**How to interpret the data files**

The raw trait measurements are provided in files with names like ZxxxVD.DAT, where xxx is the site code with key as follows:



NPSU = number of leaves or equivalent photosynthetic units (PSU) on a terminal shoot sample

LENGTH = length in mm of up to 10 randomly chosen, representative leaves.

WIDTH = width in mm of the same set of leaves.

THICK = leaf thickness of up to 10 randomly chosen, representative leaves in mm.

FRESH.WT = fresh weight of a sample of leaves in g.

*The number of leaves in the sample is the corresponding value in the NPSU row.*

DRY.WT = dry weight of same sample in g.

*The number of leaves in the sample is the corresponding value in the NPSU row.*

WT.STALK = dry weight of stem (g) from which leaf sample for which corresponding values for NPSU, FRESH.WT and DRY.WT were obtained.

AREA = area in cm2 of up to 10 randomly chosen, representative leaves.

INCLIN = inclination in degrees from horizontal, unsigned.

VOL.CHL, FW.CHL, A647, A664 = data for calculation of leaf total chlorophyll (% dry weight) and chlorophyll a/b ratio (corresponding values in each row for usually three pooled samples). Conversion formulae:

// CHLA = (12.7\*A664 - 2.79\*A647)/FW.CHL\*VOL.CHL\*1E-4 (%)

// CHLB = (20.7\*A647 - 4.62\*A664)/FW.CHL\*VOL.CHL\*1E-4 (%)

// CHLT = (17.9\*A647 - 8.08\*A664.5)/FW.CHL\*VOL.CHL\*1E-4 (%)

// CHLAB = CHLA / CHLB (dimensionless)

N = leaf total nitrogen in ppm on dry weight basis.

P = leaf total phosphorus in ppm on dry weight basis.

**Deriving traits from raw data**

Values recorded for AREA, THICKNESS, INCLINATION, N and P may be used directly.

Other ‘useful’ traits need to be calculated. The key ones are:

Leaf aspect ratio = LENGTH / WIDTH

Succulence (dimensionless) = FRESH.WT / DRY.WT

Support fraction (dimensionless) = WT.STALK / (DRY.WT + WT.STALK)

Leaf dry weight (g) = DRY.WT / NPSU

Specific leaf area (SLA, gcm−2) = average (AREA) / average (Leaf dry weight)

*Needs to be calculated on averages as different samples used to determine AREA versus DRY.WT. One value per species and site.*

Total chlorophyll (%) = (17.9\*A647 - 8.08\*A664.5)/FW.CHL\*VOL.CHL\*1E-4 (%)

Chlorophyll a/b ratio (dimensionless):

CHLA = (12.7\*A664 - 2.79\*A647)/FW.CHL\*VOL.CHL\*1E-4 (%)

CHLB = (20.7\*A647 - 4.62\*A664)/FW.CHL\*VOL.CHL\*1E-4 (%)

CHLAB = CHLA / CHLB