Opticrop Report: Potato 2022 at RadiMax platform

1. Experimental setup

Activity	Date	Special comments
Planting	2-3 May 2022	
Harvest	24-25 August 2022	
Drought stress	Form 1st of July	
Isotope injection	25th of July	15N and 2H20 have been injected at 115-130cm soil depth to all varieties at the same time
Leaflet samples	25th of July	Small portion of leaves from the news leaflet has been sampled for deep and shallow rooted sample. Leaves samples were analyzed for 15N and 13C
Imaging	22-23 June 24-28 July 24-29 August	

2. Planting design
- Potato rows were planted in the middle between two RadiMax minirhizotron tubes, giving the distance between rows to be 50cm. Within-row distance was 30cm.
- Detailed design with variety position is to be found in Design.xlxs sheet

3. Isotope injection and 13C discrimination in tubers and leaves
- Two tracer isotopes have been injected to all potato varieties at the same depth and at the same time, using sub-irrigation system installed at RadiMax facility.
- Injection of tracer was done on the 25th of July, when most of the potato varieties were in the flowering to tuber filling phase, but the great differences in the phenology were observed – thereby the visual scoring of canopy has been done on the day of the injection.
- Tuber samples right above the labeled area have been collected (2 samples in each row) at the harvest.
  - o Tubers were cut in small cubes and representative sub-sample has been dried, milled and sent for further analysis.
  - o Samples belonging to the same row were individually analyzed and the average value for a row is presented in the excel sheet.
  - o Control samples of tubers were taken on the day of injeciton
- Leaf samples were taken at the day of isotope injection for all rows, but selected 89 samples were analyzed for ^{15}N and ^{13}C content.

4. Root data
- We have collected 3 root data sets during growing season.
- In the excel sheet total root length per tube as well as calculated deep root traits. Supplied is word document with key to calculated traits.