

Plant traits metadata

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Introduction

In this data sheet all measured plant functional traits are recorded. The data sheet contains the unique species and plot ID and the respective measured species. With it, vegetative and generative height (not stretched and stretched) are measured, the leaf and air temperature as well as the Specific Leaf Area (SLA).

Table 1. General information

project_name	ETH+ Arctic Greening
creation_date	2024-11-12
last_modification_date	2025-04-13
sampling_period	2022-07-09 – 2023-08-09
creator	Jana Ruethers
contact_1	jana.ruethers@usys.ethz.ch
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number_samples	192
processing_status	complete
upload_status	structured

Table 2. Variable overview

variable	explanation	unit
species_id	Unique species_id per observation	-
plot_id	plot_id of the respective observations	-
species	Identified species per observation	
height_veg	Measured vegetative height	mm
height_gen	Measured generative height	mm
stretched_veg	Measured vegetative height in stretched form	mm
stretched_gen	Measured generative height in stretched form	mm
leaf_temp_C	Measured leaf temperature	°C
air_temp_C	Measured air temperature	°C
tleaf_tair	Ratio of leaf / air temperature	-
sla	Specific Leaf Area	-

Methods

Sample processing

Species height and temperature were directly measured in the field. Per soil plot, five healthy and adult individuals were chosen to be measured for plant height. The non-stretched height is measured as the distance between the ground level and highest foliage of the plant, leaving the plant in natural growth form. The stretched height is the distance between the ground level and highest foliage of the plant when stretched. If the inflorescence was present, also the generative height was measured. Values per soil plot exhibit the mean value of four to five individuals for vegetative height and one to five individuals for generative height. For leaf temperature, an infrared thermometer (IR 802, Urceri) was placed 1-2 cm away from an undamaged leaf with. Air temperature was measured at the same time on ground level (HOBO Pendant UA-001-64 Temperaturelogger). For SLA (fresh leaf surface area divided by its oven-dry mass), an adult, undamaged leaf per individual was used. Per soilplot, only one individual was measured. The leaves of the graminoids were cut just beneath the ligule excluding the sheath.

Sample analysis

The leaves for SLA were stored in an envelope and scanned in the respective evening (CanoScan LiDE 400) in order to get the fresh leaf surface area. In order to make the measurements more consistent, petioles were removed from the leaf before scanning. After scanning, they were stored in a box with silica gel for transport. To obtain a value for the dry mass, the leaves were dried at 60°C to constant weight for at least 24 hours before weighing (0.0001 mg accuracy; Mettler Toledo xs 205).

References

NA