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1. Initial Validation ✓ 2. Editorial Assignment ✓ 3. Independent Review ✓ 4. Interactive Review ✓ 5. Review Finalized ✓ 6. Final Validation ✓ 7. Final Decision

Effect of additives on surface tension, viscosity, transparency and morphology structure of Aloe Vera gel-based coating

Luh Suriati* , I Made Supartha Utama, Bambang Admadi Harsojuwono and Ida Bagus Wayan Gunam

Original Research, Front. Sustain. Food Syst. - Sustainable Food Processing
Received on: 08 Dec 2021, **Edited by:** Poliana Mendes De Souza
Manuscript ID: 831671
Research Topic: Biopreservation Strategies for Sustainable Food Processing
Keywords: Bio preservative, formula, Edible coating, Aloe gel, coating

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Reviewer 5
Independent review report submitted: 10 Jan 2022

Initial recommendation to the Editor: Revision is required

EVALUATION

Q 1 **Please list your revision requests for the authors and provide your detailed comments, including highlighting limitations and strengths of the study and evaluating the validity of the methods, results, and data interpretation. If you have additional comments based on Q2 and Q3 you can add them as well.**

Reviewer 5 | 10 Jan 2022 | 11:31 #1

Ref: “Effect of additives on surface tension, viscosity, transparency and morphology structure of Aloe vera gel-based coating”. The work has some merit to be published in Frontiers in Sustainable Food Systems. In my opinion, it needs some changes before reconsideration for probable publication. The keywords especially ‘formula’ and ‘coating’ are not suitable therefore must be modified. The sentence in lines 39-40 ‘The coating ..... an antimicrobial’ needs further clarification and rewriting for clarity. The introduction is up to date but may be improved further. There are some literature in which combined use of ascorbic acid and Aloe vera coating was used which may be included i.e. https://doi.org/10.1111/jfbc.13136. The words ‘Aloe vera’ should be italic in the whole manuscript. Lettering may be added in the figures. The figure captions are incomplete and should be through enough and self-explanatory. The word ‘AVG’ should be replaced with ‘AVG coating’ in the whole manuscript. Figure 6 should be further improved by mentioning the type of additive in coating B and C. There are several technical names in references which are not italic and should be italicized.

Q 2 **Check List**

Reviewer 5 | 10 Jan 2022 | 11:31 #1

b. Does the reference list cover the relevant literature adequately and in an unbiased manner?
- Yes

c. Are the statistical methods valid and correctly applied? (e.g. sample size, choice of test)
- Yes

d. Is a statistician required to evaluate this study?
- No

e. Are the methods sufficiently documented to allow replication studies?
- Yes

QUALITY ASSESSMENT

Q 3	Rigor	
Q 4	Quality of the writing	
Q 5	Overall quality of the content	
Q 6	Interest to a general audience	

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Language evaluation
Editorial Office 09 Dec 2021 - 08:52 GMT
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Ethics guidelines
12 Jan 2022 - 13:26 GMT
I am checking that the ethics statement and manuscript comply with our ethics guidelines and policies.

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Human studies statement verification
AIRA **AIRA** 12 Jan 2022 - 13:26 GMT
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Commercial conflicts

12 Jan 2022 - 13:26 GMT

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Commercial keyword detection

AIRA 12 Jan 2022 - 13:26 GMT

I did not detect any potential commercial conflicts of interest.

Data availability

08 Dec 2021 - 16:25 GMT

I am checking that the manuscript complies with our data availability guidelines.

Data availability statement verification

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The author selected the following statement: The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

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Handling Editor: Poliana Mendes De Souza
Received date: 08 Dec 2021
Editorial assignment start date: 08 Dec 2021
Independent review start date: 13 Dec 2021
Interactive review activated date: 18 Dec 2021
Review finalized date: 10 Jan 2022
Final validation date: 12 Jan 2022

Effect of additives on surface tension, viscosity, transparency and morphology structure of Aloe vera gel-based Nano-coating

Corresponding Author: Luh Suriati | 27 Dec 2021 | 12:57 Draft

Dear Editor

I have revised the manuscript in accordance with the reviewer's advice. To make it easier to experience it, I use red ink and bitu. Hopefully this improvement can be accepted and my manuscript can publish in your journal

