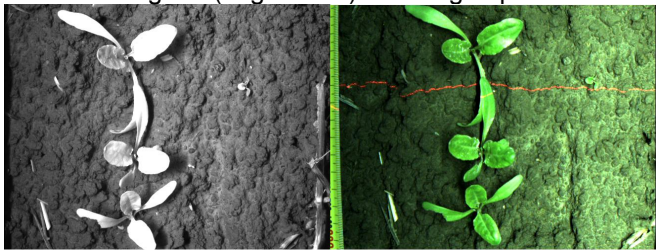

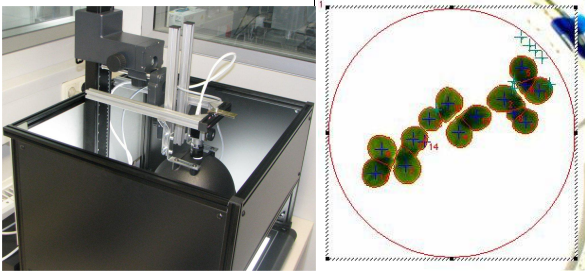
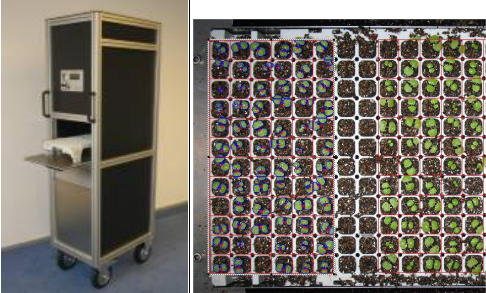
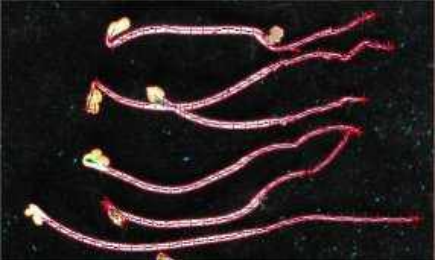
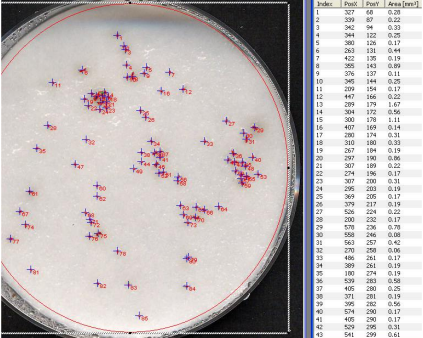



# medeaLAB Crop Science Applications in research and industry



The medeaLAB Imaging Systems are products of Medea AV Multimedia & Software GmbH, founded in 1997 by the biologists **Christian Kühnel-Kratz** and **PhD sc. Kurt Vogel**. Our Vision Systems are based on more than 20 years of experience in digital image analysis.

Branch	Application	Methods
Agriculture	<p>Beta vulgaris (sugar beet) seedling separation</p> 	<p>Laser line profile for height measurement and NIR imaging for plant detection</p>
Molecular genetics	<p>DNA sequencing of plant tissue samples</p> 	<p>Detection of small samples in tube racks using large telecentric optics</p>

