"...books always speak of other books, and every story tells a story that has already been told."

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APPENDICES

"Even a fool, when he holdeth his peace, is counted wise."

-Proverbs, 17: 28

Appendix 4.1

Growth data at peak flowering (stage 4.3) in Experiment 1 are presented in Table A4.1, while growth and yield data at maturity (stage 5.5) are presented in Table A4.2. The number of days to peak flowering and to maturity differed between the species and as such this data is confounded with phenology. Figure A4.1, shows the relationship between yield and days to maturity for Experiment 1.

Table A4.1. Dry matter, leaf area index (LAI) and specific leaf weight (SLW) at peak flowering (growth stage 4.3) for plants from Experiment 1, n=4.

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>DAS to 4.3</th>
<th>Dry matter at stage 4.3 (g m⁻²)</th>
<th>LAI</th>
<th>SLW</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>Leaf</td>
<td>Stem &amp; Pod</td>
</tr>
<tr>
<td>B. napus</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taparro</td>
<td>112</td>
<td>1759</td>
<td>235</td>
<td>1524</td>
</tr>
<tr>
<td>Maluka</td>
<td>105</td>
<td>944</td>
<td>108</td>
<td>835</td>
</tr>
<tr>
<td>Nindoo</td>
<td>108</td>
<td>1085</td>
<td>138</td>
<td>947</td>
</tr>
<tr>
<td>Shiralee</td>
<td>105</td>
<td>1073</td>
<td>138</td>
<td>935</td>
</tr>
<tr>
<td>DW15</td>
<td>108</td>
<td>1165</td>
<td>147</td>
<td>1018</td>
</tr>
<tr>
<td>DD28</td>
<td>114</td>
<td>1308</td>
<td>218</td>
<td>1089</td>
</tr>
<tr>
<td><strong>mean</strong></td>
<td><strong>1222</strong></td>
<td><strong>164</strong></td>
<td><strong>1058</strong></td>
<td><strong>4.09</strong></td>
</tr>
<tr>
<td>B. juncea</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PI340206</td>
<td>71</td>
<td>197</td>
<td>50</td>
<td>147</td>
</tr>
<tr>
<td>PI340212</td>
<td>71</td>
<td>155</td>
<td>33</td>
<td>122</td>
</tr>
<tr>
<td>CPI61680</td>
<td>&lt;71</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>CPI62005</td>
<td>71</td>
<td>290</td>
<td>75</td>
<td>215</td>
</tr>
<tr>
<td>Stoke</td>
<td>101</td>
<td>580</td>
<td>73</td>
<td>507</td>
</tr>
<tr>
<td>ZEM1</td>
<td>101</td>
<td>893</td>
<td>133</td>
<td>760</td>
</tr>
<tr>
<td><strong>mean</strong></td>
<td>**423 *****</td>
<td>**73 *****</td>
<td>**350 ***</td>
<td>**1.12 ***</td>
</tr>
</tbody>
</table>
Table A4.2. Dry matter, yield, harvest index and individual seed weights at maturity (growth stage 5.5) for plants from Experiment 1. n=4

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>DAS to 5.5</th>
<th>Dry matter at stage 5.5 (g m(^{-2}))</th>
<th>Harvest index (%)</th>
<th>Seed weight (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>Seed yield</td>
<td>Stem &amp; hulls</td>
</tr>
<tr>
<td>B. napus</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taparoo</td>
<td>151</td>
<td>1369</td>
<td>336</td>
<td>1033</td>
</tr>
<tr>
<td>Maluka</td>
<td>146</td>
<td>1413</td>
<td>398</td>
<td>1015</td>
</tr>
<tr>
<td>Nindoo</td>
<td>151</td>
<td>1498</td>
<td>367</td>
<td>1131</td>
</tr>
<tr>
<td>Shiralee</td>
<td>146</td>
<td>1432</td>
<td>389</td>
<td>1042</td>
</tr>
<tr>
<td>DW15</td>
<td>151</td>
<td>1788</td>
<td>473</td>
<td>1315</td>
</tr>
<tr>
<td>DD28</td>
<td>151</td>
<td>1663</td>
<td>250</td>
<td>1413</td>
</tr>
<tr>
<td><strong>mean</strong></td>
<td></td>
<td><strong>1527</strong></td>
<td><strong>369</strong></td>
<td><strong>1158</strong></td>
</tr>
</tbody>
</table>