Thank you

Best Regards

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History	Editor Active	Reviewer 1 Finalized	Reviewer 2 Rejected	Reviewer 3 Finalized	R	Reviewer Finalized

Date	Updates
12 Jan 2022	Article accepted for publication.
10 Jan 2022	Corresponding Author Luh Suriati re-submitted manuscript.
	Review of Reviewer 5 is finalized.
06 Jan 2022	Corresponding Author Luh Suriati re-submitted manuscript.
	Corresponding Author Luh Suriati re-submitted manuscript.
	Corresponding Author Luh Suriati re-submitted manuscript.
05 Jan 2022	Review of Review Editor 4 finalized.
	Corresponding Author Luh Suriati re-submitted manuscript.
	You posted new comments.
	Reviewer 4 posted new comments.
	Corresponding Author Luh Suriati re-submitted manuscript.
	You posted new comments.
	Reviewer 4 posted new comments.
	Corresponding Author Luh Suriati re-submitted manuscript.
	You posted new comments.

04 Jan 2022	You posted new comments.
	Reviewer 4 posted new comments.
	Corresponding Author Luh Suriati re-submitted manuscript.
	You posted new comments.
	You posted new comments.
03 Jan 2022	Reviewer 4 posted new comments.
	You posted new comments.
	You posted new comments.
	Corresponding Author Luh Suriati re-submitted manuscript.
	Corresponding Author Luh Suriati re-submitted manuscript.
	You posted new comments.
02 Jan 2022	You posted new comments.
	You posted new comments.
31 Dec 2021	Reviewer 4 posted new comments.
29 Dec 2021	Corresponding Author Luh Suriati re-submitted manuscript.
28 Dec 2021	Review of Reviewer 3 is finalized.
	Review of Review Editor finalized.
27 Dec 2021	You posted new comments.
	You posted new comments.
18 Dec 2021	Interactive review forum activated.
08 Dec 2021	Corresponding Author Luh Suriati submitted manuscript.

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Reviewer 1
Independent review report submitted: 14 Dec 2021
Interactive review activated: 18 Dec 2021
Review finalized: 28 Dec 2021

Initial recommendation to the Editor: Revision is required

EVALUATION

Q 1 **Please list your revision requests for the authors and provide your detailed comments, including highlighting limitations and strengths of the study and evaluating the validity of the methods, results, and data interpretation. If you have additional comments based on Q2 and Q3 you can add them as well.**

Reviewer 1 | 14 Dec 2021 | 04:48 #1

The manuscript is design very well but the manuscript need more changes before acceptance. The methodology and explanation of the results are very weak. Author need to improve it. Therefore, I recommend major revision before considering his manuscript for publishing.

Title need improvement can be write like: Effect of additives on surface tension, viscosity, transparency and morphology structure of aloe vera gel based Nano-coating
The best numeric value of data should write in abstract section
Keyword is missing after abstract section
Line 29-30: describe the ideal size of nanocoating
Line 82-83: Then, they were washed thoroughly with running water to remove the yellow mucus residue and unpleasant odors that can reduce the quality of the gel. Chlorinated water instead of running water to remove the impurities and dust particles.
Homogenizer Philip HR 2116: provide city and country of origin for instrument
Methodology section is incomplete, author needs to write methods for all the experimental parameters separately i.e. acidity, sem, and others
Author evaluate only Color L* value? Why? a*, b* and color difference is an important for the any coating materials which indicated the appearance of the additives within matrix.

Author need to cite more related article (below):
https://doi.org/10.1016/j.foodres.2020.109582
Nutrition & Food Science, Vol. 49 No. 5, pp. 793-823. https://doi.org/10.1108/NFS-10-2018-0294
DOI:10.1016/j.reactfunctpolym.2019.104350
https://doi.org/10.1016/j.lwt.2020.110435
https://doi.org/10.1021/acsfoodscitech.0c00076
https://doi.org/10.3390/ma14123305
https://doi.org/10.1002/star.202000101

Review supporting file - 226227

Corresponding Author: Luh Suriati | 27 Dec 2021 | 12:50 #2

Dear Reviewer 1

I have revised the manuscript in accordance with your advice. To make it easier for anyone to check it, I use red ink. Hopefully this improvement can be accepted and my manuscript can publish in your journal

Thank you.

