Reviewer Report

Title: A community resource to mass explore the wheat grain proteome and its application to the Late Maturity Alpha-Amylase (LMA) problem.

Version: Original Submission  Date: 5/22/2023

Reviewer name: Nobuaki Takemori, Ph.D.

Reviewer Comments to Author:

The large proteome dataset for wheat, a representative grain, presented in this manuscript is valuable not only for agriculture science but also for basic plant science, but unfortunately, the manuscript is too wordy in its description and informative. Of course, a detailed description of the experimental methods and data generation process is an important component in obtaining reproducibility, but excessive information in the main text may have the unintended effect of hindering the reader's understanding of the manuscript. The volume of the main text in this manuscript should be reduced to 1/2 or even 1/3 of the original by referring to the following suggested revisions.

Title: It looks rather like the title of a review article and is not appropriate for the title of an original research paper. An abbreviation is also used, making it difficult to understand. It should be changed to a title that more specifically and pragmatically reflects the content of the paper.

Materials and Methods 2.3: The sample pretreatment used in this experiment has already been described in Ref. 41, so detailed description in this text is unnecessary. Also, Figure 1, which visualizes the experimental process, is too packed with information and is difficult to read in its small font. In addition, many extraneous photographs of LC-MS instruments and other common equipment are included. Sample pretreatment should be described very briefly in the text, and only those areas where there are differences from previous reports should be mentioned. If the author wishes to describe the details of the experiment to assure reproducibility, it is recommended to describe it in the form of an experimental protocol and include it in the Supplementary Information.

Materials and Methods 2.5: The 11 different paths the authors have set up for LC-MS/MS analysis are difficult to understand in text. Maybe they could be summarized in a table or visualized using a flowchart.

Materials and Methods 2.6 to 2.9: It is recommended that only the essentials be described in the text and the minute details be moved to the Supplementary Information.

Results 3.2.(p 26, line 11-20): The description should be moved to the introduction.

Results 3.1.3-3.1.4 &amp; 3.2.1.-3.2.3]$Too detailed and too long. Only the main points should be mentioned. It would be effective to use concise Figures where possible.

Figure 6: Too much information; A, B, F, and G should be supplemental information.

Figure 8: Wheat cartoon is unnecessary. The font is too small. This information should be in a Table.

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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