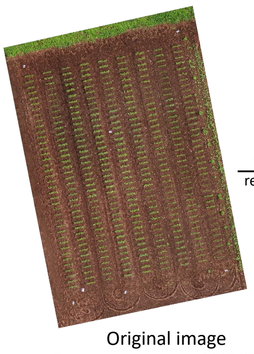
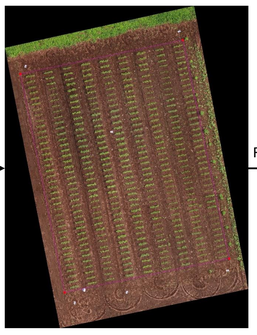
Semi-automatic segmentation : global pipeline visually explained

× = steps using user inputs

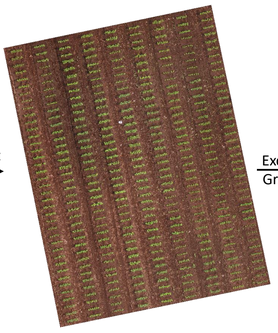


Original image
Tanashi field (soybean, 2017 07 10)

Selection of the region of interest ×

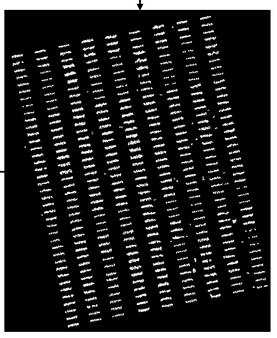


ROI cut

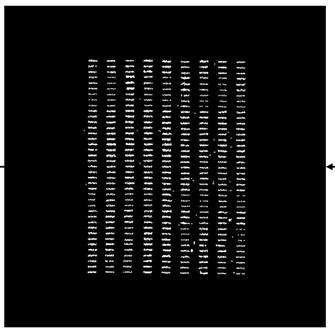


Excess Green

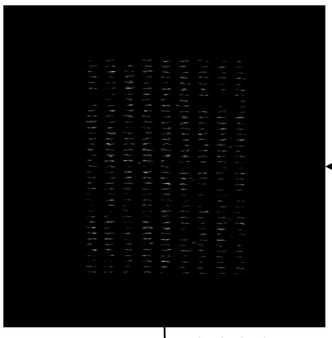
Binarization and noise removal ×



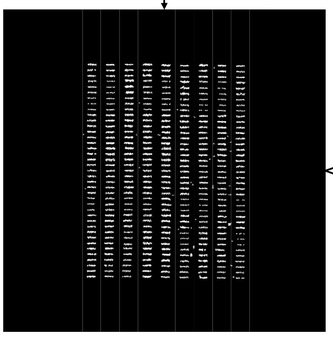
Rotation ×



Skeletonization and image manipulation



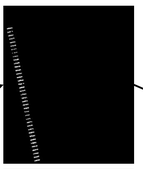
Individual columns identification

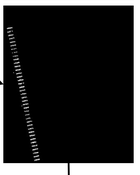


Cutting of individual columns

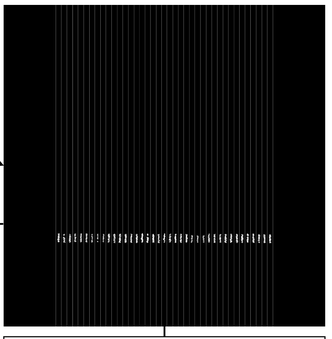
"Core" region (no intercolumn)

Full width

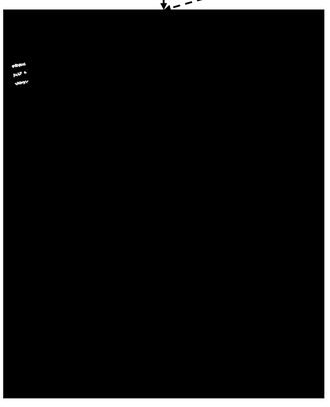




Rotation and row localisation



Cropping



*.csv of all the plot coordinates

Metadata file containing: inputs, folder paths, calculated parameters

*.shp folder with all the plots shp

*.csv of the plot coordinates in the drone raw images

Reverse calculation ×

Inputs (manual) :
- Field image (georeferenced or not, can be binary)
- Field delimitations (drawn)
- Noise removal
- Global orientation of the columns
- Reverse calculation inputs (Digital Surface Model, offset, Pmatrix, raw images folder)

Main outputs :
- Binary image (if not inputted)
- All microplots images (georeferenced if the original image is)
- All individual microplots *.shp files
- Global microplots shapefile (merge of individual shp)
- All microplots coordinates in raw drone images
- All microplots corners coordinates (pixel +/- georeferenced, depending on the original file)
- Metadata file (summarizing all inputs)

NOTE : please understand that the output images can vary because of the field delimitation even with the same other inputs.