*High-throughput, image-based phenotyping reveals nutrient-dependent growth facilitation in a grass - legume mixture*

*Ball et al. 2020 – PlosOne*

SUPPLEMENTARY DATA FILES

The following data sets are provided as part of the Supplementary Materials for the above-named publication.

**Ball\_etal\_PlosOne\_longitudinal\_image\_data**

Longitudinal image-summary data of Projected Shoot Area (PSA): 240 half-carts x 43 imaging days

Each record includes the following fields:

* Half-cart name and treatment group (columns 1 to 6)
* Imaging day (DAP, column 7)
* Raw (PSA) and smoothed (sPSA) data for Projected Shoot Area (*units:* kpixels)
* sPSA AGR: Absolute growth rate (*units:* kpixels/day) based on smoothed PSA
* sPSA RGR: Relative growth rate (*units:* per day) based on smoothed PSA.

Abbreviations and measurement units provided in separate sheet.

**Ball\_etal\_PlosOne\_trait\_data**

Data for statistical analysis: 240 half-carts, fields for various days and time intervals and selected foliar and harvest data

Each record includes the following fields:

* Half-cart name and treatment group (columns 1 to 6)
* Numerical trait values for analysis.

Abbreviations and measurement units provided in separate sheet.

**Ball\_etal\_PlosOne\_model\_traits**

Output from statistical analysis: 16 treatment combinations x 22 traits; 4 treatment combinations x 1 trait

Each record includes the following fields:

* Trait name and measurement units (columns 1 and 2)
* Treatment group (columns 3 to 6)
* Model prediction for this trait and treatment (column 7) with standard error (SE) and half-LSD error bar (columns 8 to 10).

Abbreviations and measurement units provided in separate sheet.

**Ball\_etal\_PlosOne\_overyield\_data**

Raw data (dry weight) and smoothed Projected Shoot Area for Day after Planting 70 used for overyield calculations:

Each record includes the following fields:

* Half-cart name and treatment group (columns 1 to 6)
* Dry weight and sPSA at DAP 70

Abbreviations and measurement units provided in separate sheet.

**Raw image collection**

The raw images collected for this project are available for bulk download here:

<https://data.pawsey.org.au/download/APPF/public_experiments/0444_PH_UWSyd_Ball_Various.tar>

The image collection contains all images collected. However, only three images per pot and time point were used that were at suitable angles to separate the two halves of the pots.

The TAR file (comparable to zip) containing all images. 7zip or winzip can open tar files on Windows. Mac or Linux users can unzip with the command “tar -xf <filename.tar>” from a Terminal window.

Within the tar file, each experiment folder contains one folder per snapshot (where a snapshot is the collection of images of a single pot at a given time point), then each snapshot folder contains a folder for each camera and that folder contains a single image.

The snapshot directories are named as follows:

 <measurement\_label>\_<id\_tag>\_<time\_stamp>\_<blob\_id>

Where:

* measurement\_label is consistent for the experiment (0444\_PH\_UWSyd\_Ball\_Various)
* id\_tag is the unique identifier for the pot (identifier used in all data files)
* time\_stamp is the imaging time as YYYY-MM-DD\_HH-MM-SS
* blob\_id is a database specific identifier that can be ignored