<p>Ecotoxicology</p>	 <p>Lemna minor (duckweed) growth inhibition test</p>	<p>Leaf count and classification of bleaching</p>																																																																																																																																																																																
<p>Plant breeding</p>	<p>TrayScan – Mobile device for efficient evaluation of trays in glass houses</p> 	<p>Detection of seedlings growth</p>																																																																																																																																																																																
<p>Plant physiology research</p>	<p>Seedling radicles</p> 	<p>Root length measurement</p>																																																																																																																																																																																
<p>Seed manufacturing</p>	<p>Germination rate determination for seed quality control</p>  <table border="1" data-bbox="820 1301 932 1637"> <thead> <tr> <th>Index</th> <th>Perim.</th> <th>Perim.</th> <th>Area [mm²]</th> </tr> </thead> <tbody> <tr><td>1</td><td>327</td><td>421</td><td>0.28</td></tr> <tr><td>2</td><td>324</td><td>417</td><td>0.22</td></tr> <tr><td>3</td><td>342</td><td>428</td><td>0.23</td></tr> <tr><td>4</td><td>344</td><td>422</td><td>0.25</td></tr> <tr><td>5</td><td>365</td><td>424</td><td>0.17</td></tr> <tr><td>6</td><td>323</td><td>431</td><td>0.44</td></tr> <tr><td>7</td><td>422</td><td>428</td><td>0.19</td></tr> <tr><td>8</td><td>355</td><td>443</td><td>0.69</td></tr> <tr><td>9</td><td>376</td><td>427</td><td>0.41</td></tr> <tr><td>10</td><td>346</td><td>444</td><td>0.25</td></tr> <tr><td>11</td><td>399</td><td>454</td><td>0.17</td></tr> <tr><td>12</td><td>447</td><td>466</td><td>0.22</td></tr> <tr><td>13</td><td>399</td><td>479</td><td>1.67</td></tr> <tr><td>14</td><td>304</td><td>472</td><td>0.56</td></tr> <tr><td>15</td><td>365</td><td>478</td><td>1.11</td></tr> <tr><td>16</td><td>407</td><td>469</td><td>0.14</td></tr> <tr><td>17</td><td>388</td><td>474</td><td>0.15</td></tr> <tr><td>18</td><td>310</td><td>480</td><td>0.53</td></tr> <tr><td>19</td><td>257</td><td>484</td><td>0.18</td></tr> <tr><td>20</td><td>275</td><td>490</td><td>0.86</td></tr> <tr><td>21</td><td>357</td><td>489</td><td>0.22</td></tr> <tr><td>22</td><td>274</td><td>496</td><td>0.17</td></tr> <tr><td>23</td><td>357</td><td>500</td><td>0.31</td></tr> <tr><td>24</td><td>295</td><td>503</td><td>0.19</td></tr> <tr><td>25</td><td>364</td><td>505</td><td>0.17</td></tr> <tr><td>26</td><td>375</td><td>517</td><td>0.19</td></tr> <tr><td>27</td><td>520</td><td>524</td><td>0.22</td></tr> <tr><td>28</td><td>292</td><td>522</td><td>0.17</td></tr> <tr><td>29</td><td>470</td><td>526</td><td>0.78</td></tr> <tr><td>30</td><td>506</td><td>546</td><td>0.08</td></tr> <tr><td>31</td><td>553</td><td>557</td><td>0.42</td></tr> <tr><td>32</td><td>275</td><td>558</td><td>0.06</td></tr> <tr><td>33</td><td>486</td><td>561</td><td>0.17</td></tr> <tr><td>34</td><td>365</td><td>561</td><td>0.19</td></tr> <tr><td>35</td><td>180</td><td>574</td><td>0.19</td></tr> <tr><td>36</td><td>526</td><td>583</td><td>0.08</td></tr> <tr><td>37</td><td>452</td><td>580</td><td>0.25</td></tr> <tr><td>38</td><td>375</td><td>581</td><td>0.19</td></tr> <tr><td>39</td><td>395</td><td>582</td><td>0.56</td></tr> <tr><td>40</td><td>474</td><td>590</td><td>0.17</td></tr> <tr><td>41</td><td>405</td><td>590</td><td>0.17</td></tr> <tr><td>42</td><td>520</td><td>595</td><td>0.18</td></tr> <tr><td>43</td><td>541</td><td>599</td><td>0.61</td></tr> </tbody> </table>	Index	Perim.	Perim.	Area [mm²]	1	327	421	0.28	2	324	417	0.22	3	342	428	0.23	4	344	422	0.25	5	365	424	0.17	6	323	431	0.44	7	422	428	0.19	8	355	443	0.69	9	376	427	0.41	10	346	444	0.25	11	399	454	0.17	12	447	466	0.22	13	399	479	1.67	14	304	472	0.56	15	365	478	1.11	16	407	469	0.14	17	388	474	0.15	18	310	480	0.53	19	257	484	0.18	20	275	490	0.86	21	357	489	0.22	22	274	496	0.17	23	357	500	0.31	24	295	503	0.19	25	364	505	0.17	26	375	517	0.19	27	520	524	0.22	28	292	522	0.17	29	470	526	0.78	30	506	546	0.08	31	553	557	0.42	32	275	558	0.06	33	486	561	0.17	34	365	561	0.19	35	180	574	0.19	36	526	583	0.08	37	452	580	0.25	38	375	581	0.19	39	395	582	0.56	40	474	590	0.17	41	405	590	0.17	42	520	595	0.18	43	541	599	0.61	<p>Classification of germination state</p>
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