Best Regards

Review supporting file - 232853

Corresponding Author: Luh Suriati | 27 Dec 2021 | 13:05 #3

Dear Reviewer 1

I have revised the manuscript in accordance with your advice. To make it easier for anyone to check it, I use red ink. Hopefully this improvement can be accepted and my manuscript can publish in your journal

Thank you.

Best Regards

Review supporting file - 232867

Q 2 Check List

Reviewer 1 | 14 Dec 2021 | 04:48 #1

a. Is the quality of the figures and tables satisfactory?
- Yes

b. Does the reference list cover the relevant literature adequately and in an unbiased manner?
- Yes

c. Are the statistical methods valid and correctly applied? (e.g. sample size, choice of test)
- Yes

d. Is a statistician required to evaluate this study?
- Yes

e. Are the methods sufficiently documented to allow replication studies?
- Yes

QUALITY ASSESSMENT

Q 3 Rigor

Q 6	Interest to a general audience

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Reviewer 2
Interactive review activated: 18 Dec 2021
Independent review report submitted: 21 Dec 2021

Initial recommendation to the Editor: The manuscript should be rejected

This reviewer recommended rejection of the manuscript on 21 Dec 2021. Discussions for this review are closed.

Reason:
The manuscript contains fundamental errors that cannot be rectified through author revisions.

EVALUATION

Q 1 **Please list your revision requests for the authors and provide your detailed comments, including highlighting limitations and strengths of the study and evaluating the validity of the methods, results, and data interpretation. If you have additional comments based on Q2 and Q3 you can add them as well.**

Reviewer 2 | 21 Dec 2021 | 13:53 #1

This manuscript studied the prepared coatings of the leaf part of the aloe vera, and a mixture of additives, citric acid, ascorbic acid, and potassium sorbate at a concentration of 0.15%, respectively. Their surface tension, acidity, viscosity, colour, transparency and morphology were compared.
Firstly, citric acid, ascorbic acid, and potassium sorbate are soluble in water. Only the aloe vera may be to form a nano size. However, this manuscript did not show direct measurement of nano-particle size of the nano-coating.
Secondly, which company did the authors buy the materials: citric acid, ascorbic acid, and potassium sorbate.
The last and the most important, did the author use their nano-coatings to spray on some fruits to extend the shelf-life of fruits? Otherwise, what is the scientific meaning to conduct this experiments?

Reviewer 2 | 21 Dec 2021 | 13:53 #1

a. Is the quality of the figures and tables satisfactory?
- Yes

b. Does the reference list cover the relevant literature adequately and in an unbiased manner?
- Yes

c. Are the statistical methods valid and correctly applied? (e.g. sample size, choice of test)
- No

d. Is a statistician required to evaluate this study?
- Yes

e. Are the methods sufficiently documented to allow replication studies?
- Yes

QUALITY ASSESSMENT

Q 3	Rigor	■■□□□
Q 4	Quality of the writing	■■■□□
Q 5	Overall quality of the content	■□□□□
Q 6	Interest to a general audience	■□□□□

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Reviewer 3
Independent review report submitted: 28 Dec 2021

Initial recommendation to the Editor: Substantial revision is required

EVALUATION

Q 1 **Please list your revision requests for the authors and provide your detailed comments, including highlighting limitations and strengths of the study and evaluating the validity of the methods, results, and data interpretation. If you have additional comments based on Q2 and Q3 you can add them as well.**

Reviewer 3 | 28 Dec 2021 | 11:41 #1

The manuscript deals with an aloe-vera based coating used for extending fruit shelf-life. It analyses the effects of three different additives and their mixture on different properties of the coating such as surface tension,viscosity, transparency. Generally, the study is interesting; however, the manuscript is in part written superficially without providing sufficient information on the subject and contains several major flaws that need to be addressed in order to meet the criteria of scientific publishing.

