

## Description of the sensitivity analysis of WALTer

A global sensitivity analysis of WALTer was conducted to evaluate the impact of 13 input parameters and variables of the model (Table SI1) on its outputs. Given the high computational cost of simulations, a fractional factorial design was selected. Three levels were considered for each input factor (Table SI1) and a design of resolution V, composed of 729 simulations, was generated using the R package *planor*. The analysis was done using simulations of 56 plants and each simulation was replicated 5 times to account for the impact of the stochasticity of the model. We denote by *rep*, the random seed used to compute the simulation. For each simulation, the mean tillering dynamics of the plot was extracted from the outputs of WALTer. Thanks to the R package *multisensi*, total sensitivity indices were computed for each date of the tillering dynamics and represented graphically.