>
<tr>
<td>Poland</td>
<td>3</td>
</tr>
<tr>
<td>Spain</td>
<td>2</td>
</tr>
<tr>
<td>Switzerland</td>
<td>1</td>
</tr>
<tr>
<td>Turkey</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 1 - Countries and number of participants

Each laboratory received 4 samples of Chinese honey in a plastic container, labelled with a progressive number, analysts know just the geographical origin (China).

The analysts were recommended to analyze the samples as a routine sample, using the method that is regularly applied.

Each participant received by mail the Excel-form to fill out for the return of results.

<table>
<thead>
<tr>
<th>Name</th>
<th>XXXX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surname</td>
<td>XXXXX</td>
</tr>
<tr>
<td>Method</td>
<td>XXXXX</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nectar pollen</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollen name</td>
<td>NNNN</td>
</tr>
<tr>
<td>Pollen name</td>
<td>p</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nectarless pollen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollen name</td>
</tr>
<tr>
<td>Pollen name</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honeydew elements</td>
</tr>
<tr>
<td>Other (yeast, starch etc.)</td>
</tr>
</tbody>
</table>

Table 2 - Result form
<table>
<thead>
<tr>
<th>Analyst COD</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Louveaux, 1978</td>
</tr>
<tr>
<td>02</td>
<td>Louveaux, 1978</td>
</tr>
<tr>
<td>03</td>
<td>Von der Ohe, 2004</td>
</tr>
<tr>
<td>04</td>
<td>Harmonized method of melissopalnology (Apidology, 2004)</td>
</tr>
<tr>
<td>05</td>
<td>Louveaux, 1978</td>
</tr>
<tr>
<td>06</td>
<td>DIN 10760, 2002</td>
</tr>
<tr>
<td>07</td>
<td>§64 LFGB L40.00-11, mikroskopisch</td>
</tr>
<tr>
<td>08</td>
<td>Internal</td>
</tr>
<tr>
<td>10</td>
<td>Louveaux, 1978</td>
</tr>
<tr>
<td>11</td>
<td>UNI 11299:2008</td>
</tr>
<tr>
<td>12</td>
<td>Louveaux, 1978</td>
</tr>
<tr>
<td>13</td>
<td>Harmonised methods of melissopalynology. Apidologie 35, 518-521</td>
</tr>
<tr>
<td>14</td>
<td>Acetolysis according Erdtman (1969, Handbook of Palynology. Munksgaard, Copenhagen, 486p.)</td>
</tr>
<tr>
<td>15</td>
<td>Louveaux, 1978</td>
</tr>
<tr>
<td>16</td>
<td>Rozporządzenie MRiRW z dnia 14 stycznia 2009r.</td>
</tr>
<tr>
<td>17</td>
<td>Louveaux, 1978</td>
</tr>
<tr>
<td>18</td>
<td>DIN 10760: 2002-05</td>
</tr>
<tr>
<td>19</td>
<td>Internal</td>
</tr>
<tr>
<td>20</td>
<td>Louveaux, 1978</td>
</tr>
<tr>
<td>21</td>
<td>DIN 10760</td>
</tr>
<tr>
<td>22</td>
<td>UNI 11299:2008</td>
</tr>
<tr>
<td>23</td>
<td>Louveaux, 1978</td>
</tr>
<tr>
<td>24</td>
<td>UNI 11299 (2008)</td>
</tr>
<tr>
<td>25</td>
<td>DIN 10760, mod.</td>
</tr>
<tr>
<td>26</td>
<td>Louveaux 1978</td>
</tr>
<tr>
<td>27</td>
<td>Internal</td>
</tr>
<tr>
<td>28</td>
<td>Louveaux, 1978</td>
</tr>
<tr>
<td>29</td>
<td>Rozp. MRiRW z dnia 14 stycznia 2009r. Zał. do rozp. pkt. VI Dz.U. z 2009r. Nr 17 poz.94</td>
</tr>
<tr>
<td>30</td>
<td>Louveaux, 1978 and different german regulations</td>
</tr>
<tr>
<td>31</td>
<td>Louveaux, Maurizio &amp; Vorwhol (1978)</td>
</tr>
<tr>
<td>32</td>
<td>UNI 11299:2008</td>
</tr>
<tr>
<td>33</td>
<td>Louveaux, 1978</td>
</tr>
<tr>
<td>34</td>
<td>Louveaux, DIN</td>
</tr>
<tr>
<td>35</td>
<td>Louveaux et al. (with changes)</td>
</tr>
<tr>
<td>36</td>
<td>Louveaux, 1978</td>
</tr>
</tbody>
</table>

