DETERMINATION OF FLUORINE IN VEGETATION

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The content of fluorine (F) in plants is usually lower than 10 mg/kg.
FLUORINE IN HUMANS

Small amounts of fluoride have proven benefits for dental health.

Exposure to high intakes can result in development of dental or skeletal fluorosis.
DETERMINATION OF FLUORINE

Alkali metal carbonate fusion (NaKCO₃)

Oxygen bomb combustion (O₂)

SAMPLE DECOMPOSITION

FLUORIDE ION SELECTIVE ELECTRODE

x mg F / kg
WHICH RESULT IS CORRECT?

250 mg/kg

? 

200 mg/kg
The content of the analyte is determined by different laboratories.

277 ± 27 mg/kg
### MY WORK

<table>
<thead>
<tr>
<th></th>
<th>( w(F) ) [mg/kg]</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Certified value</td>
</tr>
<tr>
<td>CRM (SRM 2695 - high level)</td>
<td>277 ± 27</td>
</tr>
<tr>
<td>CRM (SRM 2695 - low level)</td>
<td>64 ± 8</td>
</tr>
<tr>
<td>Spruce needles - high level</td>
<td>192 ± 2</td>
</tr>
<tr>
<td>Spruce needles - low level</td>
<td>59 ± 1</td>
</tr>
<tr>
<td>Green tea</td>
<td>154 ± 3</td>
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</table>

- Results obtained by oxygen bomb combustion are lower than those obtained by alkali metal carbonate fusion.
- Results of analysis of certified reference material fall within the certified interval for both methods at both concentration levels.