Below, suggestions for the improvement and/or correction of the manuscript are provided. It is suggested the authors address these and apply the corrections and/or modifications where necessary:

- In the title it would be useful to mention what type of coating was analysed in the study, e.g. “aloe vera based nano-coating”.
- Page 2, line 51: “has a bad odour” is this true?
- Page 2, line 55: Instead of “cheap”, it would be better to say “low-cost”
- Page 2, line 64: Instead of “a good nano-coating formula that potential to extend” it should be “a good nano-coating formula with potential to extend”
- Page 3, line 69: Is Miller the producer of the aloe vera leaves? Please specify this more clearly, providing the producer's location (country, city) as well.
- Page 3, line 73: A verb is missing in the sentence, probably it should be “each of concentration of 0.15% were varied.” or similar.

reference to the relevant literature where this information can be found.
- Page 3, line 98: Does “According to24” refer to a specific reference? If so, please, adapt the referencing style to the journal format.
- Page 4, line 110: Please provide the relevant information on the producer of the Q125 Masonic sonicator.
- Page 4, lines 111-112: Why is the sentence regarding biological activity here? It has nothing to do with the topic of the paragraph.
- All experimental methods and procedures should be described in Section 2 “Materials and methods”. Currently, the methods which were used to obtain the results presented in Section 3 (surface tension, acidity, viscosity, transparency, colour, morphology) are described only briefly in Section 3 or are not described at all.
- Page 4, line 127: Please, define what interface tension is and describe more in detail on which basis the provided conclusion regarding the correlation of interface tension and adhesion was made (experience, theory, other studies…) - possibly, provide relevant references as well.
- Page 4, lines 129-131: How can surface tension of the coating liquid be correlated with the adhesion power between the coating and the material to be coated? Isn’t surface tension of the liquid/coating its inherent property. Please, provide more information on the theoretical background and/or relevant references concerning surface tension and adhesion.
- In Figure 1, on the Y-axis please provide the parameter and the units.
- Page 5, lines 136-137: Authors claim that the concentration of additives contributed to the increase in surface tension of nano-coating on day 5. However: (1) only one concentration was tested in the study, so it is not clear how different concentrations affect surface tension, (2) on day 5, surface tension did not increase but decreased as compared to day 0.
- Page 5, lines 142-143: Since the observation time in the present study was 15 days, it would be useful to mention that the nano-coating was stable over a period of 15 days.
- Page 5, lines 143-144: Sentence is unclear, Please, rewrite.
- Page 5, lines 146-148: Sentence repeats the claims provided on page 5, lines 137-138.
- Page 6, lines 156-157: The sentence “The use of sorbic acid…” does not convey any relevant information.
- Page 7, lines 171-172: Authors claim that the concentration of 0.15% produced the lowest viscosity of the nano-coating; however, only one concentration was tested in the study, so it is not clear how different concentrations affect the viscosity of the nano-coating. Please, rephrase.
- On page 7, sentences on lines 173-174 and 174-175 repeat the same information.
- Page 7, line 176: Instead of “Additives”, it should be “Mix of additives”.
- Page 7, lines 185-187: Please, explain how colour brightness can be interpreted from the L* value.
- Page 8, lines 203-205: How does the fact that “potassium sorbate is an unsaturated fatty acid in the form of yellowish-brow powder” enable the highest transparency of the nano-coating?
- Page 8, lines 205-206: The sentence is incomplete.
- Page 8, lines 221-222: Please, explain, which coating does the work (Basaglia et al., 2021) refer to and how is this correlated with the present study.
- Page 8, lines 226-227: Why at the end of the sentence which explains that the coating morphology was analysed by scanning electron microscopy, the work of (Thakur et al., 2018) which is not dealing with nano-coating or scanning electron microscopy is referenced?
- Generally, section 3 “Results and discussion” would be easier to follow if results from Table 1 were presented in the form of graphs as well, i.e. similar as in Figure 1.
- Page 8, lines 230-231 and page 9, line 232: Please, explain which additives were used in coating (B).
- Page 9, lines 233-236: One of the main problems of the manuscript is that the authors combine descriptions of results with citing other studies in a confusing and unrelated manner. Often, information that is not directly related to the described results is provided and referenced which can be confusing to the reader. The same comment refers to e.g. lines 239-245, 226-227, 221-222, 203-205, 173-175, 169-171, 156-157, 143-144, etc.
- Page 9, lines 239-245: Here, relatively random quotes from other studies are provided, not directly related to the described results (see previous comment). This information would be more suitable for the Introduction section.
- Page 9, line 254: Authors claim that the best nano-coating formulation is obtained at a concentration of 0.15%; however, only one concentration was tested in the study, so it is not clear whether different concentrations would provide better results or not. Please, rephrase.
- Page 9, line 255: Authors claim that the analysed nano-coating has potential to extend the shelf-life of fruit; however, in the present study, the influence of the nano-coating on the shelf-life of fruit was not analysed and it is thus not clear how the coating affects the fruit shelf-life. Please, rephrase.

