

Review Form 1.7

Journal Name:	International Journal of Plant & Soil Science
Manuscript Number:	Ms_IJPSS_95742
Title of the Manuscript:	Evaluation of physical, chemical and sensory properties of multigrain cookies prepared using wheat, oats and sorghum flours
Type of the Article	Original Research Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<https://www.journalijpss.com/index.php/IJPSS/editorial-policy>)

Review Form 1.7

PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<p>Compulsory REVISION comments</p> <ol style="list-style-type: none"> 1. Is the manuscript important for scientific community? (Please write few sentences on this manuscript) 2. Is the title of the article suitable? (If not please suggest an alternative title) 3. Is the abstract of the article comprehensive? 4. Are subsections and structure of the manuscript appropriate? 5. Do you think the manuscript is scientifically correct? 6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form. <p><u>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</u></p>	<p>Yes, the manuscript is important since diets need to be more and more varied to contemplate a larger number of consumers, at the same time offering quality food products.</p> <p>Yes, the title coherently encompasses what was addressed in the manuscript.</p> <p>The summary needs to be revised, as it gives an idea that all the biscuits were sensorially evaluated and one of them was the most acceptable and in reality this was not what happened.</p> <p>Yes, in general, but I suggested in Results and Discussion the creation of a Sensory Analysis sub-item.</p> <p>Yes, I believe that the manuscript is sufficiently scientific but I recommend further discussion on some topics, soon the number of references will increase and I suggest that they are more updated.</p> <p>Here I suggest some points about the manuscript:</p> <p>ABSTRACT: The phrase "Different composite flours are used in different proportions to prepare biscuits", is not well understood in this summary. Are we talking about the article itself or in general?</p> <p>INTRODUCTION: The phrase "Gluten free cookies is a main bakery food product develop from legume or cereal fortification, act as a sweeteners, shortenings and leavening agents. In addition, other cereal crops such as cassava, corn, rice, chestnut are used to produce flours and with starch premixes develop composite flour for small baked food products such as cookies production (Simons and Hall, 2018)." Does it not clearly clarify how fortification with legumes and cereals can work as sweeteners?</p> <p>MATERIALS AND METHODS:</p> <p>Item 2.1- Raw materials, in this item some points need to be better explained, for example, were all cereals purchased/acquired with the same moisture content? What are the varieties of these cereals, as they all have numerous varieties. There are several species in the genus of oats (<i>Avena</i> spp.), but two stand out in world grain production: <i>Avena sativa</i> or white oats (80% of the world's area) and <i>Avena byzantina</i> or yellow oats (20% of the world's area). Barleys are divided into winter and spring barleys. Both types are subdivided into varieties that, according to the arrangement of grains on the cob, are classified into two-row and six-row barley. So it is with wheat, and apparently in order to profit from the higher prices, farmers are also opting for superior wheat varieties such as Lokwan and Sharbati, the premium types that earn the highest returns. Soon it becomes necessary to specify the varieties of cereals involved in the research, as well as their description with scientific names.</p> <p>Also in this item, what is the name of the equipment used in the milling process? Was it an experimental mill? Was it taken to some milling industry?</p>	

Review Form 1.7

	<p>In item 2.2, even after mentioning that almost everything was done according to the AOAC methods, the authors could quickly and succinctly describe the methods.</p> <p>In item 2.3, one sentence is in disagreement (The higher apparent density of the flour suggests the greater suitability of the flour for use in the preparation of food products, as it contributes to greater thickness for food products, unlike flour with low apparent density, which can be used in the formulation of preparations of bakery food products (Chandra et al. , 2014)), as this item is about materials and methods and not the literature review or discussion. In this item the word formula should be replaced by Equation 1.</p> <p>In items 2.3 and 2.4, sentences starting with numerals should be revised and rewritten.</p> <p>I suggest adding the term "and cookies" to item 2.2- Approximate analysis of composite flour, as these analyzes were also performed on cookies.</p> <p>Item 2.4 must also be carried out, that is, the title of this item must address the energy calculation of biscuits as well.</p> <p>Item 2.5- Cookies formulation should be noted, it is confusing and repetitive. I suggest that the authors create a Table with the formulations elaborated and keep only what is necessary in the text. The following sentence is repetitive: "The biscuits were made with flour composed of cereals, fat, sodium bicarbonate, ammonium salt and water." could be a Table like Table 1- only more complete with the other ingredients. The opening sentence of this item has problems, see "Cookies were cooked in (%) combination of (80:10:10), (60:20:20), (40:30:30), (20:40:40) and 100:0 (treated as control sample) of WF:CF, respectively. How to know the order of the cereals of the compound flours?</p> <p>Substitute the word formula of item 2.6 for Equation 2. Standardize the symbol written on the side of the Equation.</p> <p>In item 2.7- Sensory analysis, put the number 3 next to the word Equation and change the word acceptability calibration, as it is not a suitable term for sensory analysis. In this same item, what is the meaning of the number 9 at the end of the following sentence? "Where, A is the average score acquired by prepared biscuits and B is the maximum score obtained after product acceptability (9)." How were the cookies served?</p> <p>Has this research not been approved by the Ethics Committee of the University or research body? All studies in which there is participation of human beings must go through the Ethics Committee so that people who taste it do not have problems related to the study. In this case, a Commission evaluates the project and releases the research or not, if it is released, a protocol number is generated that must be mentioned in the article. In this case, a Free and Informed Consent Form (TCLE) is also generated.</p> <p>Item 2.8- Table 1 is not a Table but a Chart as it has lines.</p> <p>RESULTS AND DISCUSSION:</p> <p>In item 3.1 Approximate analysis of wheat and composite flour, it becomes redundant to speak of wheat flour from wheat grains, check the writing. Table 2 is not a Table, but a Chart, as it is completely closed and has lines.</p>	
--	---	--