B. juncea

|          |            |       |            |              |          |            |          |          |
| PI340206 | 120        | 290   | 74         | 216          | 26      | 2.72       |
| PI340212 | 120        | 269   | 42         | 227          | 15      | 1.94       |
| CPI61680 | 120        | 835   | 172        | 663          | 19      | 2.67       |
| CPI62005 | 120        | 643   | 155        | 487          | 24      | 3.90       |
| Stoke    | 137        | 858   | 167        | 691          | 20      | 2.72       |
| ZEM1     | 137        | 1075  | 254        | 820          | 24      | 2.97       |
| **mean** |            | **662 ***** | **144 ***** | **517 ***** | **21 ns** | **2.82 *** |

* P<0.05, *** P<0.001

Figure A4.1. Relationship between seed yield and days to maturity in Experiment 1. 
\(y=-921+8.56x, (r^2=0.74, P<0.005)\), mustard closed symbols, canola open.
### Appendix 6.1

Table A6.1. Analysis of variance for somatal frequency

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replicates</td>
<td>8</td>
<td>2053.94</td>
<td>256.74</td>
<td>5.08</td>
</tr>
<tr>
<td><strong>Main Plot</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>1</td>
<td>5170.10</td>
<td>5170.10</td>
<td>9.05</td>
</tr>
<tr>
<td>Deficit</td>
<td>1</td>
<td>63.12</td>
<td>63.12</td>
<td>0.11</td>
</tr>
<tr>
<td>Species x Deficit</td>
<td>1</td>
<td>1108.13</td>
<td>1108.13</td>
<td>1.94</td>
</tr>
<tr>
<td>Residual (a)</td>
<td>24</td>
<td>13704.50</td>
<td>571.02</td>
<td>11.29</td>
</tr>
<tr>
<td><strong>Sub Plot</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface</td>
<td>1</td>
<td>28067.71</td>
<td>28067.71</td>
<td>198.82</td>
</tr>
<tr>
<td>Surface x Species</td>
<td>1</td>
<td>2319.09</td>
<td>2319.09</td>
<td>16.43</td>
</tr>
<tr>
<td>Surface x Deficit</td>
<td>1</td>
<td>6.08</td>
<td>6.08</td>
<td>0.04</td>
</tr>
<tr>
<td>Surface x Deficit x Species</td>
<td>1</td>
<td>1.54</td>
<td>1.54</td>
<td>0.01</td>
</tr>
<tr>
<td>Residual (b)</td>
<td>32</td>
<td>4517.47</td>
<td>141.17</td>
<td></td>
</tr>
<tr>
<td><strong>Sub-Sub Plot</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Position</td>
<td>2</td>
<td>1815.73</td>
<td>907.86</td>
<td>17.95</td>
</tr>
<tr>
<td>Position x Species</td>
<td>2</td>
<td>631.19</td>
<td>315.59</td>
<td>6.24</td>
</tr>
<tr>
<td>Position x Deficit</td>
<td>2</td>
<td>89.74</td>
<td>44.87</td>
<td>0.89</td>
</tr>
<tr>
<td>Surface x Position</td>
<td>2</td>
<td>196.01</td>
<td>98.00</td>
<td>1.94</td>
</tr>
<tr>
<td>Position x Species x Deficit</td>
<td>2</td>
<td>85.17</td>
<td>42.59</td>
<td>0.842</td>
</tr>
<tr>
<td>Surface x Position x Species</td>
<td>2</td>
<td>430.85</td>
<td>215.42</td>
<td>4.26</td>
</tr>
<tr>
<td>Surface x Position x Deficit</td>
<td>2</td>
<td>184.07</td>
<td>92.03</td>
<td>1.82</td>
</tr>
<tr>
<td>Surface x Position x Species x Deficit</td>
<td>2</td>
<td>66.92</td>
<td>33.46</td>
<td>0.66</td>
</tr>
<tr>
<td>Deficit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual (c)</td>
<td>125</td>
<td>6323.59</td>
<td>50.59</td>
<td>(3)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td>141</td>
</tr>
</tbody>
</table>
Appendix 8.1

Figure A8.1. Relationship between leaf photosynthesis and a) leaf water potential and b) leaf turgor pressure (open symbols canola, closed mustard; circles Experiment 3, triangles Experiment 4 and squares Experiment 5).