## Additional file 1: Table of recorded phenotypes and association to phenotype classes

Trait numbers and colors of phenotype classes correspond to Figure 1, Figure 4, and Additional files 3 and 16.

<table>
<thead>
<tr>
<th>Trait / phenotype class</th>
<th>Morphological marker / time point</th>
<th>Unit</th>
<th># trait</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Juvenile vegetative stage</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Germination</td>
<td>radicle emergence</td>
<td>days</td>
<td>1</td>
</tr>
<tr>
<td>Seedling establishment</td>
<td>Cotyledons opened fully</td>
<td>days</td>
<td>2</td>
</tr>
<tr>
<td>2 rosette leaves</td>
<td>leaf &gt; 1mm in length</td>
<td>days</td>
<td>3</td>
</tr>
<tr>
<td>3 rosette leaves</td>
<td>leaf &gt; 1mm in length</td>
<td>days</td>
<td>4</td>
</tr>
<tr>
<td>4 rosette leaves</td>
<td>leaf &gt; 1mm in length</td>
<td>days</td>
<td>5</td>
</tr>
<tr>
<td>5 rosette leaves</td>
<td>leaf &gt; 1mm in length</td>
<td>days</td>
<td>6</td>
</tr>
<tr>
<td><strong>Juvenile vegetative stage</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 rosette leaves</td>
<td>leaf &gt; 1mm in length</td>
<td>days</td>
<td>7</td>
</tr>
<tr>
<td>7 rosette leaves</td>
<td>leaf &gt; 1mm in length</td>
<td>days</td>
<td>8</td>
</tr>
<tr>
<td>8 rosette leaves</td>
<td>leaf &gt; 1mm in length</td>
<td>days</td>
<td>9</td>
</tr>
<tr>
<td>9 rosette leaves</td>
<td>leaf &gt; 1mm in length</td>
<td>days</td>
<td>10</td>
</tr>
<tr>
<td>10 rosette leaves</td>
<td>leaf &gt; 1mm in length</td>
<td>days</td>
<td>11</td>
</tr>
<tr>
<td>11 rosette leaves</td>
<td>leaf &gt; 1mm in length</td>
<td>days</td>
<td>12</td>
</tr>
<tr>
<td>12 rosette leaves</td>
<td>leaf &gt; 1mm in length</td>
<td>days</td>
<td>13</td>
</tr>
<tr>
<td>13 rosette leaves</td>
<td>leaf &gt; 1mm in length</td>
<td>days</td>
<td>14</td>
</tr>
<tr>
<td>14 rosette leaves</td>
<td>leaf &gt; 1mm in length</td>
<td>days</td>
<td>15</td>
</tr>
<tr>
<td><strong>Reproductive stage</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflorescence emergence</td>
<td>First flower buds visible</td>
<td>days</td>
<td>16</td>
</tr>
<tr>
<td>Flowering time_days</td>
<td>Inflorescence &gt; 1cm</td>
<td>days</td>
<td>17</td>
</tr>
<tr>
<td>Flowering time_n leaves</td>
<td>Inflorescence &gt; 1cm</td>
<td>no. of leaves</td>
<td>18</td>
</tr>
<tr>
<td>Flowering time_1. flower open</td>
<td>First flower fully opened</td>
<td>days</td>
<td>19</td>
</tr>
<tr>
<td>Silique production</td>
<td>Appearance of first silique</td>
<td>days</td>
<td>20</td>
</tr>
<tr>
<td><strong>Morphometric phenotypes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypocotyl length</td>
<td>7 days old seedlings</td>
<td>pixels</td>
<td>21</td>
</tr>
<tr>
<td>Petiole angle</td>
<td>7 days old seedlings</td>
<td>degree</td>
<td>22</td>
</tr>
<tr>
<td>Primary root length</td>
<td>7 days old seedlings</td>
<td>pixels</td>
<td>23</td>
</tr>
<tr>
<td>Petiole length</td>
<td>20 days old plants</td>
<td>pixels</td>
<td>24</td>
</tr>
<tr>
<td>Chlorophyll content (a+ b)</td>
<td>14 days old plants</td>
<td>µg/mg FW</td>
<td>25</td>
</tr>
<tr>
<td>Total leaf area (i.e., foliar surface)</td>
<td>Inflorescence &gt; 1cm</td>
<td>mm²</td>
<td>26</td>
</tr>
<tr>
<td>Plant height</td>
<td>First silique shattered</td>
<td>cm</td>
<td>27</td>
</tr>
<tr>
<td><strong>Yield-associated phenotypes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seed area</td>
<td>Post harvesting</td>
<td>pixels</td>
<td>28</td>
</tr>
<tr>
<td>Seed length</td>
<td>Post harvesting</td>
<td>pixels</td>
<td>29</td>
</tr>
<tr>
<td>Seed weight</td>
<td>Post harvesting</td>
<td>µg</td>
<td>30</td>
</tr>
<tr>
<td>Total number of seeds per plant</td>
<td>Post harvesting</td>
<td>no./plant</td>
<td>31</td>
</tr>
<tr>
<td>Total number of seeds per silique</td>
<td>Post harvesting</td>
<td>no./silique</td>
<td>32</td>
</tr>
<tr>
<td>Silique length</td>
<td>Post harvesting</td>
<td>mm</td>
<td>33</td>
</tr>
<tr>
<td>Total number of siliques per plant</td>
<td>First silique shattered</td>
<td>no./plant</td>
<td>34</td>
</tr>
</tbody>
</table>