Review Form 1.7

	<p>The authors mention that wheat flour has more than 14% moisture and what we see in Table 2 is a content of 13.08%, with no statistical difference between them. The comparison of the results is carried out with an article that studied a very different flour, here it would be worth comparing with an article on wheat flour, oats and barley.</p> <p>Suggestion: https://doi.org/10.1016/j.jcs.2011.10.003; https://doi.org/10.1016/j.lwt.2023.114477</p> <p>Why did the authors conclude that composite flours have a higher purity index when evaluating their carbohydrates??? An explanation is lacking at this point. Explain...</p> <p>In this same item, there is information regarding the benefits of fiber consumption when ingesting composite flour, but there is no literature (article) that supports or affirms such information. Even if the information is already known and true, it must have bibliographical references cited.</p> <p>In item number 3.2, which deals with the physical characteristics of the flours, it is not clear whether these data referring to the different types of densities negatively interfere with the performance of the different flour formulations. The fact that there were no statistical differences between these data should be further explored. And the porosity values imply what??? Porosity is the relationship between the volume occupied by the intergranular air of a given product and the total volume occupied by this granular mass and the water content of the agricultural products is an important factor that determines the variation in the porosity of the grains, since grains with higher levels of Water have a higher surface tension than drier grains (SIQUEIRA et al., 2012). In this item there was no discussion of the results.</p> <p>I believe that the caloric values have been calculated incorrectly.</p> <p>In item 3.3 on Functional properties of composite flours, the Table shows OAC data from 0.92 to 1.10 mL/g, and in the explanation of the text the authors cite "The value of OAC ranged from 0.92 (ml/gm) to 1.15 (ml/gm) as the mixing ratio of oat and barley flours to wheat flour is increased. I believe it is prudent to opt for tables or graphs (figures).</p> <p>In item 3.4 Preparation of biscuits containing multigrains, the authors did not discuss the moisture data of the biscuits, as well as the fat and ash content of the biscuits.</p> <p>In the text "It was observed that the protein content of the mixture composed of wheat for the preparation of biscuits was in the range of 6.49 to 6.98%" , these are not the minimum and maximum protein intervals for the mixtures of flours other than wheat flour.</p> <p>This sentence needs to be rewritten: "The result obtained was considered consistent with Ojinnaka et al. (2009) study."</p> <p>The only point well discussed was the fibers.</p> <p>In item 3.4, incorrect quotations were made of the numbering of the Table, which in the text must be written with the first letter capitalized.</p> <p>In item 3.5 the authors cannot mention that "The degree of thickness also decreases significantly by increasing the levels of supplementation as mentioned in table 6", due to the fact that there are no significant differences between these data. In this same item the phrase "This gradual increment in spread ratio is straight forwardly concerning the spread factor, which was increased as the level of</p>	
--	--	--

Review Form 1.7

	<p>supplementation is elevated. The studied results were found in full consistent with those of Francine et al. (2011) study.” , needs to be revised because this way of saying that the data obtained in the present study agrees with or resembles those found by Francine et al.,(2011) is very strange.</p> <p>For sensory analysis an item should be created (3.7 Sensory Analysis).</p> <p>In Table 7: Why does Firmness have a three-digit value? Is correct? Was it not an attribute measured within the 9-point hedonic scale?</p> <p>Why were the sensory analyzes performed only with the CF4 formulation? What criteria were used for this choice??? This item was very little discussed since it has a great importance in the work.</p> <p>CONCLUSION:</p> <p>It could be more punctual and highlight the benefits that the use of composite flours provides to biscuits made with their presence.</p> <p>REFERENCES:</p> <p>Authors not found in the text:</p> <p>Chauhan, A., Saxena, DC, & Singh, S. Physical, textural and sensorial characteristics of wheat flour and amaranth mixture biscuits. CogentFood and Agriculture, (2016) 2(1), 1125773.</p> <p>Wu, T., Yan, L., Li, Y., Qian. H., Liu, L., Tong, L., Zhou, X., Wang, L., & Zhou, S.. Effect of milling methods on the properties of rice flour and gluten-free rice bread. LWT. Food Science and Technology, (2018); 108, 137-144.</p> <p>Blessing, IO. Chemical, functional and pasty properties of wheat (triticum spp.) - walnut (juglansregia) flour. (2014); Food sciences and nutrition, 5, 1591-1604.</p>	
<p>Minor REVISION comments 1. Is language/English quality of the article suitable for scholarly communications?</p>	<p>Despite some flaws, I believe that yes, that it is adequate.</p>	
<p>Optional/General comments</p>		

PART 2:

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<p>Are there ethical issues in this manuscript?</p>	<p><i>(If yes. Kindly please write down the ethical issues here in details)</i></p>	

Reviewer Details:

<p>Name:</p>	<p>Mari Silvia Rodrigues de Oliveira</p>
<p>Department, University & Country</p>	<p>Federal University of Santa Maria, Brazil</p>