Reviewer 3 | 28 Dec 2021 | 11:41 #1

a. Is the quality of the figures and tables satisfactory?
- No

b. Does the reference list cover the relevant literature adequately and in an unbiased manner?
- Yes

c. Are the statistical methods valid and correctly applied? (e.g. sample size, choice of test)
- Yes

d. Is a statistician required to evaluate this study?
- No

e. Are the methods sufficiently documented to allow replication studies?
- No

QUALITY ASSESSMENT

Q 3	Rigor	2
Q 4	Quality of the writing	2
Q 5	Overall quality of the content	2
Q 6	Interest to a general audience	3

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Reviewer 4
Independent review report submitted: 18 Dec 2021
Interactive review activated: 18 Dec 2021
Review finalized: 05 Jan 2022

Initial recommendation to the Editor: Revision is required

EVALUATION

Q 1 **Please list your revision requests for the authors and provide your detailed comments, including highlighting limitations and strengths of the study and evaluating the validity of the methods, results, and data interpretation. If you have additional comments based on Q2 and Q3 you can add them as well.**

Reviewer 4 | 18 Dec 2021 | 18:32 #1

Thanks to the authors! The topic of this research is really important. I have read the paper with a great interest and evaluate it in general positively.
I have some questions and suggestions for the authors:
1. The influence of the studied parameters (surface tension, viscosity, transparency, morphology of the nanocoating, acidity, Color L*) on the quality of the nanocoating should be explained before defining the aim in the introduction. It has to be explained, why these parameters are chosen? Otherwise, the goal becomes clear only after reading the whole paper.
2. In the paper is not clearly defined, what has been studied: the properties of the gel (raw material for nanocoating) or the dried nanocoating?
3. What do the authors mean by the stability of the nanocoating (e.g. in rows 45, 59, 61, etc.)? Is it biodegradation time, mechanical strength, adhesion to the surface of the product, thermal stability, parameter stability over time or something else?
4. Information on methodologies / standards and/or apparatus and equipment for measuring the values of the parameters (surface tension, viscosity, transparency, morphology of the nanocoating, acidity, L* color) must be provided (in “Materials and methods”)
5. It is not clear, what is the size of the additives used in the experiments.
6. Measurement errors are not indicated in the data in Fig.1 and Tab.1. It is not possible to make conclusions without the evaluation of measurement errors.

8. It is worth to compare the obtained numerical results with the numerical results given in the papers of other authors.
9. An incorrect formulation from the point of view of physics: “203 Transparency refers to the ability of a material to emit light”
10. Unfortunately Fig. 2 (C) does not give confidence that the coating contains nanoparticles, because the size of the additive particles (visible in it) is 1-20 um instead of 100 nm and smaller.

Corresponding Author: Luh Suriati | 27 Dec 2021 | 12:04 #2

Dear Reviewer 4

I have revised the manuscript in accordance with your advice. To make it easier for anyone to check it, I use blue ink. Hopefully this improvement can be accepted and my manuscript can publish in your journal

Thank you.

Best Regards

Dr. Luh Suriati

Reviewer 4 | 31 Dec 2021 | 17:08 #3

I have reviewed the version of the manuscript from December 29. The changes made by the authors were unfortunately insignificant. They did not improve the quality of the article. The article has to be radically reworked to publish it. I want to help the authors. Therefore, I ask the authors to answer the questions below first.

1. The meanings of the studied parameters (surface tension, viscosity, transparency and morphology structure) are not explained in the introduction. Why these parameters are chosen in the study? This should be explained in the introduction before the aim.

2. The term “nano-coating” is used in the article, but tests (e.g. surface tension, viscosity, pH) have been performed on AV gel. So what has been studied - the gel (it is not a nanocoating) or its dried nanocoating (for example, see SEM pictures)? AVG and Nano-coating - these are 2 different things that should be studied separately.

