



The review of dissertation thesis

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Title: The Effect of Enzyme Addition on the Rheological Characteristics of the Gluten-free Dough and Bread

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The objectives of the dissertation thesis were in accordance with the requirements of the bakery industry and consumers suffering from celiac disease. They certainly deserve quality bread and other bakery goods. The introduction is well processed, giving a basic and relevant information about gluten-free products and their rheology properties. From the formal point of view, tables (2.1–2.3) and figures (3.1 and 3.2) were not mentioned in the text. On page 22, a reference to Fig. 1 does not match the image format. The methodology was in accordance with the objectives of the thesis.

In the following section, the author tries to interpret the results of his research. Frankly, I have spent a lot of time to read this section, and tried to fully understand it. I believe that important and valuable outcomes were achieved, which will be helpful for further research in this area. However, the author made this part unreadable for me. A little time or poor knowledge of the English language probably caused chaos in the author's expression, resulting in serious errors in English grammar and style. I am not a native English speaker, but it hurts so much. Of course, many formal mistakes have occurred. Here is the long list of mischiefs and questions:

- 1) Table 4.1; missing information about repetition and standard deviations of the expressed values. Furthermore, the small 's' means second, not capital one.
- 2) Do not understand the sentence (p. 27) *The enzyme was added on a different percentage of 0.1 % to until the falling number....* Did you mean that you have added enzyme in 0.1 % increments to reach 62 s of falling number?
- 3) Before the SEM experiment, you applied freeze drying of your sample. **Is it possible that the freeze-drying process may influence the structure of flour samples?**
- 4) "...*be related to...*", not "...*be related on...*"
- 5) "*After kneaded the dough, weighted the dough*" Is that a real sentence?
- 6) Last sentence (p. 32). **How do you know that finer flours have a higher content of damage starch granules?** Please, explain.

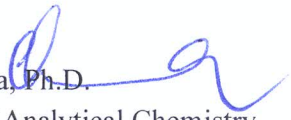
- 7) Tables 5.2, 5.3 etc. **What does “(n=300)” mean?** The last column: If you have performed some pair tests to find the difference between means (probability level $p=0.05$), the result is supported by the calculated p values. Therefore, you should put this value in the last column or express it as $p<0.001$ in your text. Using an asterisk is a nonsense in this case. Additionally, the mean \pm standard deviation would be more informative.
- 8) Abbreviations have to be explained below all the figures (BRC, BRE, RRC, RRE, etc.)
- 9) Is it possible to express the elastic and viscous modulus in kPa or MPa? It would be more convenient to read.
- 10) The author adequately described the effect of temperature on G' , G'' and viscosity only for the black rice flour dough. **It would be nice to explain, for example, the changes in the G' and G'' values with temperature for fine rice flour (clearly different curves for control and treated samples) or 0.5S rice flour dough (sudden fall for treated sample at 55 °C).**
- 11) Chapter 5.3.2 should not begin with a table.
- 12) Missing values for a control sample in sentence (p. 61).
- 13) Magnification has to be part of a figure caption.

Discussion was provided in a similar manner, i.e. many errors in text. “*Dextrins may interference with*” instead of *...may interfere with...; ...starch granules be attacked by...instead of starch granules can be attacked by...; Obtained results from the baking found a significant difference....* results cannot find anything, results show, indicate, clarify.

The author often expressed his findings incorrectly. For example, “*after enzyme addition the dough texture and extensibility were significantly changed...*” (Chapter 7). You should state if significant increase or decrease in tested parameters was obtained. I agree with the point of view of the author that rice flour is a promising wheat flour substitute, and the enzymatic treatment seems to improve the quality of bread.

The author has proved that the results of his research are valuable and interesting for readers worldwide (articles in Food Chemistry, Czech Journal of Food Sciences). However, the preparation of this thesis was not supported by English grammar/style editing as well as the preparation of the above-mentioned articles, to my opinion.

I can say that all the objectives have been met and the results have an indisputable impact on the further research and practice as well. With respect to the law (no. 111/1998, Zákon o vysokých školách a o změně a doplnění dalších zákonů), **I recommend** this work for oral defence before the examination committee of the Faculty of Technology of Tomas Bata University in Zlín.

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