

Kombucha and its nutrients: a qualitative analysis of vitamin C comparing green tea and a plant-based drink fermentation

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INTRODUCTION & AIM

Kombucha, a plant-based beverage originating from China over 2000 years ago, is primarily known for its health benefits attributed to catechins (polyphenols) present in *Camellia sinensis* leaves.

SCOBY

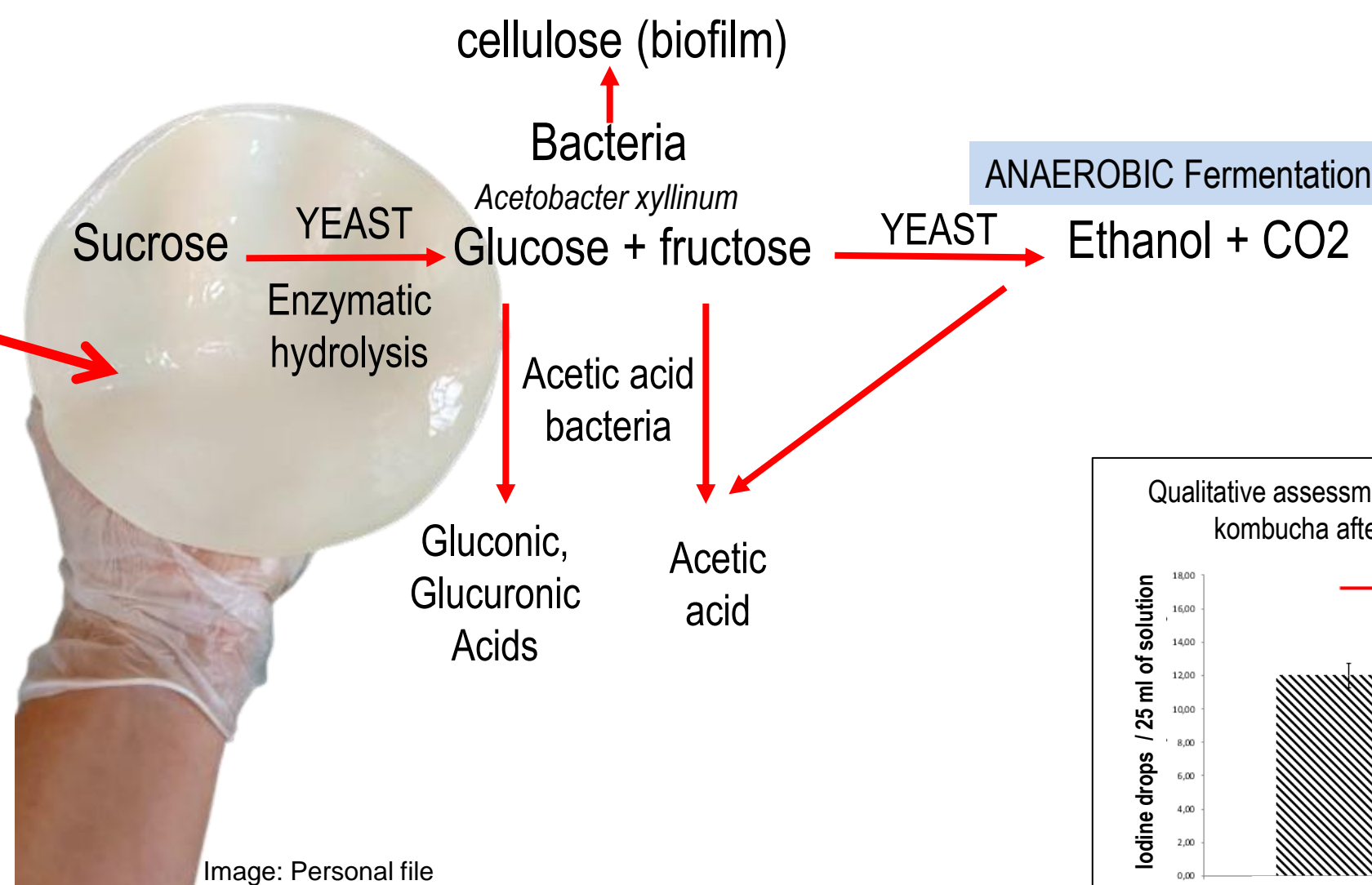
Symbiotic Colony of Bacteria and Yeasts

The fermentation of green tea by a colony of bacteria and yeast cultured on a cellulose film called SCOBY (*Symbiotic Culture of Bacteria and Yeasts*) produces kombucha, including numerous biochemical changes and generating bioactive compounds that are crucial for health.

