LITERATURE CITED


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Butterworths, London.


*Kienitz, M. (1879). Vergleichende keimversuche mit waldbaumsamen aus klimatisch versch. gelegenen orten mitteleuropas (Diss Heidelberg 55 p.)


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Yim, Kyong-Bin; Hyo-Sub Park and Don-Ku Lee (1984). Seed viability of some conifers examined by X-ray contrast method and tetrazolium method. IUFRO Seed Symp. on method of production and quality control of forest seeds and seedlings. Curtiba (Brazil) pp. 471-477.


* Not seen in original.
Appendix I  Summary of Student "t" test among different viability
test in seeds of 10 forest tree species.

<table>
<thead>
<tr>
<th>Species</th>
<th>C vs T2</th>
<th>C vs T1</th>
<th>C vs HP</th>
<th>C vs G</th>
<th>T2 vs IC</th>
<th>T2 vs HP</th>
<th>T2 vs G</th>
<th>IC vs HP</th>
<th>IC vs G</th>
<th>HP vs G</th>
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<tbody>
<tr>
<td>A. arabica</td>
<td>59.33***</td>
<td>24.71***</td>
<td>31.19***</td>
<td>53.19***</td>
<td>8.33**</td>
<td>5.17*</td>
<td>5.86**</td>
<td>26.82***</td>
<td>75.60***</td>
<td>8.33**</td>
</tr>
<tr>
<td>A. catechu</td>
<td>40.42***</td>
<td>19.71***</td>
<td>152.38***</td>
<td>22.74***</td>
<td>5.73*</td>
<td>6.48*</td>
<td>2.81NS</td>
<td>6.16**</td>
<td>8.00**</td>
<td>2.64NS</td>
</tr>
<tr>
<td>C. fistula</td>
<td>8.02*</td>
<td>12.96***</td>
<td>4.19*</td>
<td>9.81**</td>
<td>4.22*</td>
<td>2.77NS</td>
<td>2.43NS</td>
<td>1.96NS</td>
<td>7.00**</td>
<td>3.27*</td>
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<tr>
<td>C. pontedra</td>
<td>16.32***</td>
<td>8.17**</td>
<td>24.71***</td>
<td>14.89***</td>
<td>16.65***</td>
<td>10.67**</td>
<td>1.18NS</td>
<td>16.56***</td>
<td>2.71NS</td>
<td>7.21*</td>
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<td>H. binata</td>
<td>1.26NS</td>
<td>2.12NS</td>
<td>4.76*</td>
<td>2.43NS</td>
<td>1.67NS</td>
<td>4.78*</td>
<td>2.43NS</td>
<td>4.76*</td>
<td>2.43NS</td>
<td>5.17*</td>
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<tr>
<td>L. carvalora</td>
<td>2.77NS</td>
<td>3.70*</td>
<td>3.82*</td>
<td>18.29***</td>
<td>3.84*</td>
<td>3.21*</td>
<td>8.33**</td>
<td>3.54*</td>
<td>26.82***</td>
<td>1.43NS</td>
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<tr>
<td>L. leucocephala</td>
<td>12.75**</td>
<td>12.93***</td>
<td>29.82***</td>
<td>20.40***</td>
<td>3.89*</td>
<td>4.89*</td>
<td>7.97**</td>
<td>2.61NS</td>
<td>56.09***</td>
<td>13.72**</td>
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<tr>
<td>P. tuliflora</td>
<td>24.15***</td>
<td>11.56**</td>
<td>41.46***</td>
<td>17.21***</td>
<td>6.08**</td>
<td>9.84**</td>
<td>2.24NS</td>
<td>11.56**</td>
<td>3.87*</td>
<td>6.37**</td>
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<tr>
<td>T. arjuna</td>
<td>2.77NS</td>
<td>2.05NS</td>
<td>40.74***</td>
<td>3.84*</td>
<td>2.82NS</td>
<td>8.93**</td>
<td>3.27*</td>
<td>17.21***</td>
<td>2.19NS</td>
<td>20.56***</td>
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<td>T. tomentosa</td>
<td>66.66***</td>
<td>61.90***</td>
<td>25.04***</td>
<td>33.66***</td>
<td>2.43NS</td>
<td>8.49**</td>
<td>12.03***</td>
<td>13.60***</td>
<td>10.20**</td>
<td>2.45NS</td>
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</table>
Summary of ANOVA for treatments with $\text{H}_2\text{SO}_4$, $\text{HNO}_3$ and $\text{HCl}$, on seed germination in different tree species.

