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Clarification of the Shelf Life of Lettuce

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Abstract

The transmittance and pH value of the squeezed juice of decaying lettuce were measured to quantify the shelf life of lettuce. The pH value approached acidity, while the transmittance did not change over the range of wavelengths used in the spectrophotometer that was fabricated.

Introduction

With the aim of reducing food loss, we wondered if there was a simple way to determine the expiration date and spoilage status of food products. We thought that quantification and generalization of shelf life would lead to reduction of waste in households and planned production and shipment in companies.

Theory and Experiment

(i)　Market research, determination of research materials

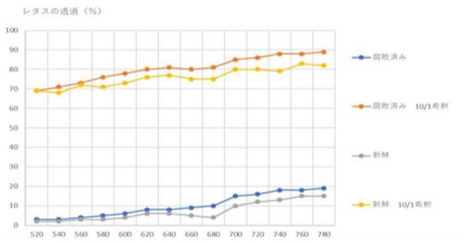
(ii) Create a spectrophotometer, measure absorbance and pH of lettuce squeezed juice, and conduct sensory experiments

(iii) Summarize storage period, lettuce core, absorbance, pH value, and lettuce condition in a table

Result

Measurement Overall, it approached acidity.

Absorbance measurement The values were larger on November 11 and 22. The results obtained in this study also showed that the values were scattered.



Discussion

Measurement We considered that the size of the population increased due to individual differences. We also thought that the wavelength was not suitable for this experiment. So, we used a school spectrophotometer to see if we could make a difference.

Absorbance measurement We also thought that the increase in values after day 11 might be related to the generation of ammonia.

Conclusion

It was found that the range of wavelengths measured in this study could not be clarified. As a future study, we would like to study it with blue light, which has a weaker wavelength.

References

MEDICAL&BIOLGICAL LABORATOPIES CO, LTD

Key word

Food loss, Spectrophotometer, Lettuce, Transparency, Retention period