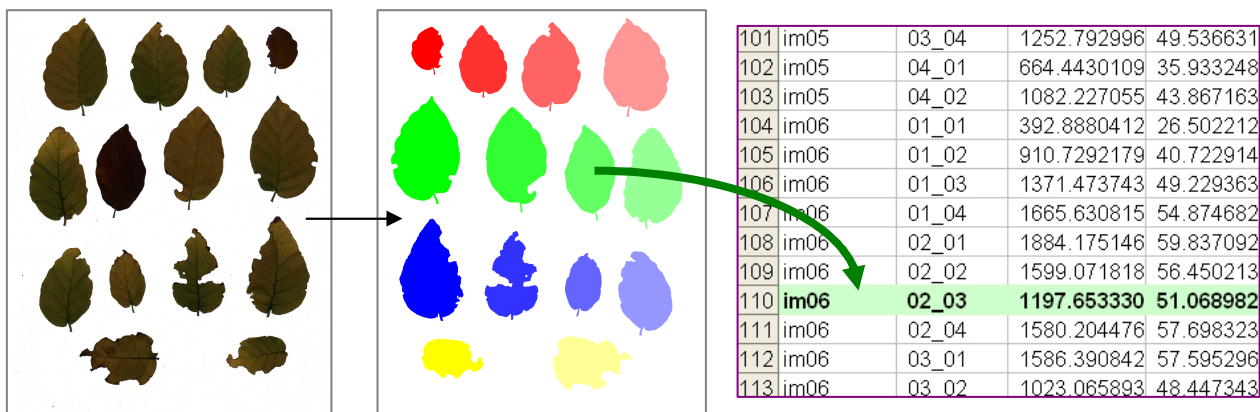# Surfol – Which plugins ?

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The Surfol family works from numerical images to:

- ✓ compute the area of leaves disposed on several lines
- ✓ order the results according to the natural reading order of the image: from left to right side, from top to bottom.

These tools are been developed for statistical studies where a great images number has to be treated. The images are successively processed and all the results are saved into one (or several) text file(s). An a posteriori checking of the results is made from output images produced during the treatment in which the different measured structures are shown following simple coloration rules: the used hue and saturation avoid quickly to find again the numerical result in the output text file.

101	im05	03_04	1252.792996	49.536631
102	im05	04_01	664.4430109	35.933248
103	im05	04_02	1082.227055	43.867163
104	im06	01_01	392.8880412	26.502212
105	im06	01_02	910.7292179	40.722914
106	im06	01_03	1371.473743	49.229363
107	im06	01_04	1665.630815	54.874682
108	im06	02_01	1884.175146	59.837092
109	im06	02_02	1599.071818	56.450213
110	**im06**	**02_03**	**1197.653330**	**51.068982**
111	im06	02_04	1580.204476	57.698323
112	im06	03_01	1586.390842	57.595296
113	im06	03_02	1023.065893	48.447343

At left: the native *im06.jpg* image of the folder to process; the leaves are disposed line per line onto the scanner pane; *the image is seen from above: the left and right sides are inverted*.

At center: the visual result of the treatment: each leaf is segmented and displayed with a color corresponding to its position in the image: a different hue for each line in the image, a different saturation for each row in the line; *the image is reversed by vertical symmetry; the leaves are shown as the user sees them on the scanner pan.*

At right: in the output text file, the link between leaf and numerical values is made by the index given to each line of the file; this index is built from the position of the leaf in the image, given by the line number and row in the line. For sample, the third leaf of the second line in the central image is registered in the line named im06_02_03 of the results file.

With or without aids?

The aids are accessories disposed in the image to give some information on the study objects: identifiants, sizes… The aids should be excluded from the treatment to not perturb the results a specific step will be applied to look for and suppress aids from each image.

Plugins / Images		
Aids: additional elements introduced during the digitizing	No	