Abstract

In this work by Zeng et al "**Waterlogging tolerance and recovery capability screening in peanut: a comparative analysis of waterlogging effects on physiological traits and yield**" carried out evaluation of 15 lines of peanuts at pod filling stage against waterlogging as the stress factor. They further carried measurements of various biochemical processes, such as the concentration levels of the antioxidants such as the CAT, SOD in addition to other byproducts of oxidative stress such as the MDA. What came out in their findings is that the concentration levels of the WTC of REL, MDA content, SOD and CAT were decreased compared with that of after waterlogging. This could not be true, a plant under stress will increase the production level of MDA as pointed out in various work done by Magwanga et al (2018, 2019, 2020 and 2021), so this anomaly must be corrected.

Introduction

The introduction is unnecessarily long, with information best transferred to either discussion or methodology, a number of section describes why the use of a particular parameter, and yet these information's are best fit under the materials and methods. Paragraph 3 to 5 needs to be summarized and much of their contents are either transferred to materials and methods or discussion.

Material and methods

Plant materials: the authors need to justify why the 15 lines were chosen, this will help the readers to understand the reason for this research work. Are they the best performing lines or potentially tolerant to waterlogging. This information needs to be made clear to the readers.

Water logging treatment: this section is highly mixed up, let the authors stick to water logging as a treatment and not mix with the data collection. The critical question is that can groundnuts survive in a water logged environment for a whole week, I doubt. So proper justification must be provided the authors. Furthermore, SPAD and other antioxidant evaluation sections 142 to 148 must be removed. Moreover, it is better to state the dates in periods either after two weeks of planting or a month after planting as opposed to indicating the actual dates. This paper will be read beyond this century.

Determination of SPAD value and chlorophyll fluorescence parameters: one wonders what you meant by the term " functional leaf" or "functional leaves" the nature of peanuts has nodes, so it would be proper to indicate the position of the measured leaf. What was the significance of taking the SPAD values in addition to the Chlorophyll fluorescence parameter??

Determination of the activities of SOD and CAT: SOD was evaluated as per the previous method though with modification, it would be proper to indicate the modifications, this will help in repeatability of this particular research. Moreover, you have gone to write the whole process,

so it doesn't warrant the need to indicate the SOD measurements were as per the previous method.

Results

Before carrying out correlation, it would be good to carry out ANOVA of the various trait measured among the 15 accessions in this experiment. Once ANOVA is done, then the authors can do correlation analysis.

The authors need to avoid the term "As can be seen from **Table 2" and consider replacing with as shown or indicated**

The results section is not well written, and this could be attributed to the very basic analysis; in the introduction, several methods were indicated such as "Membership function analysis, principal component analysis and cluster analysis" the cluster analysis helps in determining the hotspots while PCA applicable in data reduction. Can the authors help the readers to understand why these were mentioned and not shown under results?

Discussion

In this section, misrepresentation of facts has been done "Waterlogging stress can not only damage cell membranes, but also reduce the photosynthetic capacity of plant leaves. Studies showed that with the prolongation of waterlogging time, MDA content in leaves or roots increased, and the activities of SOD and CAT increased (Zhang et al.,2015; Tian et al., 2019)"

The language of expression is wanting "decreased gradually with the passage of experiment time" and I strongly recommend the authors to redo this section in line with properly analysed data.