Author's response to reviews

Title: Effects of Acai (Euterpe oleracea Mart.) berry preparation on metabolic parameters in a healthy overweight population: A pilot study

Authors:

  Jay K Udani (jay.udani@medicusresearch.com)
  Betsy B Singh (betsy.singh@medicusresearch.com)
  Vijay J Singh (vijay.singh@medicusresearch.com)
  Marilyn L Barrett (marilyn@pharmacognosy.com)

Version: 4 Date: 30 March 2011

Author's response to reviews: see over
Effects of Acai (Euterpe oleracea Mart.) berry preparation on metabolic parameters in a healthy overweight population: A pilot study
Jay K Udani, Betsy B Singh, Vijay J Singh and Marilyn L Barrett

Dear Editors for the Nutrition Journal,

We thank you for the reviewer’s comments on our manuscript. We have responded to each comment below and have made the requested changes in the manuscript. We hope that our revised manuscript is now acceptable for publication in your journal. Thank you for your consideration of our revised manuscript.

Figure:

Comment: Figure 1 is incomprehensible. Why don't the graphed lines go through zero? What is the purpose of the two dotted, parallel lines and why aren't they explained in the legend? Also, an explanation of how AUC was calculated should be included under the statistical analysis description (Methods).

Response: More information regarding Figure 1 has been added to the Methods section, the Results section and the Figure legend. The percent changes in capillary blood glucose levels from time zero to 120 minutes after the meal were determined for each individual. The averages of the individual percent changes were calculated and plotted as minutes from time zero (baseline). The trendlines for the baseline and 30 day measurements are depicted as two straight lines.

The AUC was calculated using the Trapezoidal Rule and this information was added to the manuscript.

Background:

Comment: P4, paragraph 2: Vitamins C and E are not endogenously produced antioxidants - please reword this sentence for accuracy. The remainder of this paragraph is also worded awkwardly. The transition from this paragraph to the next needs work. I suggest eliminating the first sentence of the following paragraph (p 5, paragraph 1).

Response: changes made

Comment: P5, paragraph 2: The list of polyphenols in acai could be presented in a table. Move the description of the FA content earlier in the paragraph - just after the sentence in which the % lipid content is reported.

Response: The description of FA content has been moved.

Comment: P6, paragraph 1: The first sentence stating the ORAC value of acai needs a reference. Please rewrite the remainder of the paragraph for clarity. What is the point being made, and how is it relevant
to the current pilot study? It is unclear why there is mention of "other, unidentified, antioxidant constituents...in the fruit" when a list of polyphenols (that have antioxidant activity) are listed in the previous paragraph. Not sure the authors have a clear grasp of this relationship.

Response: The paragraph has been rewritten.

Comment: P6, paragraph 2: Sentence 2 needs a reference. The rest of this paragraph needs serious editing. No need to define SOD activity in this context. Continuation of this paragraph on p7 should also be edited for clarity and brevity. Please report the mean change found in the referenced study, not the max, and indicate whether it was statistically significant compared to the placebo.

Response: The paragraph has been rewritten.

Comment: P7, paragraph 2: Sentence 2 should be changed to "A pilot study was designed to evaluate...in overweight subjects who are at risk for developing metabolic syndrome." Eliminate the last 2 sentences in this paragraph.

Response: Done

Comment: P7, paragraph 3: Please revise sentence 1 as follows: "In this pilot study, risk factors associated with metabolic syndrome were measured..." Eliminate the last sentence in this paragraph since it is redundant with the previous paragraph.

Response: Done

Materials and Methods:

Comment: P8, paragraph 1: The composition of the test product could be presented in a table. The description of the aox activity of this product should be edited for clarity, accuracy, and properly referenced.

Response: The information regarding antioxidant activity has been edited for clarity.

Comment: P9, paragraph 1-2: Please provide the total number of calories and nutrients present in 200 g of product - including the amounts provided by the additional sugar.

Response: The calories and nutrients are provided per 100 g as this is the portion in the smoothie pack. This is appropriate, as it is the delivery unit and does not need to be changed. The sugar was added for taste, per individual preference.

Comment: P10, paragraph 2: Please give examples of the foods containing nitrates that were to be avoided throughout the study. How were subjects instructed?

Response: Subjects given a handout with foods containing nitrates to be avoided, for example bacon and hot dogs, and also reminded verbally by study staff.

Comment: P11, paragraph 1: Please revise for clarity. Change anthropomorphic to anthropometric, and indicate the specific measures collected. Also, please specify which analytes were measured in plasma/blood vs. breath, etc. When was blood drawn, and what assays were conducted in this blood. Clearly specify which glucose measures were conducted in drawn plasma vs. finger prick blood. Proper references are required for all of the methods listed in this paragraph.

