

General comments to the authors:

This manuscript documents the replacement of sodium acrylates copolymer with modified chitosan within the processes of emulsion production, and the moisture retention, emulsification condition, and bacterial growth were examined using both emulsifiers. Overall, the paper is not very fundamental in nature; the focus of characterization is only based on IR experiments for such a comparison. This is not a typical paper in Appl. Sci. journal and therefore maybe better suited for another journal. If the paper focused on the property changes as a function of composition with more experiments (such as measuring the particle size either by DLS or TEM techniques) and a deeper fundamental explanation of these changing properties, this would be more appropriate for Appl. Sci. journal

Several other comments:

1. The title of the research article is too general. It matches more if it was a review paper.

According to the comment of the reviewer, the title of this article was corrected as “Discussions on the Properties of Emulsion Prepared by Using an Amphoteric Chitosan as an Emulsifier”

2. Abstract, at the end of the abstract, all these results should contribute to a general conclusion showing the most significant contribution of the research to the knowledge field.

According to the comment of the reviewer, the description “Therefore, the modified chitosan substitutes sodium acrylates copolymer successfully as an emulsifier in the preparation of emulsion.” was added in the end of Abstract.

3. Introduction, Line 102: The paragraph is not related to the previous. It is more related to the first two paragraphs. Avoid "zig-zag" between paragraphs. The reading should be connected, and the "funnel" model in the Introduction should be followed.

According to the comment of the reviewer, this paragraph was moved to the 3rd of the Introduction. The order of references was also corrected.

4. Introduction, Lines 90-92: Important! The goal of the study is very short written here. Please mention the novelty of the work the problem statement clearly and what

makes it different from other similar studies that have been done so far. In order to do this, similar studies should be substantially discussed and cited properly.

The studies related to the advantages of chitosan are described in the first paragraph of the Introduction, and the similar studies related to the amphoteric molecule are described in the 2nd paragraph of the Introduction. In addition, analyzing some studies associated with chitosan molecule used in the emulsification and the characterization studies from Table 1 inspired the preparation of amphoteric chitosan to replace conventional emulsifiers in the emulsification process. Therefore, “the goal of this study was to modify chitosan as an amphoteric substance to replace sodium acrylates copolymer as an emulsifier in the preparation of emulsion and to discuss the advantages of amphoteric chitosan as an emulsifier by examining the amount of emulsifier required, the antibacterial effect, the moisture retention, and the emulsion stability.”

The descriptions in the quotation marks were inserted into lines 123 - 127 in the page 3.

5. Result and discussion, the stability of the samples with two different emulsifiers could be assessed better by DLS and UV spectroscopy measurements.

Thanks for the reviewer's comment. There are two methods used to assess emulsion stability. The DLS or UV spectroscopy measurement will be considered to discuss deeply effects of droplet size or distribution on stability or other properties of emulsion in future study.

6. The conclusion of the study is too broad. It could be improved with precise outcomes with a take home message.

According to the comment of the reviewer, the following descriptions “Therefore, the advantages, including the smaller dose, the better moisture retention, the lower number of bacteria, and the better stability for using the amphoteric chitosan, make it replace sodium acrylates copolymer successfully as an emulsifier in the preparation of emulsion.” were added in the end of conclusion.