Abstract
Molybdenum is a transition element needed in extremely low amounts for new varieties of canola. Its determination in canola seed with high sensitivity and selectivity was developed and validated. Microwave assisted digestion with a reporting limit of 0.1 ppm. The method was validated using a non GM commercial variety and CRM showed good accuracy and precision in the CRM (Table 3). The calculations for 1849a were based off 5 samples and the canola seed (DM basis)2.

Objective
Developing an analytical method for the determination of molybdenum in canola seed.

Chemicals and Reagents
Molybdenum, Terbium 159, Bismuth 209, 10,000 ppm molybdenum reference substance from High Purity Samples (Charleston, SC, USA) was used to prepare calibration standards (Matthews, NC, USA) 10 ppm Multi-Component standard from Inorganic Ventures (Woodridge, IL, USA)

Test Matrices
Canola Seed

Table 1. Test results of commercially available canola seed and CRM.

<table>
<thead>
<tr>
<th>Matrices</th>
<th>Test RSD</th>
<th>Recovery</th>
<th>Content (% DB) Mean (% DB) Standard Deviation RSD %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canola Seed</td>
<td>0.494</td>
<td>0.0367</td>
<td>7.43</td>
</tr>
<tr>
<td>CRM 1849a</td>
<td>0.475</td>
<td>0.0299</td>
<td>6.51</td>
</tr>
</tbody>
</table>

Discussion
Confirmation was achieved in the EPL test result of the CRM (Table 1).

Results

Table 2. Precision assessment of molybdenum determination by two analysts

| Set 1 & 2 | 0.459 | 0.0299 | 6.51 |
| Set 2     | 0.432 | 0.0123 | 2.86 |
| Set 1     | 0.486 | 0.0133 | 2.73 |

Conclusions
The ICP-MS analytical method was successfully utilized with satisfactory accuracy and precision for commercial canola seeds.

References