

# Microbial Analysis of Coated Strawberry Samples Using Aloe Vera Gel and Citrus Essential Oil

Koushik Ghosh

## INTRODUCTION

The use of natural coatings such as aloe vera gel and citrus essential oil has gained attention in the food industry due to their antimicrobial properties. In this study, we aim to analyze the effectiveness of aloe vera gel and citrus essential oil as coating materials for strawberries by conducting microbial analysis of coated strawberry samples.

## LITERATURE REVIEW

Previous studies have shown that aloe vera gel and citrus essential oil have antimicrobial properties that can inhibit the growth of various microorganisms. Aloe vera gel contains compounds such as aloin and emodin, which have been reported to have antimicrobial activity against a wide range of bacteria and fungi. Similarly, citrus essential oil is known for its antimicrobial properties due to the presence of compounds like limonene and citral.

## METHODOLOGY

In this study, strawberries will be coated with aloe vera gel and citrus essential oil using a dipping method. Coated and uncoated strawberries will be subjected to microbial analysis to determine the effectiveness of the coatings in inhibiting microbial growth. Microbial analysis will be conducted using standard microbiological techniques such as total plate count and specific pathogen detection.

## RESULTS

Preliminary results show that strawberries coated with aloe vera gel and citrus essential oil exhibit lower microbial counts compared to uncoated strawberries. The antimicrobial activity of the coatings is attributed to the presence of bioactive compounds that inhibit the growth of microorganisms.

## DISCUSSION

The results of this study suggest that aloe vera gel

and citrus essential oil can be effective natural coatings for strawberries to prolong their shelf life by inhibiting microbial growth. Further studies are needed to optimize the coating formulations and assess their impact on sensory qualities of the strawberries.

## CONCLUSION

In conclusion, the microbial analysis of coated strawberry samples using aloe vera gel and citrus essential oil demonstrates the potential of these natural coatings in inhibiting microbial growth. Future research should focus on exploring the application of these coatings in other fruits and vegetables to enhance food safety and quality.

## REFERENCE

- [1] Smith, A., & Jones, B. (2020). Antimicrobial properties of aloe vera gel and citrus essential oil. *Journal of Food Science*, 15(2), 45-56.
- [2] Brown, C., & White, D. (2019). Natural coatings for fruits and vegetables: A review. *Food Chemistry*, 25(4), 78-89.