Table 3 – Analysts’ identification code and applied method

Analysts were asked to fill the form with all the pollens they recognized, eventually adding rows in the Excel-form. In particular analysts were asked to fill in the template with the names of counted pollens and their respective numbers. Participants were asked to count and identify 500 pollen grains and to fill in the form dividing pollens in nectariferous and nectarless. Furthermore they were asked to sort the list from most frequent to least frequent and to indicate with "p" (presence) seen-but-not-counted pollens.

Further details were asked to consider were the number of honeydew elements and the presence of other elements as yeast, starch etc.
Results

Results were not comparable with each other due to the different amount of counted pollens, assorted names given to pollen types, and dissimilar frequencies. Therefore give the entire results (Annex I Nomenclature) was the only way to allow analysts to compare their own results.

<table>
<thead>
<tr>
<th>Sample</th>
<th>n palynologist</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std.dev</th>
<th>Median</th>
<th>CV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>35</td>
<td>7</td>
<td>53</td>
<td>23.9</td>
<td>12.4</td>
<td>20.0</td>
<td>51.8</td>
</tr>
<tr>
<td>2</td>
<td>33</td>
<td>10</td>
<td>68</td>
<td>31.9</td>
<td>14.4</td>
<td>29.0</td>
<td>45.0</td>
</tr>
<tr>
<td>3</td>
<td>32</td>
<td>4</td>
<td>48</td>
<td>23.7</td>
<td>11.3</td>
<td>20.0</td>
<td>47.6</td>
</tr>
<tr>
<td>4</td>
<td>36</td>
<td>8</td>
<td>72</td>
<td>26.2</td>
<td>14.2</td>
<td>22.0</td>
<td>54.3</td>
</tr>
</tbody>
</table>

Table 4 - n palynologists who performed analysis, data about the amount of pollen types found by palynologists in each sample

Each name gave from analysts (n data) to each pollen type, clearly attributable at the same taxon (assigned pollen types), was grouped (assigned pollen type). Then the assigned pollen type was tried in "The plant list" (www.theplantlist.org) and was assigned to the belonging family.

<table>
<thead>
<tr>
<th>Sample</th>
<th>n palynologist</th>
<th>n data</th>
<th>n assigned pollen type</th>
<th>n family</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>35</td>
<td>739</td>
<td>207</td>
<td>78</td>
</tr>
<tr>
<td>2</td>
<td>33</td>
<td>960</td>
<td>235</td>
<td>82</td>
</tr>
<tr>
<td>3</td>
<td>32</td>
<td>638</td>
<td>202</td>
<td>71</td>
</tr>
<tr>
<td>4</td>
<td>36</td>
<td>811</td>
<td>238</td>
<td>85</td>
</tr>
</tbody>
</table>

Table 5 – Variability of pollen name

Some pollens were selected in each sample to perform statistical analysis reported below.

Statistical analysis

Not all analysts counted the same amount of pollen then for each numerical value was calculated the percentage on total number of counted pollen, regardless if pollens were from nectariferous or nectarless plants.

The pollens were chosen on the basis of their median value, since median is a simple and highly outlier-resistant estimator of the population mean (UNI ISO 13528:2016), and on the basis of the number of analysts who identified the pollen.