3. Please explain why the properties of the prepared gel are studied within 15 days? Why can't the gel be applied fresh to the surface of the fruit immediately after preparation? Is it really important to keep the gel in a container for 15 days and then apply it?

4. What do the authors mean by "stability of the nano coating"?

5. Row 130: Vargas et al., (2008) method- not found in the references.

6. Row 134: Al-Hassan and Norziah (2012) method- not found in the references.

7. Measurement errors have not been evaluated. Without the evaluation of measurement errors (statistical data processing), the results make no sense.

8. Fig. 1- 5: numerical values of the measured parameters on the columns are not necessary. This is a redundant information. Data can be read from the values on the Y-axis. Instead of that, the values of measurement errors (+ -) could be displayed at the top of the columns.

9. Fig. 6: it is mandatory to show the scale and the parameters of the microscope on the SEM images (as it was in the version from December 8). Otherwise, these images make no sense. The last changes have reduced the quality of the manuscript.

10. The section “Materials and methods” must include the explanation of the sample preparation process for SEM studies.

11. Are sizes of the nanoparticles determined? If so, how it has been done?

Please write certain answers of each question (corresponding to the numbers) in comments. The manuscript is available to reviewers only in black and white, thus the latest changes (made by the authors) are not clearly recognisable in the text.

Corresponding Author: Luh Suriati | 02 Jan 2022 | 18:35 #4

Dear Reviewer,

I send back the revision of my manuscript, and I really hope you can accept it. Thank you. Best Regards.

1. The meanings of the studied parameters (surface tension, viscosity, transparency and morphology structure) are not explained in the introduction. Why these parameters are chosen in the study? This should be explained in the introduction before the aim.

The parameters surface tension, viscosity, transparency and morphology structure are chosen in the study because according to Galgano et al. (2015) are able to cover the coated surface (adhesion) Which is closely related to surface tension and morphology structure of coating. In addition, the coating is easily emulsified, low viscosity, non-sticky, dries quickly, bright and transparent.

2. The term “nano-coating” is used in the article, but tests (e.g., surface tension, viscosity, pH) have been performed on AV gel. So, what has been studied - the gel (it is not a nanocoating) or its dried nanocoating (for example, see SEM pictures)? AVG and Nano-coating - these are 2 different things that should be studied separately.

This study reviews about coatings made from aloe vera gel with the addition of various types of additives. The coating material formula is in the size of nano particles. For SEM testing we do dry coating in Petri dish first because the SEM tool we use cannot read the coating in wet conditions

3. Please explain why the properties of the prepared gel are studied within 15 days? Why can't the gel be applied fresh to the surface of the fruit immediately after preparation? Is it really important to keep the gel in a container for 15 days and then apply it?

Nano-coating formulas made from aloe vera gel can be used immediately after preparation. I do storage for up to 15 days to see the characteristic changes of the nano-coating survive cold temperature storage. It turns out that with a maximum storage of 15 days the coating formula is still very good to apply.

4. What do the authors mean by "stability of the nano coating"?

Stability determines adhesion of Nano-coating to the surface of the product. Stability

it also shows the consistency of aloe vera gel formula that does not change color and viscosity

5. Row 130: Vargas et al., (2008) method- not found in the references.

I am sorry to miss, I'll add

6. Row 134: Al-Hassan and Norziah (2012) method- not found in the references.

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Thank you, I will fix it.

9. Fig. 6: it is mandatory to show the scale and the parameters of the microscope on the SEM images (as it was in the version from December 8). Otherwise, these images make no sense. The last changes have reduced the quality of the manuscript.

I am sorry for the image appearance error, the SEM image I displayed only wanted to display AVG coating without additives and AVG with additives.

10. The section “Materials and methods” must include the explanation of the sample preparation process for SEM studies.

Thank you, I will fix it

11. Are sizes of the nanoparticles determined? If so, how it has been done?

The agitation of AVG used a sonicate model Q125 Masonic to obtain the additive nanostructures, with a pulse 59-time delay of 30 s for 50 min. The fields of nanoscience and nanotechnology also use UV-vis spectrophotometer analysis to predict the size and shape of nanoparticles. The results of the UV-Vis spectrophotometer analysis still need to be strengthened by other analyses such as SEM. UV-vis spectrophotometer measurements on aloe vera gel were carried out in a wavelength range of 200–500 nm. (Zambrano-Zaragoza et al., 2018) stated that at a wavelength of 200–500 nm, the maximum absorbance indicates a particle size of 20–110 nm.

