

## General information about the phenotyping platform

### Growth area:

Total area	Available	Comments
26 belts with 14 carriers/belt	24 belts	2 belts (A&Z) occupied by Border trees
728 carriers - 364 used as spacers	336 carriers	28 carriers occupied by Border trees*

\*Border trees are not part of your experiment, and you will not be charged for the amplification/growth costs.

### Photoperiod

Day length	Night length	Comments
18h	6h	Can be changed if all users agree on it

### Possible automatic treatments:

Treatment type	Time	Data provided	Comments
Watering and weighing	- Every morning - Every second afternoon	Pot weight (g) and volume added (ml)	Data is accessible in PIPPA
Height measurement	Every second afternoon	Height (mm)	Data is accessible in PIPPA. <b><i>Always connected to imaging</i></b>
Infrared Images (top)	Every second afternoon	Pictures	Data is accessible in PIPPA
RGB top Image	Every second afternoon	Pictures	Data is accessible in PIPPA
RGB side Image	Every second afternoon	Pictures	Data is accessible in PIPPA
RGB Stem Image	Every second afternoon (starts from w5 or w6 and requires the removal of lower leaves from the stem)	Stem width (pixels)	Data is accessible through database interface PIPPA <b><i>at the end of the experiment</i></b>
Fertilization	Together with Imaging, every second afternoon	Pot weight (g) and volume added (ml)	Data is accessible in PIPPA. <b><i>Fertilizer added as a fixed volume</i></b>
Randomization	Every evening	-	Shifting of 3 rows Not on drought stress experiments

*Automatic treatments always start 2 weeks after the start of the experiment (after removal of bags)*

### Manual treatments performed at phenotyping platform:

Treatment	Time	Comments
Cutting corners of bags	1 week after planting	
Removing bags	2 weeks after planting	
Nemasys (against flies)	w4 and w6 (7) after planting	Applied by users according to the schedule
Adding supporting sticks	During the experiment	Performed by users

Removal of lateral shoots and lower leaves	W4 and w6 after planting and whenever needed	Performed by users
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For typical growth experiments **ALL 336 plants** on the platform are randomized and the same treatments are applied. ***If some of your plants require special treatments, then they must be a multiple of 14 so that they occupy full belts and they will be randomized within each treatment. Please specify this in the form!***

#### Possible experiment types on the platform

Type	Automatic control	Comments
Typical growth	Water/fertilizer applied	Typical 8 weeks long
Drought stress	Water applied	Number of trees/treatments must be a <b>multiple of 14</b> ;
Short days	Day length	All users must agree on it
Nutrient uptake	Volume of solution applied	Only <b>one type of solution</b> can be applied but the volume can vary; no. of trees must be a <b>multiple of 14</b>

***Additional manual treatments or measurements during the experiment can be performed by the groups*** (for example adding different solutions/fertilizers, measurements using special equipment, etc.) but they ***must be discussed before*** so that we find the best way to be performed.

#### What the groups must provide for each activity

Activity	Description
Planting	<b>5 persons /experiment</b> plus one back up
Harvesting	<ul style="list-style-type: none"> <li>- No. of persons depends on the no. of trees and samples collected. Can take 1-2 days.</li> <li>- Groups must provide collecting tubes labelled, liquid nitrogen/dry ice, special tools.</li> </ul>

***Everything related to the planting*** is organized by the Phenotyping platform.

***At harvest time*** we will help you with the organization at the platform (for ex: how to place the stands to have the best flow during the sampling process) and with the height, stem, and biomass measurements.

We provide pruning shears, rulers, electronic calipers, balance for biomass measurements (connected to computer).

***Please acknowledge the Phenotyping platform and Wallenberg Foundation in your future publication! The first paper published where the UPSC Phenotyping platform was described is: Wang et al., Current Biology, Vol 32 No.16, 2022.***