**Supplementary\_Data\_Sheet\_S5:** Twelve relevant biomass-related, architectural and color-related traits extracted from top-view (TOP) images taken in the IPK phenotyping facility by visible-light (VIS) or fluorescence (FLUOR) cameras. (Selection) indicates whether the parameter was used for automated image pre-processing and segmentation in the Integrated Analysis Plattform (IAP, Klukas et al., 2014).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **LemnaTec trait** | **imaging modality** | **imaging view** | **trait type** | **Selection** |
| hsv h red2green (color-related trait based on visible-light top view) | VIS | TOP | color | YES |
| hsv h mean (color-related trait based on visible-light top view) | VIS | TOP | color | YES |
| intensity mean (color-related trait based on fluorescence top view) | FLUOR | TOP | intensity | YES |
| rgb green mean (color-related trait based on visible-light top view) | VIS | TOP | color | YES |
| rgb red mean (color-related trait based on visible-light top view) | VIS | TOP | color | YES |
| lab a mean (color-related trait based on visible-light top view) | VIS | TOP | color | YES |
| hsv h yellow2green (color-related trait based on visible-light top view) | VIS | TOP | color | YES |
| hull compactness 16 (geometry trait based on visible-light top view) | VIS | TOP | architectural | YES |
| compactness 16 (geometry trait based on visible-light top view) | VIS | TOP | architectural | YES |
| border length (geometry trait based on visible-light top view) [px] | VIS | TOP | architectural | YES |
| area (geometry trait based on visible-light top view) [px^2] | VIS | TOP | biomass-related | YES |
| hull fillgrade (geometry trait based on fluorescence top view) [%] | FLUOR | TOP | architectural | YES |