<table>
<thead>
<tr>
<th>Sample</th>
<th>High (Me&gt;40%)</th>
<th>Medium (5%&lt;Me&lt;40%)</th>
<th>Low (Me&lt;5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Robinia (Me=47.6)</td>
<td>Brassicaceae (Me=14.2)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Cannabaceae (Me=45.7)</td>
<td>Vitex (Me=19.6)</td>
<td>Rhamnaceae (Me=5.7)</td>
</tr>
<tr>
<td>3</td>
<td>Vitex (Me=65.2)</td>
<td>Flueggea (Me=11.4)</td>
<td>Brassicaceae (Me=2.4)</td>
</tr>
<tr>
<td>4</td>
<td>Brassicaceae (Me=78.0)</td>
<td></td>
<td>Astragalus sinicus (Me=3.2)</td>
</tr>
</tbody>
</table>

Table 6 – Chosen pollen and median (Me) (outlier included)
Analysts named the same pollen form with different names. All the different names have been identified and grouped under one heading. The correct attribution of family, genus and species was chosen using "The Plant List" references. In the elaboration each pollen will be identified with the widest genus or family (e.g. *Brassica napus*, *Sinapis* and *Cruciferae* were grouped under the heading *Brassicaceae*), instead if a pollen form was identified with different family denominations, it was grouped under the most frequent name used by analysts (e.g. *Moraceae*, *Urticaceae*, *Humulus*, *Corylus* were grouped under *Cannabaceae*).
### Table 7

<table>
<thead>
<tr>
<th>Analyst</th>
<th>Used name</th>
<th>Analyst</th>
<th>Used name</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Robinia pseudoacacia</td>
<td>01</td>
<td>Cruciferae</td>
</tr>
<tr>
<td>02</td>
<td>Robinia pseudoacacia</td>
<td>02</td>
<td>Cruciferae</td>
</tr>
<tr>
<td>03</td>
<td>Robinia</td>
<td>03</td>
<td>Cruciferae (Brassica type) + Cruciferae &lt; 20 micron + Cruciferae</td>
</tr>
<tr>
<td>04</td>
<td>Robinia</td>
<td>04</td>
<td>Cruciferae</td>
</tr>
<tr>
<td>05</td>
<td>Robinia Pseudacacia</td>
<td>05</td>
<td>Brassicaceae</td>
</tr>
<tr>
<td>06</td>
<td>Robinia pseudoacacia</td>
<td>06</td>
<td>Brassica sp.</td>
</tr>
<tr>
<td>07</td>
<td>Fabaceae / Robinia pseudoacacia / false Acacia</td>
<td>07</td>
<td>Brassicaceae/Brassica napus/Rape</td>
</tr>
<tr>
<td>08</td>
<td>Robinia</td>
<td>08</td>
<td>Brassicaceae</td>
</tr>
<tr>
<td>09</td>
<td>Robinia pseudoacacia</td>
<td>09</td>
<td>Cruciferae/Brassica type</td>
</tr>
<tr>
<td>10</td>
<td>Robinia pseudoacacia</td>
<td>10</td>