12. Row 82: are the concentrations of the additives given by weight percent or by volume percent?

Thank you, I will fix it

Corresponding Author: Luh Suriati | 02 Jan 2022 | 18:44 #5

Dear Reviewer

I send back the revision of my manuscript, and I really hope you can accept it.

Thank you.

Best Regards.

Dr. Luh Suriati

Review supporting file - 235539

Corresponding Author: Luh Suriati | 03 Jan 2022 | 07:22 #6

Dear Reviewer

I send back the revision of my manuscript, and I really hope you can accept it.

Thank you.

Best Regards.

Review supporting file - 235736

Corresponding Author: Luh Suriati | 03 Jan 2022 | 07:38 #7

Dear Reviewer

I send back the revision of my manuscript, and I really hope you can accept it.

Thank you.

Best Regards.

Dr. Luh Suriati

Review supporting file - 235744

Reviewer 4 | 03 Jan 2022 | 14:16 #8

1. The meanings of the studied parameters (surface tension, viscosity, transparency and morphology structure) are not explained in the introduction. Why these parameters are chosen in the study? This should be explained in the introduction before the aim.

The authors' answer to this question is not convincing. No explanation is given in the introduction.

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The reader is being misled: the term "nano-coating" is used everywhere in the work, but the properties of the gel, from which the nano- coating later can be obtained, are actually studied instead of the nano-coating. AVG is a liquid state of a substance, the nanocoating is a solid state. AVG and nano-coating are 2 different things. Please follow this and make the appropriate correction in the manuscript.

3. Please explain why the properties of the prepared gel are studied within 15 days? Why can't the gel be applied fresh to the surface of the fruit immediately after preparation? Is it really important to keep the gel in a container for 15 days and then apply it?

Autors: “Nano-coating formulas made from aloe vera gel can be used immediately after preparation. I do storage for up to 15 days to see the characteristic changes of the nano-coating survive cold temperature storage. It turns out that with a maximum storage of 15 days the coating formula is still very good to apply.”

This needs to be explained in the introduction.

4. The section “Materials and methods” must include the explanation of the sample preparation process for SEM studies.

Unfortunately, this is not described in the text.

5. Are sizes of the nanoparticles determined? If so, how it has been done?

If the authors have not determined the size of nanoparticles themselves, then why is it written in the chapter "Materials and Methods"? This is a misleadingness of a reader.

6. Row 82: are the concentrations of the additives given by weight percent or by volume percent?

Unfortunately, this is not described in the text.

7. In Fig. 1, 3, 5: the measured value and its unit must be indicated on the Y axis. Please remove decimal places (zeros after comma) in the Fig. 2 and Fig. 5

1. The meanings of the studied parameters (surface tension, viscosity, transparency and morphology structure) are not explained in the introduction. Why these parameters are chosen in the study? This should be explained in the introduction before the aim.

The authors' answer to this question is not convincing. No explanation is given in the introduction.

* I am already given in the introduction.

2. The term “nano-coating” is used in the article, but tests (e.g. surface tension, viscosity, pH) have been performed on AV gel. So what has been studied - the gel (it is not a nanocoating) or its dried nanocoating (for example, see SEM pictures)? AVG and Nano-coating - these are 2 different things that should be studied separately.

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This needs to be explained in the introduction.

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* I am already given the sample preparation process for SEM studies in Materials and methods

5. Are sizes of the nanoparticles determined? If so, how it has been done?

If the authors have not determined the size of nanoparticles themselves, then why is it written in the chapter "Materials and Methods"? This is a misleadingness of a reader.

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* I am already revising my manuscript, thank you for your correction

Review supporting file - 236164

Q 2 Check List

Reviewer 4 | 18 Dec 2021 | 18:32 #1

a. Is the quality of the figures and tables satisfactory?
- Yes

b. Does the reference list cover the relevant literature adequately and in an unbiased manner?
- Yes

c. Are the statistical methods valid and correctly applied? (e.g. sample size, choice of test)
- No

d. Is a statistician required to evaluate this study?
- No

e. Are the methods sufficiently documented to allow replication studies?
- No

Corresponding Author: Luh Suriati | 03 Jan 2022 | 13:40 #2

Dear Reviewer

Thank you very much for your review. I am already revise the manuscript and hope accepted.

