Reviewer Report

Title: Conventional and hyperspectral time-series imaging of maize lines widely used in field trials

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Reviewer Comments to Author:

This manuscript describes the generation of a time-series dataset of conventional and hyperspectral images of commonly known and important maize lines. The authors describe the methods of data collection and how it is useful, especially in conjunction with other already available datasets for the same lines. The authors begin to analyze the dataset generated, focusing on biomass measures and determining heritability. The authors conclude that they believe it is important and necessary to combine controlled environment data with field data to tackle problems facing crop production. I do have several comments about the manuscript in its current form:1. My main concern about the manuscript is the amount of data use in the article. The manuscript was submitted as a 'Data Note', but it is not obvious this data is exceptional, rare, or novel as it was collected nearly 2 years ago. One criteria to review this type of article is dataset size. The authors are claiming a dataset size of ~500Gb, but this includes data (thermal infrared and fluorescence images) that was not mentioned in the manuscript except that it was collected. I applaud the authors for the willingness to be so open with their data, but I'm not convinced that one month worth of images for 32 genotypes is enough for publication.2. The manuscripts main point is not to get into conclusions based on their image analysis, but I would have liked to have seen more strenuous ground truthing. The manual measurements were made only at the very last time point. These really should encompass the variation of plants throughout development. How can we determine if the measured traits are accurate at day 9 for example? Nothing can be done for true manual measurements, but digital manual measurements could be made and correlated with image analysis extracted values.3. Board sense heritability needs to be corrected throughout the manuscript.

Level of Interest

Please indicate how interesting you found the manuscript: An article of limited interest

Quality of Written English

Please indicate the quality of language in the manuscript: Acceptable

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