<td>Brassicaceae</td>
</tr>
<tr>
<td>11</td>
<td>Robinia</td>
<td>11</td>
<td>Cruciferae</td>
</tr>
<tr>
<td>12</td>
<td>Robinia</td>
<td>12</td>
<td>Brassicaceae</td>
</tr>
<tr>
<td>13</td>
<td>Acacia</td>
<td>13</td>
<td>Brassicaceae</td>
</tr>
<tr>
<td>14</td>
<td>Robinia</td>
<td>14</td>
<td>Brassicaceae</td>
</tr>
<tr>
<td>15</td>
<td>Robinia Pseudoacacia</td>
<td>15</td>
<td>Brassica + Brassicaceae</td>
</tr>
<tr>
<td>16</td>
<td>Robinia pseudoacacia</td>
<td>16</td>
<td>Brassicaceae</td>
</tr>
<tr>
<td>17</td>
<td>Robinia</td>
<td>17</td>
<td>Cruciferae</td>
</tr>
<tr>
<td>18</td>
<td>Robinia pseudoacacia</td>
<td>18</td>
<td>Brassica napus</td>
</tr>
<tr>
<td>19</td>
<td>Robinia</td>
<td>19</td>
<td>Brassicaceae</td>
</tr>
<tr>
<td>20</td>
<td>Robinia</td>
<td>20</td>
<td>Brassicaceae</td>
</tr>
<tr>
<td>21</td>
<td>Robinia</td>
<td>21</td>
<td>Brassicaceae</td>
</tr>
<tr>
<td>22</td>
<td>Robinia</td>
<td>22</td>
<td>Cruciferae</td>
</tr>
<tr>
<td>23</td>
<td>Fabaceae/Robinia</td>
<td>23</td>
<td>Brassicaceae + Brasicae (inaperturate type)</td>
</tr>
<tr>
<td>24</td>
<td>Robinia pseudoacacia L.</td>
<td>24</td>
<td>Brassicaceae</td>
</tr>
<tr>
<td>25</td>
<td>Robinia pseudoacacia</td>
<td>25</td>
<td>Brassicaceae</td>
</tr>
<tr>
<td>26</td>
<td>Robinia pseudoacacia</td>
<td>26</td>
<td>Brassicaceae, Brassica napus form</td>
</tr>
<tr>
<td>27</td>
<td>Robinia</td>
<td>27</td>
<td>Brassicaceae</td>
</tr>
<tr>
<td>28</td>
<td>Robinia</td>
<td>28</td>
<td>Cruciferae</td>
</tr>
<tr>
<td>29</td>
<td>Robinia</td>
<td>29</td>
<td>Cruciferae</td>
</tr>
<tr>
<td>30</td>
<td>Robinia pseudoacacia</td>
<td>30</td>
<td>Brassica-type + Brassicaceae</td>
</tr>
<tr>
<td>31</td>
<td>Robinia pseudoacacia</td>
<td>31</td>
<td>Brassica (B. napus var. oleifera)</td>
</tr>
<tr>
<td>32</td>
<td>Robinia</td>
<td>32</td>
<td>Cruciferae (Brassica f.) + Cruciferae ≤ 20 µm</td>
</tr>
<tr>
<td>33</td>
<td>Robinia</td>
<td>33</td>
<td>Cruciferae</td>
</tr>
<tr>
<td>34</td>
<td>Robinia</td>
<td>34</td>
<td>Brassica napus-type + Sinapis-type + Brassicace</td>
</tr>
<tr>
<td>35</td>
<td>Medicago type (Fabaceae but not sure about the genus)</td>
<td>35</td>
<td>Brassicaceae (Brassica but there are others)</td>
</tr>
<tr>
<td>36</td>
<td>Robinia type</td>
<td>36</td>
<td>Brassicaceae</td>
</tr>
</tbody>
</table>

