

## Finland

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**Please describe any new experimental resources and/or software tools available to Arabidopsis researchers that have been initiated or funded in your country in 2020 or early 2021**

Arabidopsis research at the Finnish National Plant Phenotyping Infrastructure (<https://www2.helsinki.fi/en/infrastructures/national-plant-phenotyping>) has enjoyed funding for implementing FAIR data management standards together with European and Nordic colleagues to enable future open science data.

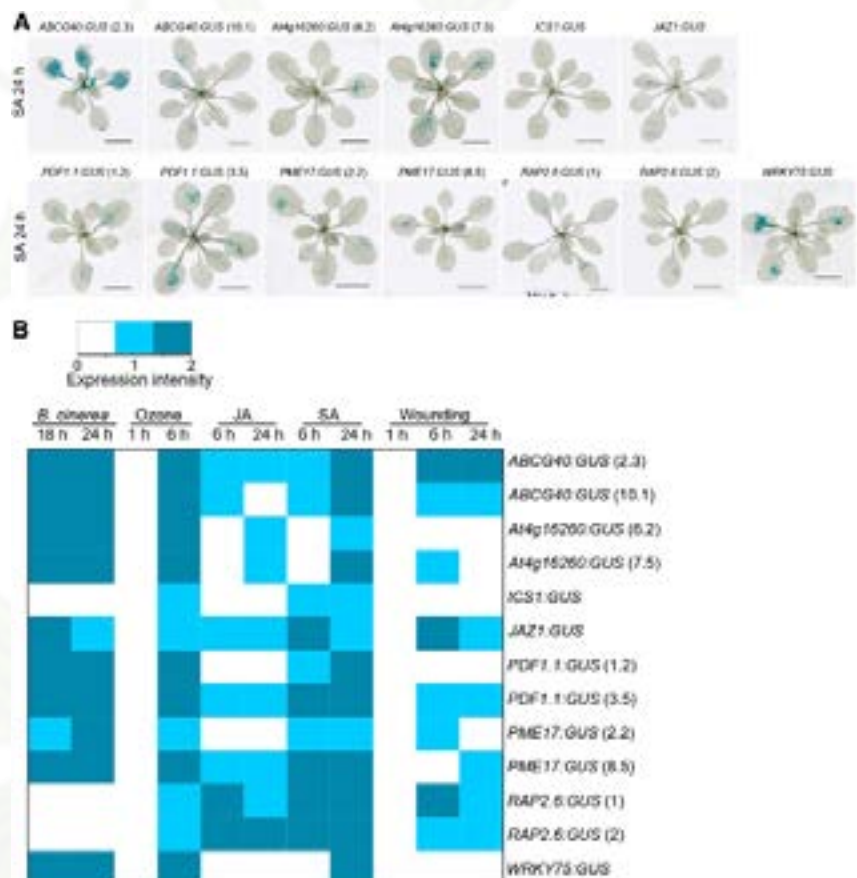
**Please provide a paragraph describing the general impact of the COVID19 pandemic on the scientific community in your country**

From March 2020 onwards, University of Helsinki and other universities in Finland first went from partial lockdown to full lockdown during May. From June 2020, labwork has again been possible with a maximum number of people assigned per each lab and office. Face masks are mandatory in University premises. We have been using online calendars to make bookings for the rooms in advance. Remote work and teaching has been strongly recommended whenever possible. Overall, Covid-19 has slowed down laboratory work variably. Lab and team meetings have been held remotely through Zoom, and this has worked adequately, although everybody is eager to have physical team meetings again. Everyone is also looking forward to attending physical conference meetings: virtual meetings are informative, however they are lacking social interaction, which is essential for most of us.

### Selected Publications

1. Wang X, Ye Y, Lyu M, Ursache R, Löytynoja A, Mähönen AP. An inducible genome editing system for plants. *Nature Plants* 2020 Jul;6(7):766-772. doi: 10.1038/s41477-020-0695-2

Tissue-specific induction of Cas9 enable precise genome editing in somatic tissues



Visualization of stress marker gene expression with promoter  $\beta$ -glucuronidase (GUS) staining. A, Representative pictures of the salicylic acid (SA) treatment (500  $\mu$ M, 24 h) in all promoter:GUS lines. B, Summary of treatment-specific GUS expression at early and late timepoints. The displayed average of three repeats is calculated from stain intensity score values (0 = no staining, 1 = faint staining, 2 = strong staining) determined by visual evaluation.

2. Kimura S, Hunter K, Vaahtera L, Tran HC, Citterico M, Vaattovaara A, Rokka A, Stolze SC, Harzen A, Meißner L, Wilkens MMT, Hamann T, Toyota M, Nakagami H, Wrzaczek M. CRK2 and C-terminal Phosphorylation of NADPH Oxidase RBOHD Regulate Reactive Oxygen Species Production in Arabidopsis. *Plant Cell*. 2020 Apr;32(4):1063-1080. doi: 10.1105/tpc.19.00525.

This work revealed a new layer of regulation in plant ROS production

3. Vuorinen K, Zamora O, Vaahtera L, Overmyer K, Brosché M. Dissecting Contrasts in Cell Death, Hormone, and Defense Signaling in Response to *Botrytis cinerea* and Reactive Oxygen Species. *Mol Plant Microbe Interact*. 2021 Jan;34(1):75-87. doi: 10.1094/MPMI-07-20-0202-R

Arabidopsis double and triple mutants deficient for salicylic acid, jasmonic acid and ethylene signaling was generated and is available for the Arabidopsis community.

## Major Funding Sources

Academy of Finland: <https://www.aka.fi/en/> Jane and Aatos Erkko Foundation: <http://www.jaes.fi>.

