

Review of: "Impact of Starch Concentration on Chlorella-k-Carrageenan Gel Formation Mechanism"

Stephen Ochigbo¹

¹ Federal University of Technology, Minna

Potential competing interests: No potential competing interests to declare.

Impact of Starch Concentration on Chlorella-k-Carrageenan Gel Formation Mechanism

Abstract

Line 2: "In this work, as an alternative to plastic packaging, microalgae and starch-based materials were employed" is misleading when related to the actual content of the paper; the statement suggests that, in the work, microalgae and starch-based materials were actually employed in making plastic packaging, whereas the work only demonstrates the gel-making tendency for a material, an indicator of a material's suitability for its conversion into film as required by packaging plastics. It is very important to be specific!

1. Introduction

· Starting this section by introducing "Microalgae", which is directly absent in the title, is confusing to a non-specialist in this field. In spite of the fact that the report is primarily intended for specialists, it should also be understandable and readable by non-specialists. As a first step, Chlorella-k-Carrageenan should have been introduced as a species in "Microalgae," and afterwards a general discussion can follow.

· Paragraphs 4 and 5 (pages 2-18), beginning with "Microalgae can be utilized..." and "The packaging industry..." respectively, which focus on general discussion on the topic, should have been better placed within paragraph 1 (pages 1-18).

· The first line of the last paragraph (page 2-18) is suggested to be reframed as follows: "In this work, the aim was to **evaluate** a microalgae-based **potential for** plastic packaging..." or "In this work, the aim was to **study the gel-forming tendency of a microalgae-based alternative to** plastic packaging..."

2. Methodology and Materials

It is more appropriate to rename this as "Theory of Gel Formation" to only include sections 2.1 and 2.2.

· Sections 2.3, 2.4, and 2.5 should be transferred under **Materials and Methodology** as a sub-title under **"Experimental."** Sections 2.3 to 2.5 should be written under "Materials," focusing on the description only of each material rather than explaining how it was used in the experiment, which should be under "Methodology."

· Tables 1 and 2 should each have two rows; the first row bearing the first title “Energy and Nutrients” under column 1 and the second title “For 100 grams” or better framed as “Values/100 grams” under column 2. In the second row, the parameters evaluated will be listed.

3. Experimental

This section could be sub-sectioned into “Materials and Methodology,” as I had earlier suggested.

In 3.1.1 (line 5), the phrase 'heating block' should be replaced appropriately with 'magnetic stirrer/hotplate'.

In my opinion, including **Figure 1** does not, in any way, improve the understanding, inasmuch as the procedure has succinctly been described in the text.

The text under 3.1.2 appears out of context with the heading, which does not mention NaCl. Given the prominence given to NaCl in the text, the heading ought to include mention of NaCl, such as ‘Effect of NaCl...’

The phrase ‘analytic balance’ should read ‘analytical balance’.

Table 3 should be formatted into 2 rows as advised for **Tables 1** and **2**.

Figure 2 is not necessary.

Paragraphs 2 and 3, under 3.2.1, are superfluous details.

4. Results

The first sentence under 4.1 should be transferred to the appropriate section under 3.2.1.

The plots of both "transmittance" and "absorbance" should not be presented simultaneously; either transmittance or absorbance is sufficient.

The equation used for data generation used in the Arrhenius plot should be well stated and explained.

Table rows suggested should also apply to **Tables 4** and **5**.

5. Discussion

The scope should be improved to be commensurate with the extent of the results. It is too brief as it is, as if the authors lack a detailed understanding of the results presented.

6. Conclusions

The statement (line 3 from bottom): Not in agreement with **The fact that there was no chemical gel formation**(though not substantiated as ‘FT-IR’ analysis wasn’t done) **indicates that starch’s addition resulted in a non-favorable packaging material.**” I suggest that ‘**packaging material**’ be replaced by ‘**gel formation**’.

References

I wonder which reference style this is based on, requiring all the texts to be in italics. Conventionally, it should be the title of the journal or book which should be italicised. This should conform to the standard reference style.