This study aimed to compare the antioxidant capacity and physicochemical parameters of green tea with kombucha to determine changes in vitamin C levels before and after fermentation.

METHOD

Under AEROBIC conditions and approximately 25°C...



Experimental data were collected manually, reflecting common practices among kombucha producers worldwide. The following variables were evaluated: pH, density, room temperature during fermentation, alcohol content (%), °BRIX (soluble solids), and vitamin C presence.

RESULTS & DISCUSSION

A statistical analysis using PAST software indicated significant differences ($p < 0.01$) in density and °BRIX decrease by the 6th day of fermentation (indicating active fermentation) – Figure 1 and 2.

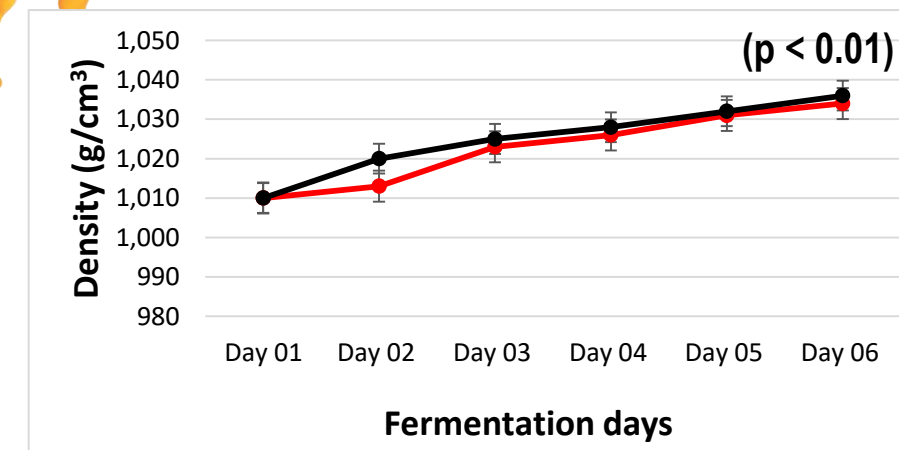


Figure 1

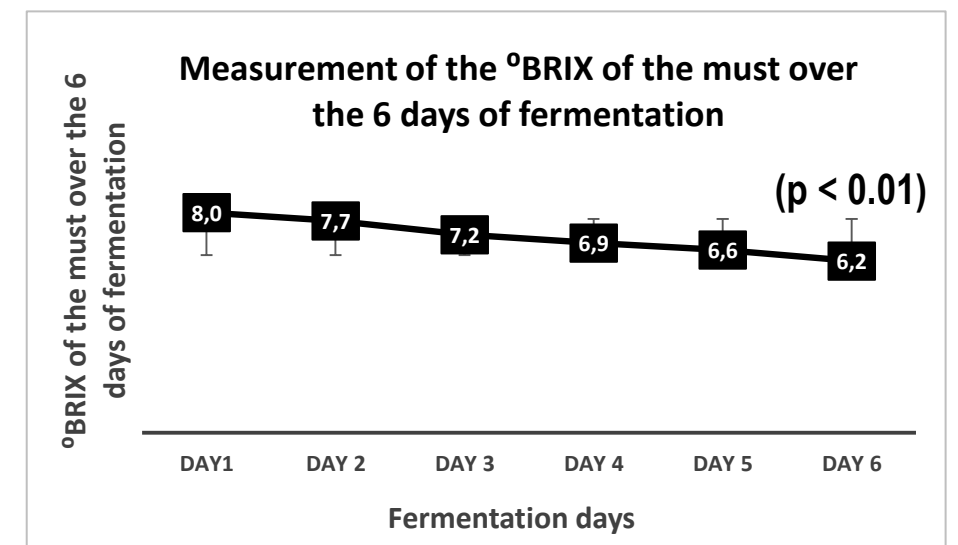


Figure 2

The fermented drink exhibited a notable 31% decrease in pH (Figure 3) and a substantial 65% increase in vitamin C levels (which increased by 17% ($p < 0.01$) after the second fermentation cycle) compared to green tea (Figures 4 and 5).



