



## **Supplementary Materials**



**Figure S1** °C d evolution during the growing season of the trial. First flight and the two weeks gap are indicated.



**Figure S2** Histograms with median values (dashed lines) of the phenotypic parameters derived from the curve fitting of canopy cover data. The data is presented per group and all groups together. For the abbreviations see Table 1.



**Figure S3** Histograms with median values (dashed lines) of the phenotypic parameters derived from the curve fitting of canopy height. The data is presented per group and all groups together. For the abbreviations see Table 1.



**Figure S4** MLR model building overview for SY stage with RMSE and Adj.R<sup>2</sup> evolution. The red dashed line indicates the selected (best) model with the lowest RMSE. The subset selection regression with normalized UAV time points included a 10 k-fold cross validation. In each subsequent step one variable was added and all possible combinations were evaluated. The model index = 0 included

only the groups (GP1-4, GP1 is the reference group) as dummy variables. Graphs are provided per variable with the value of their respective coefficients.



**Figure S5** MLR model building overview for R8 stage with RMSE and Adj.R<sup>2</sup> evolution. The red dashed line indicates the selected (best) model with the lowest RMSE. The subset selection regression with normalized UAV phenotypic variables included a 10 k-fold cross validation. In each subsequent step one variable was added and all possible combinations were evaluated. The model index = 0 included only the groups (GP1-4, GP1 is the reference group) as dummy variables. For the abbreviations see Table 1. Graphs are provided per variable with the value of their respective coefficients.



**Figure S6** MLR model building overview for SY stage with RMSE and Adj.R<sup>2</sup> evolution. The red dashed line indicates the selected (best) model with the lowest RMSE. The subset selection regression with normalized UAV time points included a 10 k-fold cross validation. In each subsequent step one variable was added and all possible combinations were evaluated. The model index = 0 included only the groups (GP1-4, GP1 is the reference group) as dummy variables. Graphs are provided per variable with the value of their respective coefficients.



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