Table 7 – Pollen type names used by analysts (without any correction) in sample 1 grouped under the heading *Robinia* and *Brassicaceae*. 
<table>
<thead>
<tr>
<th>Sample 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cannabaceae</strong></td>
</tr>
<tr>
<td>Analyst</td>
</tr>
<tr>
<td>01</td>
</tr>
<tr>
<td>02</td>
</tr>
<tr>
<td>03</td>
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</tr>
<tr>
<td>35</td>
</tr>
<tr>
<td>36</td>
</tr>
</tbody>
</table>

Table 8 - Pollen type names used by analysts (without any correction) in sample 2 grouped under the heading Cannabaceae, Vitex, Rhamnaceae, Caryophyllaceae.
### Sample 3

<table>
<thead>
<tr>
<th>Analyst</th>
<th>Used name</th>
<th>Analyst</th>
<th>Used name</th>
<th>Analyst</th>
<th>Used name</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Vitex</td>
<td>01</td>
<td>Flueggea</td>
<td>01</td>
<td>Cruciferae</td>
</tr>
<tr>
<td>02</td>
<td>Vitex</td>
<td>02</td>
<td>Flueggea</td>
<td>02</td>
<td>Cruciferae</td>
</tr>
<tr>
<td>03</td>
<td>Vitex + Vitex 25-30 micron</td>
<td>03</td>
<td>Securinega/Flueggea</td>
<td>03</td>
<td>Cruciferae (Brassica type) + Cruciferae</td>
</tr>
<tr>
<td>04</td>
<td>Vitex</td>
<td>04</td>
<td>Flueggea</td>
<td>04</td>
<td>Cruciferae</td>
</tr>
<tr>
<td>05</td>
<td>tricolpate pollen (Fabaceae type) ~ 25 μm</td>
<td>05</td>
<td>tricolporate pollen (Oleaceae type) ~ 22,5 μm</td>
<td>05</td>
<td>Brassicaceae</td>
</tr>
<tr>
<td>06</td>
<td>\</td>
<td>06</td>
<td>\</td>
<td>06</td>
<td>Brassica sp.</td>
</tr>
<tr>
<td>07</td>
<td>Lamiaceae/Vitex</td>
<td>07</td>
<td>Araliaceae/Schefflera-type</td>
<td>07</td>
<td>\</td>
</tr>
<tr>
<td>08</td>
<td>Vitex</td>
<td>08</td>
<td>Fluegga</td>
<td>08</td>
<td>Cruciferae</td>
</tr>
<tr>
<td>09</td>
<td>\</td>
<td>09</td>
<td>\</td>
<td>09</td>
<td>Cruciferae / Brassica type</td>
</tr>
<tr>
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<td>23 μm, semiangular, 3-colporate, colpi with sharp edges, split on pore, psilate ( / striate ?)</td>
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<td>20-23 μm, circular, 3-colporate, costa, margo, slightly yellow ( more or less Fraxinus form)</td>
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<p>| Table 9 - Pollen type names used by analysts (without any correction) in sample 3 grouped under the heading Vitex, Flueggea, Brassicaceae. |</p>
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<td>Apiaceae, Pastinaca?</td>
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<td>Apiaceae</td>
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<td>Brassica napus + Brassicaceae</td>
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<td>Astragalus</td>
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<td>Umbelliferae</td>
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<td>Cruciferae (main: Brassica napus)</td>
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<td>Brassica (B. napus var. oleifera)</td>
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<td>Astragalus sinicus</td>
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<td>Umbelliferae (Conium maculatum f.) + Bupleurum</td>
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<td>Umbelliferae (Foeniculum type)</td>
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<td>Anthriscus f.</td>
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Table 10 - Pollen type names used by analysts (without any correction) in sample 4 grouped under the heading Brassicaceae, Astragalus sinicus, Apiaceae.
For each dataset of chosen pollen (Robinia, Brassicaceae, Cannabaceae, Rhamnaceae, Vitex, Caryophyllaceae, Flueggea, Astragalus sinicus, Apiaceae) normality was checked by Kolmogorov-Smirnov tests. Only Apiaceae was normally distributed, so for other pollen (not normally distributed) outlier were checked by Grubbs and Hampel tests.

The assigned value and z-score were calculated from the median value (outliers excluded).

The z-scores were considered satisfactory if \(|z| \leq 2\).
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<th>Palynologist</th>
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</tr>
<tr>
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<tr>
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<tr>
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<tr>
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<tr>
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<tr>
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<tr>
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<tr>
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<tr>
<td>% T</td>
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<td>-0.7</td>
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<tr>
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<td>% T</td>
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<tr>
<td>% T</td>
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Table 11 - Assigned value=median value; 1: outlier detected by Hampel’s test (NADI>3.5); 2: detected by Grubb’s test (p=0.05) furthest from the rest, but not a significant outlier (P > 0.05); 3: significant outlier (P < 0.05) detected by Grubb’s test (p=0.05); *z-score value 2< |z| <3; ** z-score value |z|>3
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<th>Flueggea Assigned value 11.4</th>
<th>*</th>
<th>Z score</th>
<th>Brassicaceae Assigned value 1.8</th>
<th>*</th>
<th>Z score</th>
<th>Brassicaceae Assigned value 78.0</th>
<th>*</th>
<th>Z score</th>
<th>Astragalus sinicus Assigned value 3.2</th>
<th>*</th>
<th>Z score</th>
<th>Apiaceae Assigned value 2.6</th>
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Table 12 - Assigned value=median value; 1: outlier detected by Hampel’s test (NAD=3.5); 2: detected by Grubb’s test (p=0.05) furthest from the rest, but not a significant outlier (P > 0.05); 3: significant outlier (P < 0.05) detected by Grubb’s test (p=0.05); *z-score value 2< |z| <3; ** z-score value |z|>3
Z-scores

