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Journal Name:	**Journal of Applied Life Sciences International**
Manuscript Number:	**Ms_JALSI_34760**
Title of the Manuscript:	**Microbiological and Physicochemical Characteristics of Sheep Milk Heated with Charcoal, Gas and Microwave**
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.
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SDI Review Form 1.6

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)*
Compulsory REVISION comments	**ABSTRACT** Conclusion: It is not a conclusion. This statement is the study base, but it was not concluded by the authors. Consider to change to different sentences, stating that the alternatives studied showed results which corroborate the initial hypothesis. **INTRODUCTION** "…however, in many rural areas traditional methods such as boiling with charcoal are the methods of choice [10, 11] ..." – the study aim does not contemplate an alternative for the rural areas instead of charcoal. If so, please, consider to explain how the technologies studied (gas and microwave) could be alternatives for heat treatment in these areas. **MATERIALS AND METHODS** **2.3 Method of heat treatment** Improve the methods description. For example, how the samples were cooled? Which equipment were used for gas and microwave methods? The sentence "Physicochemical and microbiological characteristics of milk were determined for raw milk and milk heat-treated at 1, 3, 7 and 10-day intervals" can be replaced. It does not concern the heat treatment. **2.7 Statistical analysis** The statistical level was $P<0.05$ or $P<0.01$, as	

	described in Results? **RESULTS AND DISCUSSION** **3.1 Physicochemical and microbiological characteristics of milk heated with different sources of heat** The authors describe all the results (only values) and compare them with other authors, but it is lacking a real discussion based on the results, correlating the heat treatment and the changes observed in the physicochemical parameters. **3.2 Effect of storage period on the quality of milk heated with charcoal, gas and microwave** "The fat content and pH decreased with the advancement of storage period, while protein, TS, lactose, SNF, ash and acidity increased as the storage period progressed from day 1 to day 10.…" and "Fat content decreased during the storage period in milk heated by all sources, while pH decreased in milk heated by gas and charcoal only. Protein and TS contents decreased in milk heated by gas only. Lactose content decreased in milk treated with charcoal, while SNF decreased in milk treated by gas and microwave." – there is repeated information and disagreement between the sentences. Rewrite the results. "These results are not in line with Dumuta-Codre et al. [24] who reported a significant reduction of the colonies number of microflora as the microwave time exposure increased." – It seems that the mentioned authors analyzed different parameters, thus it is not possible to compare the results. They analyzed	

	different time of exposure to microwave, while the present study evaluated the microbial parameters during a period of time after only one microwave treatment. The comparison is inappropriate. **3.3 Identification of bacteria in sheep milk heated by gas, charcoal and microwave** "O'Connor [32] reported that the species of bacteria found in milk as it comes from the udder are limited to few genera such as micrococci which are generally present in the greatest proportion, followed by streptococci and rods." – And what about the authors conclusion? How the present study can corroborate or disagree with this previous observation? **CONCLUSION** "This study is designed to compare the conventional method of heating milk with the most advanced methods that do not harm the environment in order to convince the people in remote areas to use these methods as alternative to the conventional." – It is not a conclusion. Consider to replace it to introduction. "The source of heat significantly affected the fat, protein, total solids contents and total bacteria and lactobacilli counts." – And what that means? What is the real implication of these observations? Consider to improve the conclusion based on your results.	

SDI Review Form 1.6

Minor REVISION comments	I recommend the abstract to be changed to the form of plain text, without sub items. It may make easier to understand the study development as well as the highlights of authors findings. **ABSTRACT** Methodology: - Include the word sheep in the sentence "Raw milk was heated…" - Include the analysis methods. Results: - The sentence "The analyses were carried out at 1, 3, 7 and 10- day intervals" must be moved to methodology part. - Delete "Results showed that". It is not necessary. **INTRODUCTION** "…in relation to the quality and shelf-life of the milk [5], thus heat treatment of milk..." – consider delete the word thus. It is not a cause-effect clause. "Because of concerns that some potentially dangerous microorganisms may survive conventional pasteurization of milk and because the heat needed to sterilize milk affects marketability, the ability to efficiently cold pasteurize milk may become more desirable [8]." – improve the explanation why efficient cold is necessary. **MATERIALS AND METHODS** **2.2 Sampling of milk** During analysis, the samples were first aseptically	

	drawn for microbiological examination, and then samples for physicochemical analysis were drawn. The samples were heattreated on arrival to the laboratory." – rewrite the sentences to improve understanding. **2.4 Determination of physicochemical characteristics of milk** SNF - All the abbreviations should be written in an open-form at first use. **2.6.1 Preparation of sample dilutions** Change to superscript.numbers. **2.6.2 Total viable bacteria count** Hour abbreviation is h, not hr. **RESULTS AND DISCUSSION** **3.1 Physicochemical and microbiological characteristics of milk heated with different sources of heat** "being high (6.97±0.84%) in milk treated with charcoal and low (6.16±0.84%) in milk heated by microwave" – consider change the words high and low for higher than or lower than. Rewrite the sentence. **3.2 Effect of storage period on the quality of milk heated with charcoal, gas and microwave** "The total viable bacteria and lactobacilli counts increased with storage period, reaching the highest at the end." – obvious statement. Consider to link this information with a proper discussion.	

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	TVBC and LAB - All the abbreviations should be written in an open-form at first use. Table 3. pH unit is not %	
Optional/General comments	In general, the topic studied is of great interest. The purpose is quite important. However, the paper suffers from a lack of discussion of results. The simple comparison with other authors findings is not discussion. I suggest to the authors to describe their results basing on the literature and discussing the meaning of these findings, the relevance for the field and the applicability of them. In my opinion, it is necessary to rewrite the section results and discussion including a real discussion on this.	

Reviewer Details:

Name:	***Maria Elisa Caetano-Silva***
Department, University & Country	***Department of Food and Nutrition, Faculty of Food Engineering, University of Campinas, Brazil***