

Review of: "The anti-staphylococcal activity of probiotic- contain gelatin and whey coatings on processed chicken breast"

Sarmad Ghazi Al-Shawi¹

¹ Basrah University

Potential competing interests: No potential competing interests to declare.

Abstract

- *Lactobacillus plantarum*: should be: ***Lactobacillus plantarum***
- *Bifidobacterium bifidum*: should be: ***Bifidobacterium bifidum***
- Data were analyzed for statistical significance by analysis of variance (ANOVA) and the Kruskal-Wallis test: **In abstract section, you should focus on the findings instead of mentioning the materials and methods. I suggest to delete this phrase.**
- compared to the control. ($p < 0.05$): **First of all, there is not dot between (compared to the control) and ($p < 0.05$), and I think you mean ($p < 0.05$) instead of ($p < 0.5$).**
- **I think abstract should be rewritten more clearly and in good language.**

1. Introduction

- and increases the self-life of products: should be: **and increases the shelf-life of products**
- such as acid-lactic bacteria strains: should be: **such as lactic acid bacteria strains**

1. 2. Materials and methods

2.2. Preparing probiotic bacteria

- what was the microbial content of probiotic bacteria that used in the coat preparation? And how did you calculate the final number of bacteria that used in coating? More information will be helpful for other authors to replicate this study.

2.3. Formulation and coat solution preparation

- 5% glycerin (w/w) was added as a plasticizer: **more explanation is required (5% of glycerin) to which component? When you mention w/w, you should explain the other (w) stands for what?**

- **Also, glycerin with 25% concentration, is not clear. You should clarify more!**

- Probiotic strains under study (equal to 10^8 CFU/ml) were separately added to the coat solutions: **How did you get this**

number? The procedure!

- I suggest to rewrite (Formulation and coat solution preparation) section to be more understanding!

2.4. Coating Chicken Breast Samples with the solutions

- Cooked-processed chicken breast samples were immersed for 2 min in each of the solutions. After covering the entire surface of the chicken breast, excess liquid was washed (30 s) from the sample surface: **Don't you think that washing the sample surface will affect on the bacterial counts of the coat? Also, you didn't mention the washing liquid?**

- The coated chicken breast samples were deliberately contaminated with *S. aureus* (105CFU/g):**How did you get this bacterial count? More explanation will be helpful for other authors to replicate this study.**

3. Results and Discussion

- compared to the control. ($p < 0.05$), and the whey coating containing: Should be ($p > 0.05$)

- probiotic did not show significant inhibition ($p > 0.05$): Should be ($p > 0.05$)

- In this regard, the study of the effect of edible coating of whey protein isolate containing Lysozyme on the microbial quality of chicken fillet kept in the refrigerator showed a significant difference between the microbial count of samples coated with whey protein containing Lysozyme and the control group: **Rewrite this paragraph to be more sophisticated and use a good language because it does not make sense!**

- In addition, an increase in antimicrobial activity depending on the concentration of the enzyme was reported in the mentioned study, which confirms the results of the present study and shows that the antimicrobial activity of whey coating can be affected by accompanying factors: **The low concentration of lysozyme in cow's milk whey may still have some antibacterial properties, although its effectiveness might be limited compared to higher concentrations or more concentrated sources of lysozyme.**

Lysozyme has been recognized for its ability to inhibit the growth of certain bacteria by disrupting their cell walls. However, due to the relatively low levels found in cow's milk whey, using it alone as a potent antibacterial agent might not be as effective as using concentrated forms or higher doses of lysozyme.

Nevertheless, it's worth noting that milk and its components, including whey, contain various bioactive compounds with potential health benefits. While the concentration of lysozyme in cow's milk whey might not be high enough for robust antibacterial action on its own, it still contributes to the overall beneficial properties of milk as a functional food.

-Table 1. The count of *S. aureus* (log CFU/ml) in the samples during 45 days of storage at 4°C.**There was not a procedure describing enumeration of *S. aureus* in Materials and Methods section!**

- Also, I wonder why didn't you enumerate probiotic bacteria numbers during 45 days to see whether that the inhibitory effect may be attributed to probiotic bacteria or to the coating materials.

-Figure 1. *S. aureus* population during the cold storage period in coated chicken meat with edible coatings. **Same results in table 1, you should choose one of them, either table 1 or figure 1.**

4. Conclusion

Accordingly, it seems that using probiotics in edible coats may be a hopeful way to cover types of meat products, especially cooked processed meats.: **You cannot attribute the inhibition of *S. aureus* to probiotic bacteria or their metabolites unless you make sure that probiotic bacteria have been grown and produced their metabolites within the tested product and this needs more tests and results.**

I think this paper needs major revision since I put many remarks and noticed poor language. Also the gained results need more tests to verify the mentioned findings.