Author's response to reviews

Title: Effect of Consumption of micronutrient enriched wheat steamed bread on postprandial plasma glucose in healthy and type 2 diabetic subjects

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Author's response to reviews: see over
Dear Dr Sandeep Prabhu

On behalf of my co-authors, we thank you very much for giving us an opportunity to revise our manuscript, we appreciate editor and reviewers very much for their positive and constructive comments and suggestions on our manuscript entitled “Effect of Consumption of micronutrient enriched wheat steamed bread on postprandial blood glucose in healthy and diabetic subjects”. (ID: 1142682935712316).

We have studied reviewer’s comments carefully and have made revision which marked in red in the paper. We have tried our best to revise our manuscript according to the comments. Attached please find the revised version, which we would like to submit for your kind consideration.

We would like to express our great appreciation to you and reviewers for comments on our paper. Looking forward to hearing from you.

Thank you and best regards.

Yours sincerely,

Xingpu Li

Corresponding author

Responds to the reviewer’s comments:

Reviewer: Anne Nilsson
Abstract:

We have made correction according to the Reviewer’s comments. The method was well described. A more detailed description of the test products was given. The test portions was corresponding to 50 g available carbohydrates. The time for the blood glucose determined has shown. The diabetic subjects were type 2 subjects. The conclusions stated has been rewritten.

Introduction:

1. We have deleted reference no. 1.
2. In the beginning of the section; We mean type 2 of diabetes.
3. The second section: Author have clearly specified the diabetes was type 2.
4. GI is measured after 50 g available carbohydrates has been clarified.
5. beta-glucan fiber has been removed.
6. The last section in the introduction: A more exhaustive description of the Method was done. The main test product made of “Jizi439”was micronutrition riched. The varieties were well described according to the Reviewer’s suggestion. The study population has been described more detailed.
7. Actually, in the first test, our purpose was to chose the lowest GI value variety. After that we compared the effects on postprandial glucose responses between the lowest GI value variety and buckwheat.

Materials and methods:

Materials:

8. The products has been well defined. The main differences between the test products
has been described in table 1.

9. The rational to choose Jizi439 and buckwheat has shown in raw materils section.

10. One steamed bread is based on 50 g available carbohydrates.

11. The methods for bread baking have been described more detailly.

12. Table 1; the table description is more thorough now. Information regarding buckwheat has been added.

13. In table 1, the analyses were performed on the breads.

14. All methods are used for analyses of products was described detailly

**Subjects:**

15. How the subjects were recruited has been described

16. What was the inclusion/exclusion criteria has been described.

17. The BMI was presented in table 2

18. Anthropometric data and metabolic status and other relevant descriptions for the diabetic group has been shown in table 2.

**Test of Glycemic response [15-17] of healthy subjects**

19. The standardization procedure of the test has been clarified. (see the rewritten methods).

20. The use of only one determination of the reference product has been mentioned in the discussion section.

21. When the blood tests were withdrawn has been clarified.

22. Each subject received four tests: one for reference food and three tests for three different test foods. The time interval between two tests was 3 days.
23. Only one bite of water was allowed to drink during the test interval in this study. The results should not be effected.

24. The last sentence in this section: GI= [increment……]* 100 has been removed from this section.

Blood glucose determination of diabetics:

25. How the test products were consumed was clarified.

26. Why these products were chosen for the study has been explained.

Results:

Postprandial blood glucose responses for healthy subjects:

27. Clarify what is meant with “The blood glucose response for Jizi439, Chu20 and mixed white bread wheat were similar” (statistically no differences in blood glucose responses??).

It should be “The blood glucose response curves for Jizi439, Chu20 and mixed white bread wheat were similar”

28. Was there a significant main effect?

Yes. The Postprandial plasma glucose of the consumption of Jizi439 steamed bread were significantly lower than that of any other testing foods at all the time points (P<0.05).

29. Figure 1. The scale on the X-axis is improper.

It has been revised.

30. Table 2: It is AUC.

31. Table 2, foot note: Explain what is meant with “In each analysis, treatment
steamed wheat bread was compared with the reference glucose”. Previously it is stated that Tukey’s multiple comparison test are applied.

This foot note has been rewritten.

Postprandial blood glucose responses for diabetic subjects

32. The test portions based on 50 g available carbohydrates.

33. Which figure (2h blood glucose value) that belong to which product has been Clarified.

34. Figure 3, the figure text seems not to agree with the figure.

It has been revised.