**Acacia arabica**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of squares</th>
<th>Degree of freedom</th>
<th>Mean squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Between Duration</td>
<td>7103.57</td>
<td>12</td>
<td>691.96</td>
<td>2.62 *</td>
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<tr>
<td>2. Between Treatments</td>
<td>28941.74</td>
<td>2</td>
<td>14470.87</td>
<td>64.26 ***</td>
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<tr>
<td>3. Residual</td>
<td>5402.35</td>
<td>24</td>
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</table>
### A. catechu

<table>
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<th>Degree of freedom</th>
<th>Mean squares</th>
<th>F</th>
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</thead>
<tbody>
<tr>
<td>1. Between Duration</td>
<td>112.23</td>
<td>12</td>
<td>9.35</td>
<td>0.057&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>2. Between Treatments</td>
<td>493.11</td>
<td>2</td>
<td>246.55</td>
<td>1.51&lt;sup&gt;NS&lt;/sup&gt;</td>
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<tr>
<td>3. Residual</td>
<td>3921.25</td>
<td>24</td>
<td>163.01</td>
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### Cassia fistula

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<thead>
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<th>Mean squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Between Duration</td>
<td>10625.97</td>
<td>12</td>
<td>885.49</td>
<td>9.91&lt;sup&gt;***&lt;/sup&gt;</td>
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<td>2. Between Treatments</td>
<td>2449.58</td>
<td>2</td>
<td>1224.79</td>
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<td>3. Residual</td>
<td>2143.12</td>
<td>24</td>
<td>89.29</td>
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</table>
**Leucaena leucocephala**

<table>
<thead>
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<th>Source of Variation</th>
<th>Sum of squares</th>
<th>Degree of freedom</th>
<th>Mean squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Between Duration</td>
<td>5808.39</td>
<td>12</td>
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<td>29465.43</td>
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<td>14732.71</td>
<td>21.46&lt;sup&gt;***&lt;/sup&gt;</td>
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<td>3. Residual</td>
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**Prospis juliflora**

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<th>Mean squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Between Duration</td>
<td>5726.74</td>
<td>12</td>
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<td>0.81&lt;sup&gt;NS&lt;/sup&gt;</td>
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<td>1621.57</td>
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<td>810.78</td>
<td>1.37&lt;sup&gt;NS&lt;/sup&gt;</td>
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<td>3. Residual</td>
<td>14105.13</td>
<td>24</td>
<td>587.71</td>
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</tbody>
</table>

(Significance: * - 0.05, ** - 0.01, *** - 0.0001; NS - not significant).
Appendix - III

Summary of analysis of variance for temperature treatments in different tree species.

**Acacia arabica**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of squares</th>
<th>Degree of freedom</th>
<th>Mean squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Between Temperature</td>
<td>1558.86</td>
<td>6</td>
<td>259.81</td>
<td>5.01**</td>
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<td>2. Between replicate</td>
<td>196.85</td>
<td>3</td>
<td>65.61</td>
<td>1.26NS</td>
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<td>3. Residual</td>
<td>933.15</td>
<td>18</td>
<td>51.84</td>
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**Acacia catechu**

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<th>Degree of freedom</th>
<th>Mean squares</th>
<th>F</th>
</tr>
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<tbody>
<tr>
<td>1. Between Temperature</td>
<td>1947.42</td>
<td>6</td>
<td>324.57</td>
<td>14.51***</td>
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<td>2. Between replicate</td>
<td>91.38</td>
<td>3</td>
<td>30.46</td>
<td>1.05NS</td>
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<td>3. Residual</td>
<td>522.63</td>
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<td>29.03</td>
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### Ceiba pentandra

<table>
<thead>
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<th>Mean squares</th>
<th>F</th>
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<tr>
<td>1. Between Temperature</td>
<td>16096.00</td>
<td>6</td>
<td>2682.66</td>
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<td>2. Between replicate</td>
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<td>3. Residual</td>
<td>1114.88</td>
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<td>61.93</td>
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### Hardwickia binata