Image: Google images

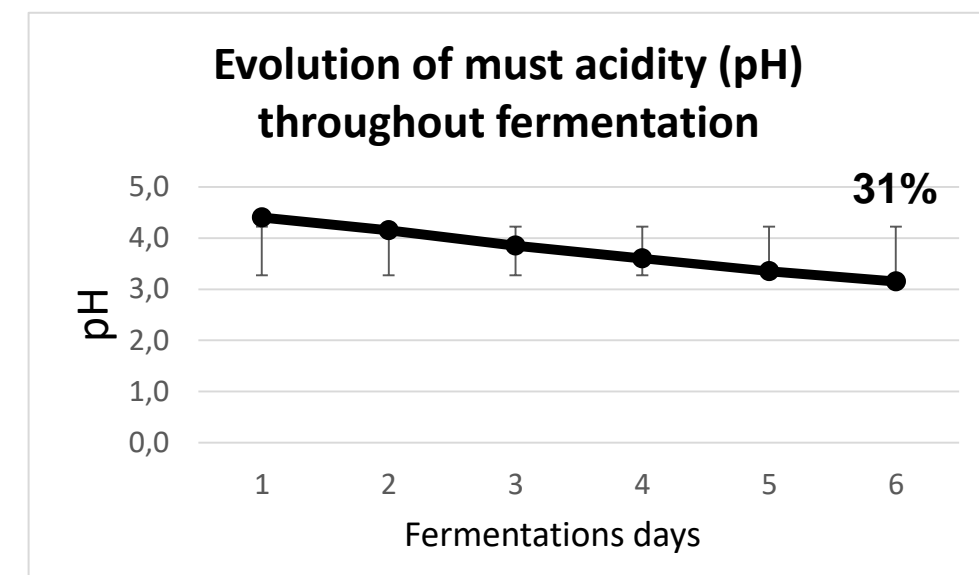


Figure 3

Glucuronic acid (one of the most important acids produced in kombucha fermentation) is also a precursor in the biosynthesis of vitamin C (PALUDO, 2017)