Discussion:

35. In the first section, clarify which reference that is used (glucose or white wheat bread).

Glucose was used as the reference food.

36. The statement declaring Jizi439 to be a medium GI food should be followed by the limitations in the method in the present study, e.g. no standardized evening meal, fasting period (that also was quite short (8h)), drinking of water during testing….. In addition the GI-value 74.66 of Jizi439 is really on the limit. In the method, some question has been explain more detailly.

37. The discussion regarding the explanation of starch dividing in amylose and amylopectin is all too basic, and in addition not correct. Higher amylose usually results in lower glucose responses.

It has been revised.
38. Blood glucose lowering properties of buckwheat in rats are discussed. Please add what reference product is used as placebo.

It was sucrose.

39. This section has been revised.

40. The statement “This wheat variety offers two benefits, medication and nutrition, which made it an ideal food source for patients with cardiovascular diseases, diabetes, low immunity” is not supported by results in this study.

This section has been revised.

Conclusion:

41. The discussion regarding Jizi439 to be “an ideal food for both diabetics and healthy people” should be limited to a discussion comparing different wheat varieties.

We have re-written this part according to the Reviewer’s suggestion

Minor Essential Revisions

Test of Glycemic response [15-17] of healthy subjects

1. The references (15-17) suits better in the text, not in the headline.

It has been revised.

Postprandial blood glucose responses for healthy subjects:

2. The third sentence: “In contrast to the mixt white bread …”, should it be “in comparison with..”

We have made correction according to the Reviewer’s comments.

Discussion
3. It is not necessary to present decimal values for GI.

It has been revised.

Responds to Reviewer, Salwa Rizkalla

In the abstract:

1. What is the type of subjects in the first study, normal weight healthy subjects?

   This should be cited in the abstract.

   All subjects were normal weight in the first study, body mass index (BMI) were lower than 28.0 kg/m$^2$, with no overweight and obesity. This has been cited in the abstract.

2. The clinical characteristics of the diabetic subjects should be cited. Were they taking medications for diabetes? If yes, this should be mentioned.

   Eight subjects took metformin for lowering glucose, while the others were on lifestyle intervention. The clinical characteristics of the diabetic subjects were cited in “subject”

3. Did the subjects are randomized or not? What was the interval between each test? Comments are needed.

   The subjects were randomly selected, the time interval between each test was 3 and 6 days for healthy and diabetic subjects, respectively.

In the introduction:

4. The 3rd paragraph and in the discussion.

   We added the fact that some studies have evaluated the glycemic response of different wheat bread and influence by cereal fiber, baking process and the bread fermentation
in the introduction and discussion [9, 10, 11] and so on. We gave some words on type of carbohydrate complex in the introduction also.

5. As mentioned in page 3, LGI breakfast could be of benefit but also a whole day LGI diet for 4 weeks was able to improve glycemic control, glucose utilization, and lipid profile in type diabetic men (Diabetes Care 2004, 27:1866-72).

It has been revised.

6. What is the difference between this study and other studies comparing different kinds of bread? This should be also commented.

Processing and fermentation procedure of the steamed bread is different from that of bread. These were explained in “test meals”.

the difference between this study and other studies comparing different kinds of bread was that we chose the special variety Jizi439 and get the lower GI steamed bread.

7. More information on the specificity of each type of bread used should be given in the text.

More information on the specificity of each type of steamed bread used was given in table 1.

8. Were there any precaution took for the time of blood sampling in relation with the menstrual cycle (during the oestrogen or progesterone phases)?

All female subjects were not in the menstrual cycle when blood samples were taken.

9. Did the authors give the subjects any recommendations concerning the last meal taken in the day preceding the experiment?
The standardization procedure of the test has been clarified. (See the rewritten methods).

**Quality of written English:** We have re-written the manuscript according to the Reviewer’s suggestion. Some language corrections has been done.

**Statistical review:** statistics has been redone. We are very sorry for our negligence of statistics.

Special thanks to you for your good comments!!

**Declaration of competing interests:**

I declare that I have no competing interests.

We tried our best to improve the manuscript and made some changes in the manuscript. These changes will not influence the content and framework of the paper. And here we did not list the changes but marked in red in revised paper.

We appreciate for Editors/Reviewers’ warm work earnestly, and hope that the correction will meet with approval.

Once again, thank you very much for your comments and suggestions.