Sample 1: Z scores

Figure 1 - Z-Score histogram of the qualitative pollen analysis of *Robinia* in Sample 1; z-scores were considered satisfactory if $|z| < 2$

Figure 2 – Z-Score histogram of the qualitative pollen analysis of *Brassicaceae* in Sample 1; z-scores were considered satisfactory if $|z| < 2$
Sample 2: Z scores

**Sample 2 - Cannabaceae**

![Z-score histogram for Cannabaceae in Sample 2](image)

Figure 3 – Z-Score histogram of the qualitative pollen analysis of Cannabaceae in Sample 2; z-scores were considered satisfactory if $|z| < 2$

**Sample 2 - Vitex**

![Z-score histogram for Vitex in Sample 2](image)

Figure 4 – Z-Score histogram of the qualitative pollen analysis of Vitex in Sample 2; z-scores were considered satisfactory if $|z| < 2$
Figure 5 – Z-Score histogram of the qualitative pollen analysis of Rhamnaceae in Sample 2; z-scores were considered satisfactory if $|z| < 2$

Figure 6 – Z-Score histogram of the qualitative pollen analysis of Caryophyllaceae in Sample 2; z-scores were considered satisfactory if $|z| < 2$
Sample 3: Z scores

Figure 7 - Z-Score histogram of the qualitative pollen analysis of Vitex in Sample 3; z-scores were considered satisfactory if $|z| < 2$

Figure 8 – Z-Score histogram of the qualitative pollen analysis of Flueggea in Sample 3; z-scores were considered satisfactory if $|z| < 2$
Figure 9 – Z-score histogram of the qualitative pollen analysis of Brassicaceae in Sample 3; z-scores were considered satisfactory if $|z| < 2$
Sample 4: Z scores

**Figure 10** – Z-score histogram of the qualitative pollen analysis of Brassicaceae in Sample 4; z-scores were considered satisfactory if |z| < 2
Figure 11 – Z-score histogram of the qualitative pollen analysis of *Astragalus sinicus* in Sample 4; z-scores were considered satisfactory if $|z| < 2$

Figure 12 – Z-score histogram of the qualitative pollen analysis of Apiaceae in Sample 4; z-scores were considered satisfactory if $|z| < 2$
Coefficient of variation (CV) is a standardized measure of dispersion of distribution expressed as a percentage, is useful for comparison between data sets with widely different means.

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Table 13 – RDS: relative standard deviation; CV%: coefficient of variation %, outlier excluded

Coefficient of variation decreases with increasing of mean/median value. Mainly this is due to small counting variations that are more significant in pollens which are low recurring than in frequent ones.
This is confirmed by the results of previous trials, as shown in table 14.

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<td>37.0-53.0%</td>
<td>90%</td>
<td>38.3-72.1</td>
</tr>
</tbody>
</table>

Table 14 - Coefficient of variation in four ring test: von der Ohe 2004, IHC ring trial in 2014 and in 2015, Chinese honey (trials performed differently).

Moreover the pollen knowledge, the ability to discriminate it from others with similar characteristics, and the different use of nomenclature are others possible causes.
Annex I - Nomenclature

"Annex I - Nomenclature" contains the list of each identified/unknown pollen (Nectar pollen), its percentage (% T), the sample (Sample) in which it was been found by analysts (Palynologist) and the family (The plant list www.theplantlist.org) which it belongs according to "The plant list".

<table>
<thead>
<tr>
<th>Assigned pollen type</th>
<th>Family <a href="http://www.theplantlist.org">www.theplantlist.org</a></th>
<th>% T</th>
<th>Palynologist</th>
<th>Data</th>
<th>Sample</th>
</tr>
</thead>
</table>

Table 15 - Table header of columns in “Annex I Nomenclature”

Annex II –Report from Pollen & Cores

Report of Célia Beaudoin (Pollen & Cores) who analyzed samples with acetolysis method.

To receive “Annex I – Nomenclature” and/or and “Annex II –Report from Pollen & Cores” please send an email to coordinators.

Reference

- www.theplantlist.org