

# Review of: "Biological Components in Cucumbers (*Cucumis Sativus* L.): Implications for Pickle Manufacturing and Health Benefits in Fresh and Processed Varieties"

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Potential competing interests: No potential competing interests to declare.

The proposed work deals with the nutritive properties of cucumbers, in a special relationship with their typical processing techniques, such as pickling.

The work is generally interesting, but unfortunately, it needs some major changes for better comprehension and readability; otherwise, it is not suitable for publication in the present form.

The following points need a reply for improving the whole manuscript.

In the Introduction, the sentence "... immersing them in a mixture of sodium chloride or acetic acid ..." should be clarified. Do the Authors intend acetic acid as a pure compound or in its natural composition in beverages, such as vinegar, or similar products?

The Authors are requested to briefly explain the term "Gherkin pickling," giving some additional information, such as whether the cucumbers are treated with sugar, vinegar, both, or else? Please, explain.

The sentence "... special small parts such as phenolics ..." should be corrected to "... special small molecular weight compounds such as phenolics ..."

Figure 1A has to be ameliorated, since the illustrated fruits seem of about the same typology. Please choose another picture better representing what the Authors intend with Figure 1A.

In section 2, the name *Cucumis sativus* has to be written *italics*; please control this in all the text, also for other scientific names. The sentence "*Cucumis sativus* L. (cucumber) shares nutritional similarities with pickles" is not clear and has to be rewritten. Do the Authors intend that fresh cucumbers are similar in their nutritional profile (macronutrients? Please specify what type) to pickled cucumbers?

What do the Authors intend for "sugars (1.37 g)"? What type of sugars? Please explain. Moreover, within the same sentence, the comparison between fresh and pickled cucumbers has to be more clear, reporting also the protein and lipid content for fresh cucumbers in order to compare with pickled ones.

The first line of page 4 reports a compound written as "IP6." Please better define this. Moreover, also the term

“ethanedioic acid” could be better explained as “oxalic acid,” a more trivial name better understandable by readers.

Table 1 has to be also reported in order to better evaluate the abundance or not of the single nutrients, the RDA (Recommended Daily Allowance). Just as an example, an amount of ascorbic acid does not seem so high, having an RDA of 60 mg for a healthy individual. What about the processed cucumbers? This is if Table 1's composition is referred to fresh cucumbers.

The second line on page 5, reporting “... hothouse-grown crops yielding 6 to 11 times more than those in normal soil,” has to be enforced by data in the literature.

On page 5, where the pickle processing is described, the classes A to C and also E of fruits should be better described and defined.

Please report what type of preservatives can be added to the sour-sweet pickles. Sulphur dioxide? Citric acid? Else? Moreover, in this section, a range of possible times for pasteurization could be useful to be reported to the readers.

As regards the paragraph “Salted Pickle Processing,” the scientific name *Lactococcus lactis* has to be written *italics*. This also applies to the first line of page 6.

Page 6, paragraph 4. What do the Authors intend for “oxygenes alkyl”? This seems a strange term. Moreover, please briefly describe the unusual concept of “carbonyl stress.” Please clarify.

The sentence “containing special antioxidants like caricaxanthin, epsilon-carotene, ascorbate, retinol, xanthophyll, and 3'-diol” has to be enforced by quantitative data from the literature for these phytochemicals.

In the conclusion paragraph, the Authors report the use of cucumber for insect control, not enforced by a report in the previous sections. Please clarify or delete from the conclusions, since no report on this aspect has been found in the article.