

- Devices
  - BFS-U3-32S4C-C  
<https://www.ptgrey.com/blackfly-s-32-mp-color-usb3-vision-sony-imx252>
  - LM5JC1M  
[http://www.kowa-optical.co.jp/fa/e/products/wide\\_megapixel.html](http://www.kowa-optical.co.jp/fa/e/products/wide_megapixel.html)
  
- Setup of devices
  - F-number of each lens was manually set to F16.
  - Automatic control of white balance and gain was turned off.
  - Exposure time was manually set.
  - Demosaicing method is “Directional.”  
<https://www.ptgrey.com/KB/10141>
  - Distance between cameras was manually set to capture all leaves in all cameras
  
- Images
  - original images: RGB images from each camera
  - plant images: images containing one plant
  - label images: images containing manually assigned labels for leaves in plant images
  - images for calibration: images containing a chessboard and a color checker
  
- Naming rules of images
  - Parameters
    - ◇ AA: camera ID from 00 to 02
    - ◇ BB: plant ID from 00 to 04
    - ◇ CCC: day ID from 000 to 009
    - ◇ DD: time ID from 00 to 05
    - ◇ EEE: capture number

Note that one day starts at 3 p.m. and ends at 3 p.m. next day, and images are captured every 4 hours in one day.
  - File names
    - ◇ original images: rgb\_AA\_CCC\_DD.png
    - ◇ plant images: rgb\_AA\_BB\_CCC\_DD.png
    - ◇ label images: label\_AA\_BB\_CCC\_DD.png
    - ◇ images for calibration : AA\_EEE.png for geometric camera calibration and AA.png for color calibration if necessary

- Leaf colors in label images

Leaf colors in plant images are common and determined from the oldest as follows.

| From oldest | R   | G   | B   |
|-------------|-----|-----|-----|
| 1           | 0   | 0   | 255 |
| 2           | 0   | 255 | 0   |
| 3           | 0   | 255 | 255 |
| 4           | 255 | 0   | 0   |
| 5           | 255 | 0   | 255 |
| 6           | 255 | 255 | 0   |
| 7           | 128 | 128 | 128 |
| 8           | 0   | 0   | 128 |

- Camera arrangement

Camera ID is determined as follows.

| position | camera ID |
|----------|-----------|
| right    | 00        |
| center   | 01        |
| left     | 02        |

- ID, position and size of plants in original images

| camera ID | plant ID | upper left coord. | (width, height) |
|-----------|----------|-------------------|-----------------|
| 00        | 00       | (30,210)          | (480,480)       |
| 00        | 01       | (990,240)         | (480,480)       |
| 00        | 02       | (510,460)         | (480,480)       |
| 00        | 03       | (960,710)         | (480,480)       |
| 00        | 04       | (0,670)           | (544,480)       |
| 01        | 00       | (280,210)         | (480,480)       |
| 01        | 01       | (1240,240)        | (480,480)       |
| 01        | 02       | (760,460)         | (480,480)       |
| 01        | 03       | (1210,710)        | (480,480)       |
| 01        | 04       | (230,680)         | (544,480)       |
| 02        | 00       | (640,220)         | (480,480)       |
| 02        | 01       | (1568,220)        | (480,480)       |
| 02        | 02       | (1110,460)        | (480,480)       |
| 02        | 03       | (1540,710)        | (480,480)       |
| 02        | 04       | (600,690)         | (544,480)       |