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<th>Degree of freedom</th>
<th>Mean squares</th>
<th>F</th>
</tr>
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<tbody>
<tr>
<td>1. Between Temperature</td>
<td>24198.85</td>
<td>6</td>
<td>4033.14</td>
<td>170.75***</td>
</tr>
<tr>
<td>2. Between replicate</td>
<td>46.85</td>
<td>3</td>
<td>15.61</td>
<td>0.66NS</td>
</tr>
<tr>
<td>3. Residual</td>
<td>425.16</td>
<td>18</td>
<td>23.62</td>
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### Leucaena leucocephala

<table>
<thead>
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<th>Source of Variation</th>
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<th>Mean squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Between Temperature</td>
<td>1037.72</td>
<td>6</td>
<td>172.95</td>
<td>6.13**</td>
</tr>
<tr>
<td>2. Between replicate</td>
<td>244.00</td>
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<td>81.33</td>
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### Prosopis juliflora

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<td>9368.86</td>
<td>6</td>
<td>1561.47</td>
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<td>11.85</td>
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<td>3. Residual</td>
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**Terminalia arjuna**

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**Terminalia tomentosa**

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(Significance: * - 0.05, ** - 0.01, *** - 0.001; NS - not significant).
APPENDIX - IV

Categories of seeds prepared on the basis of different seed morphological attributes.

<table>
<thead>
<tr>
<th>Weight (g)</th>
<th>Length (mm)</th>
<th>Breadth (mm)</th>
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<tbody>
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<td></td>
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<tr>
<td><strong>Acacia arabica</strong></td>
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<td></td>
</tr>
<tr>
<td>1. 0.0605 - 0.0913</td>
<td>5.6 - 6.4</td>
<td>4.4 - 4.95</td>
</tr>
<tr>
<td>2. 0.0914 - 0.1221</td>
<td>6.5 - 7.2</td>
<td>5.0 - 5.5</td>
</tr>
<tr>
<td>3. 0.1222 - 0.1529</td>
<td>7.3 - 8.0</td>
<td>5.6 - 6.05</td>
</tr>
<tr>
<td>4. 0.1530 - 0.1837</td>
<td>8.1 - 8.8</td>
<td>6.06 - 6.6</td>
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<td></td>
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<td>1. 0.0375 - 0.0505</td>
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<td>5.4 - 6.0</td>
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<td>2. 0.0506 - 0.0635</td>
<td>6.6 - 7.4</td>
<td>6.1 - 6.7</td>
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<td>3. 0.0636 - 0.0765</td>
<td>7.5 - 8.3</td>
<td>6.8 - 7.3</td>
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<td>4. 0.0766 - 0.0895</td>
<td>8.4 - 9.3</td>
<td>7.4 - 8.0</td>
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<td><strong>Ceiba pentendra</strong></td>
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<td>3. 0.0444 - 0.0623</td>
<td>4.7 - 5.2</td>
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### APPENDIX - IV Continued.

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</tr>
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<td>1. 0.1145 - 0.1538</td>
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<td>7.5 - 8.6</td>
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<td>3. 0.1932 - 0.2324</td>
<td>19.5 - 21.5</td>
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<td>4. 0.2325 - 0.2717</td>
<td>21.6 - 23.58</td>
<td>9.9 - 11.0</td>
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<tr>
<td>1. 0.0142 - 0.0302</td>
<td>6.5 - 7.1</td>
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<td>2. 0.0303 - 0.0462</td>
<td>7.2 - 7.7</td>
<td>4.4 - 4.7</td>
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<td>8.4 - 8.9</td>
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<td>2.2 - 2.7</td>
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<td>2.8 - 3.3</td>
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<td>5.5 - 6.4</td>
<td>3.4 - 3.9</td>
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<tr>
<td>4. 0.0358 - 0.0431</td>
<td>6.5 - 7.5</td>
<td>4.0 - 4.5</td>
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</tbody>
</table>
APPENDIX - V

LIST OF PLANTS

1. *Acacia arabica*, Willd.
2. *Acacia catechu*, Willd.
3. *Cassia fistula*, Linn.
8. *Prosopis juliflora*, D.C.
10. *Terminalia tomentosa*, W. and A.