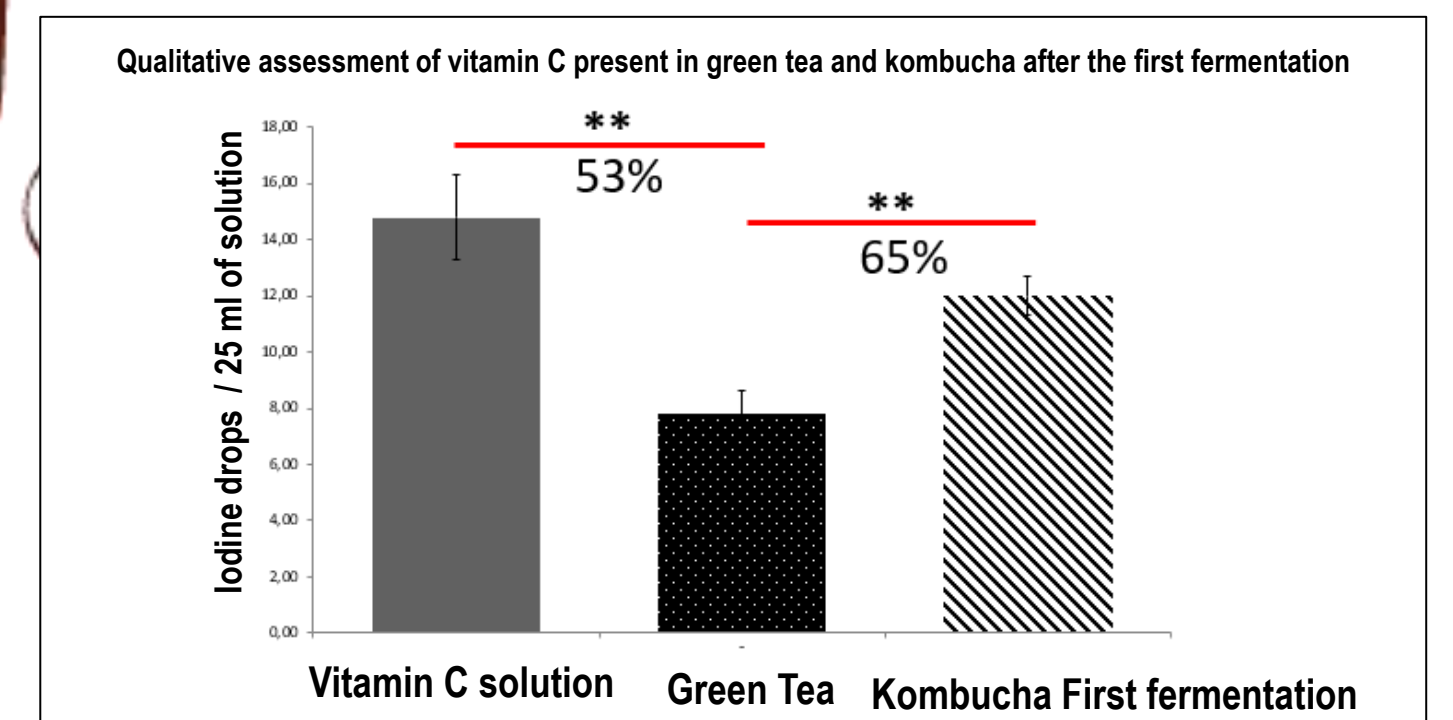


Figure 4

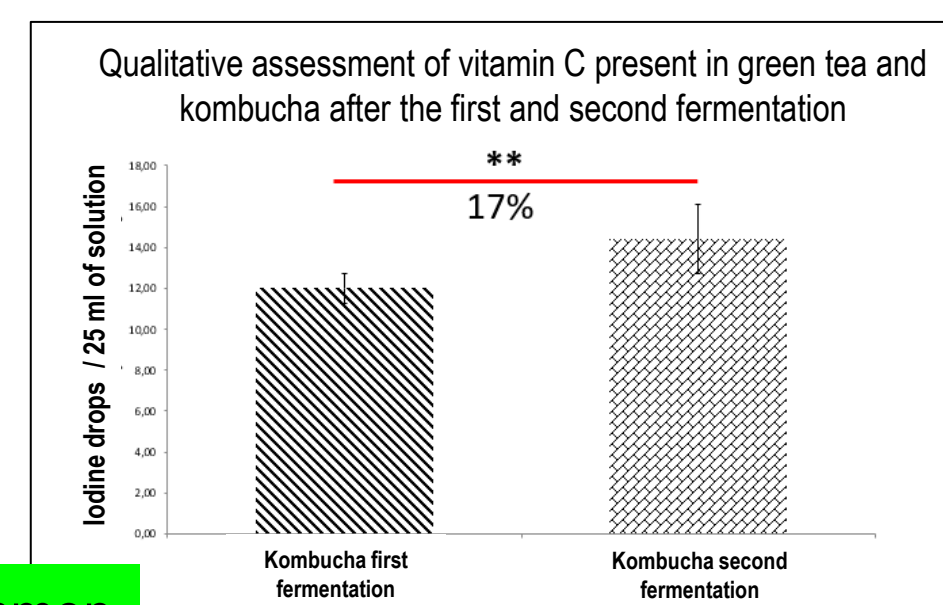


Figure 5

CONCLUSION

Thus, the study results indicate that fermentation leads to the formation of important organic acids and significantly increases vitamin C levels in unflavored kombucha obtained from the first and second fermentation cycle.

FUTURE WORK / REFERENCES

Further studies on this topic will be carried out by the research group

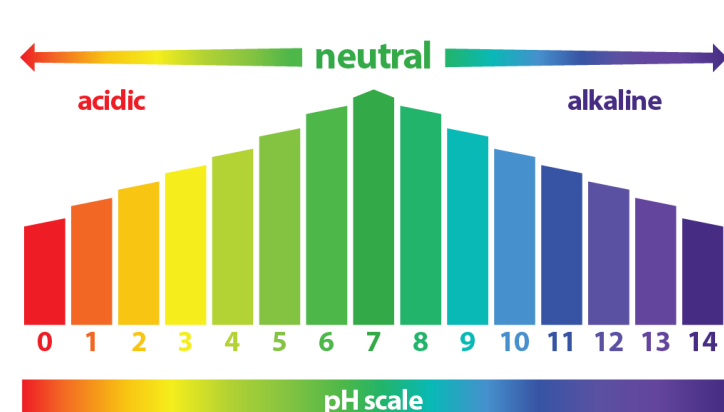
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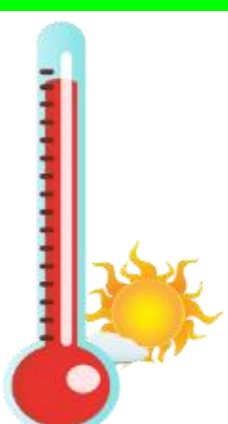
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pH



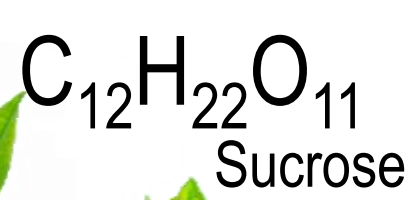
Density



T°C



°BRIX



*Images: Google images