

Reviewer's report

Title: The effect of botanical structure, fiber content and acetic acid on postprandial blood glucose, gastric emptying and satiety in healthy subjects, a study of wheat products with and without vinegar

Version: 1 **Date:** 1 January 2008

Reviewer: Carol Johnston

Reviewer's report:

This research examines whether the botanical integrity of cereals, with the addition of acetic acid, affects GER, satiety, and postprandial glucose fluxes. The paper is well written and well referenced. The study procedures were involved but well managed. My major concern is the tests used for the statistical interpretation of the data. Major revisions are specifically addressed below.

1. Title: The title should be more direct, e.g.: The botanical integrity of wheat products in association with acetic acid influences postprandial gastric distention and satiety in healthy adults.
2. Abstract: Clarify what is meant by "using normal fasting blood glucose as an inclusion criterion." (line 14). In line 16, substitute "was measured" for "measurements were made".
3. Methods: page 7: include the mean fasting glucose concentrations (with range) for the subjects (line 4). Since the BMI is so variable (from underweight to nearly obese) the authors should consider controlling for body mass in the statistical analyses.
4. Methods: bottom of page 8: smoking and GI disturbances were controlled for on test day; however, the authors do not mention controlling for exercise or food choices the night of testing. These are variables which can affect postprandial glycemia and are study limitations. The small sample size is also a study limitation. State the power of the study with the 13 subjects. Study limitations need to be addressed in the discussion.
5. Methods: page 10 (line 5): change to: "Committee at Lund University, and participants provided written consent".
6. Methods: What statistical tests were used to determine differences between medians??? Differences between means should be assessed using repeated measures ANOVA with (a) time and interaction as factors (for the curves) and (b) the interaction factor (for the AUC data). These are more robust tests than the linear model ANOVA since intra-subject variation is controlled.
7. Results: Only SEM or SD should be reported (not both). The figures should include SEM (or SD). The authors should display the AUC means (for both glucose and satiety) as bar charts instead of the data over time, and substituting the distention data for the GER data (figure 3) since there were significant differences between groups.

8. Discussion: The authors could correlate the satiety and distention data to support their concluding statement (page 15).

9. Discussion (page 12, line 19-20): The stated hypothesis is not correct since the intact cereal kernels were not tested without the vinegar. Since only white wheat bread was tested without the vinegar, it is not known how the botanical structure might have fared without the vinegar. The authors need to be very clear about this.

10. Discussion (page 13, line 12): state the p values for the trend.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.