Reviewer Report

Title: Predicting plant biomass accumulation from image-derived parameters

Version: Revision 1   **Date:** 04 Dec 2017

Reviewer name: Christian Fournier

Reviewer Comments to Author:

I thank the authors for the work done on the new manuscript and on Github, that address most of the concerns I raised in my first review.

The pipeline published on GitHub now works nicely and allows to reproduces the different analyses. I only had to install manually two packages (earth and e1071). They could be easily added to the list of dependency in the R script to completely automatize the installation.
The authors also clarify their analysis of the comparison of models, and the overstatement concerning the RF model has been corrected.

I however still think that the abstract should be amended to better match the conclusions of the cross experiment test. The author acknowledged, in their response and in the text (line 226) that one cross experiment test leads to a loss of predictive accuracy.
It seems also obvious, from Figure 5, and this should probably be added to the text, that this loss of accuracy is not linked to a greater random dispersion of the points, but to a systematic model bias. I agree with the authors that this may be due to some changes in the experimental conditions. My point is that these changes are not completely captured by the model, even with the inclusion of non structural traits. I therefore still think that there is some overstatement/ambiguity in the abstract, in particular in the sentence' The high prediction accuracy based on this model, in particular the cross experiment
performance, will contribute to relieve the phenotyping bottleneck in biomass measurement in breeding applications' .
This may however be easily fixed.

Methods

Are the methods appropriate to the aims of the study, are they well described, and are necessary controls included? Yes

Conclusions

Are the conclusions adequately supported by the data shown? No

Reporting Standards

Does the manuscript adhere to the journal's guidelines on [minimum standards of reporting?](#) Yes

Statistics

Are you able to assess all statistics in the manuscript, including the appropriateness of statistical tests used? Yes, and I have assessed the statistics in my report.

Quality of Written English

Please indicate the quality of language in the manuscript: Acceptable

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