Response: Specific anthropometric measures noted. The methods are stated as clearly as possible.

Comment: P11, paragraph 2: Please edit for clarity and brevity.

Response: The paragraph has been edited
Comment: P12, paragraph 2: Please describe the statistical analyses performed. What tests/variables were used to determine statistical significance? Again, describe how AUC was determined, etc.
Response: The methods section on statistical analysis has been expanded and the requested information added.

Results:
Comment: P12, paragraph 3: The demographics and anthropometrics of study participants could be presented in a table. How were the food diaries analyzed? Please indicate whether there were changes in micronutrient intake over the course of the study as these could affect the outcomes.
Response: The information on the study participants has been put into a table. The food diaries were analyzed for macronutrient content and this information is included in the text. The diaries were not analyzed for micronutrient content.

Comment: P13, paragraph 1-2: The data presented in these paragraphs just repeats what is presented in the table. Please revise accordingly.
Response: The paragraph has been edited.

Comment: P14, paragraph 2: Please edit for clarity and brevity.
Response: The paragraph has been edited.

Comment: P14, paragraph 3: Awkwardly worded. Please revise.
Response: The paragraph has been edited.

Discussion:
Comment: There is no need to repeat any of the results in the discussion section.
Response: The paragraph is rewritten.

Comment: P15, paragraph 1: Eliminate the first sentence, and begin this paragraph with “The results of this pilot study indicate that consumption of Sambazon acai may reduce... in overweight subjects. With chronic consumption, acai may help ameliorate...”
Response: The paragraph has been rewritten.

Comment: P15, paragraph 2: The % changes can be reported in the results section (as they do not repeat what is already presented in the table). In the discussion, these changes should be related to other studies of acai or other polyphenol-rich foods or compounds conducted in humans, and how/why they might differ (different dose, duration, population, etc).
Response: The paragraph has been rewritten.

Comment: P15-16, paragraph 1: Unclear how this paragraph on bioavailability relates to the findings of this study. It is presented out of context, and should be deleted.
Response: Bioavailability paragraph has been deleted.

Comment: P16, paragraph 2: The phrase “which are related but not directly comparable to acai pulp” is nebulous. Please be more specific, i.e., “Other anthocyanin-rich preparations, such as...” Give some indication of how the dose of polyphenols or total anthocyanins used in this study relate to the doses/findings of the other studies cited.
Response: The phrase has been deleted.

Comment: P17, paragraph 1: “The effects of anthocyanins...” Need reference after sentence 2. Must indicate dose/duration of bilberry extract used in that study. Begin sentence 3 with “In this study, or in...”
this study by Smith et al.” Begin sentence 5 with “Similarly, …” and end with “…in rats after feeding them X amount of polyphenols or anthocyanins or soybean seed coat, and for how long.” The next sentence should also have the reference immediately after it. Include the same info here – how much was given to these mice and for how long.

Response: the reference is given at the end of the section. The phrase has been deleted. The dose and duration information has been added.

Comment: P17, paragraph 2: Eliminate first sentence. Begin with “Reducing total and LDL cholesterol, while increasing HDL cholesterol, may prevent cardiovascular disease.” Indicate whether the 2% acai diet was w/v or something else. In following sentence, start with “In humans, an extract…” Change following sentence to “However, a preparation of sour cherry…”

Response: The information about the 2% acai diet has been added.

Comment: P18, paragraph 1: “Although an in vitro study (in what cells? With how much acai?) demonstrated that acai …., no effect on blood pressure was observed in our study. 

Response: the amount of acai has been added

Comment: P18, paragraph 2: Again results should not be presented in the discussion. Instead, please discuss how changes in CRP were/were not observed in other comparable studies.

Response: done

Comment: P18, paragraph 3: Again, do not repeat results here.

Response: the results are relevant in the context of the discussion.

Conclusion:
Comment: In this uncontrolled pilot study, consuming 200 g/d of Sambazon acai for 30 d reduced plasma fasting glucose, insulin, and total cholesterol compared to baseline levels in a cohort of 10 overweight adults. At 30 d, this acai preparation also attenuated the post-prandial glucose response (AUC) following a standardized meal when compared to 0 d. The results of this study suggest that conducting a larger placebo-controlled trial to determine the effects of acai on risk factors for chronic disease is warranted.

Response: paragraph changed

Additional notes:
Comment: In discussion section, please include a paragraph describing the limitations of the study.

Response: done

Comment: Under Methods, please indicate whether subjects were allowed to take any medications that lower cholesterol, blood pressure, or blood glucose.

Response: added information specifically regarding diabetic medications and insulin. The subjects were healthy and not allowed to be taking medications for any chronic conditions.