

Reviewer Report

Title: Metabolic responses of rice source and sink organs during recovery from combined drought and heat stress in the field

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Reviewer name: Laura Righetti

Reviewer Comments to Author:

The manuscript titled "Metabolic responses of rice source and sink organs during recovery from combined drought and heat stress in the field" investigated the plant recovery mechanisms after drought and heat stress. The study aim is clear and well designed. The data analysis is rigorous, and the conclusion drawn are supported from the results.

Nevertheless, I would suggest reviewing and modify some details that are given below:

Abstract

- Line 43-44 and line 56: the authors stated that the identified metabolites might be useful to ensure FOOD SECURITY under climate changing conditions. According to the FAO definition, food security encompasses different aspects related to food, such as availability, access, utilization, stability and safety. However, I think that the results of this study are useful only in ensuring food availability under climate changing conditions, there is no improvement from the safety point of view. Therefore, I would suggest changing "food security" for "food availability".

Data description

- Line 108-111: I would suggest moving this paragraph to the result section
- Line 112: the authors stated that overall they collected 1241 samples, but I cannot understand how to get this number. How many samples/per years? How many samples/per time points? How many biological replicates?

Analysis and discussion:

- Line 134: Did the author observed any influence of the harvesting years on the PCA plot?
- The authors focused on the primary metabolism changes. However, lipids are well known to be involved in the plant response to stresses. May the authors comment on that?

Methods

- Line 461-462: three to five replicates. What influence the number of collected replicates per sample?
Did the authors analyse all the collected sample replicates?

Methods

Are the methods appropriate to the aims of the study, are they well described, and are necessary controls included? Choose an item.

Conclusions

Are the conclusions adequately supported by the data shown? Choose an item.

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

Choose an item.

Statistics

Are you able to assess all statistics in the manuscript, including the appropriateness of statistical tests used? Choose an item.

Quality of Written English

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