Thank you very much

Best regards

Dr. Luh Suriati

Review supporting file - 235914

Corresponding Author: Luh Suriati | 04 Jan 2022 | 05:40 #3

Dear Reviewer

Thank you very much for your review. I am already revise the manuscript and hope accepted.

Thank you very much

Best regards

Dr. Luh Suriati

Reviewer 4 | 04 Jan 2022 | 14:24 #4

1. Fig.5, Y-axis: Transparency, %, Maximum - 100%, but not 120%.

2. Row 84: Is it correct "150 grams per 1 liter= 0,15% w/v"?

3. The explanation is not clear in lines 130-133:

"Put the sample on the specimen. Setting the height of the sample surface is equal to the height of the specimen holder surface, then tighten the screw with the appropriate L key. The vacuum process is done on the sample before being inserted into the chamber, the sample must be coated first using an auto fine coater"

Corresponding Author: Luh Suriati | 04 Jan 2022 | 15:36 #5

Dear Reviewer

I am already revise depend on your correction. Thank you very much.

Best regards

1. Fig.5, Y-axis: Transparency, %, Maximum - 100%, but not 120%.

*Thank you for your correction, I am already revise.

2. Row 84: Is it correct "150 grams per 1 liter= 0,15% w/v"?

*I am so sorry. That is not correct. 1.5 gram per 1 liter = 0.15% (w/v). Thank you for your correction.

3. The explanation is not clear in lines 130-133: "Put the sample on the specimen. Setting the height of the sample surface is equal to the height of the specimen holder surface, then tighten the screw with the appropriate L key. The vacuum process is done on the sample before being inserted into the chamber, the sample must be coated first using an auto fine coater"

*The dry sample of coating is placed on the specimen holder. The height of the sample surface must be the same as the surface level of the specimen holder, then the screw is tightened. The vacuum process is carried out before the sample is inserted into the chamber. The vacuum system is carried out because electrons are very small and light. If there are other air molecules the electrons moving towards the target will be scattered by the collision before hitting the target, thus removing air molecules is very important. Samples that are exposed to electrons will release new electrons which will be received by the detector and sent to the monitor. (already revise)

Review supporting file - 236425

Reviewer 4 | 05 Jan 2022 | 09:10 #6

1) You need to separate the terms AVG and AVG coating. For example:

2. Materials and methods

2.1. Preparation of the AVG

2.2. Determination of the properties of the AVG

2.3. Preparation of an AVG coating

3. Results and discussion

3.1. Surface tension of the AVG

3.2. Acidity of the AVG

3.3. Viscosity of the AVG

3.4. Colour (L*) of the AVG (or Colour (L*) of the AVG coating?)

3.5. Transparency of the AVG (or Transparency of the AVG coating?)

3.6. Morphology of the AVG coating

2) You don't have to explain the working principle of SEM and the need for a vacuum (this is clear to everyone). All you have to do is explain how the samples were prepared for the microscope.

Corresponding Author: Luh Suriati | 05 Jan 2022 | 11:14 #7

Dear Reviewer

Thank you very much for your correction. I am already revise the manuscript as your suggestion and I hope accepted.

Thank you very much

Best regards

Dr. Luh Suriat

Review supporting file - 236815

Reviewer 4 | 05 Jan 2022 | 13:19 #8

Please specify the numbering:
2.3.Preparation of an AVG coating
2.4.Determination of the properties of the AVG coating

Corresponding Author: Luh Suriati | 05 Jan 2022 | 13:25 #9

Dear reviewer

Thank you very much for your correction

best regards

Review supporting file - 236907

Reviewer 4 | 05 Jan 2022 | 13:35 #10

Now you have mixed the numbering in Chapter 3 "Result and discussion"

Corresponding Author: Luh Suriati | 05 Jan 2022 | 13:41 #11

Dear reviewer

Thank you very much for your correction

best regards

Review supporting file - 236914

Q 4	Quality of the writing
Q 5	Overall quality of the content
Q 6	Interest to a general audience

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