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# Polyphenols in kombucha: impact of infusion time on extraction and investigation of their behavior during “fermentation”

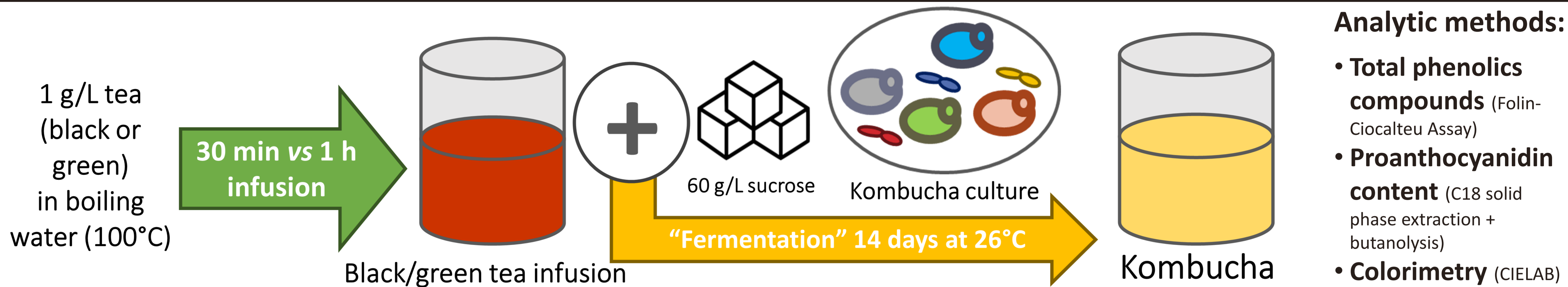
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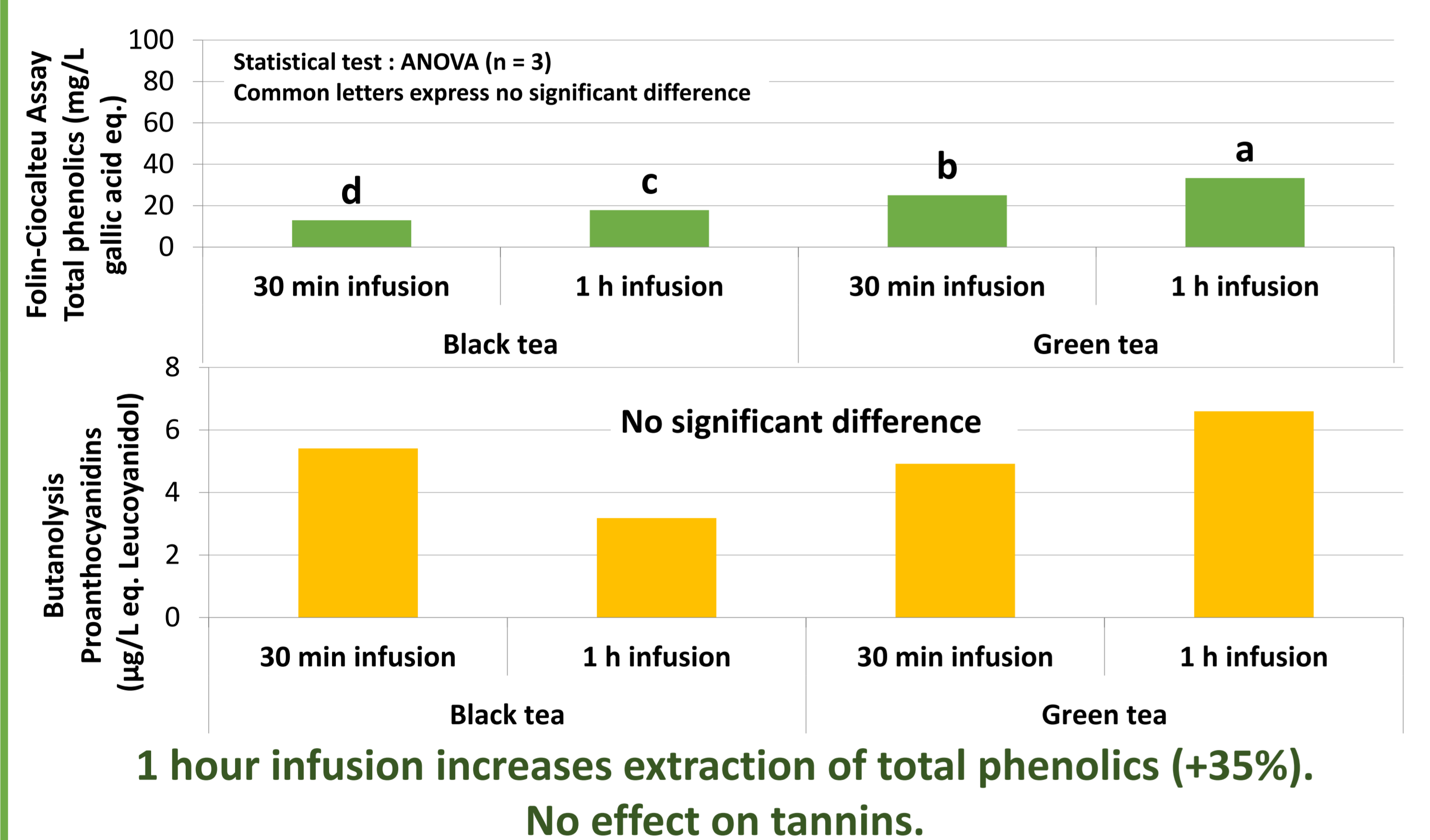
Kombucha is a non-alcoholic beverage made of sugared tea that is transformed by a symbiotic consortium of yeasts and bacteria. Polyphenols are expected to be responsible of several health benefits attributed to kombucha consumption, among other metabolites. Evidence point at an enhancement of tea polyphenol bioactivity during kombucha elaboration. This study investigated the impact of tea infusion time and of kombucha “fermentation”, on the tea polyphenols and the color. Most of the present experiments have been carried out during a 3<sup>rd</sup> year Bachelor training by Shane Fennell from Carlow Institute of Technology (Ireland).

## Material and methods

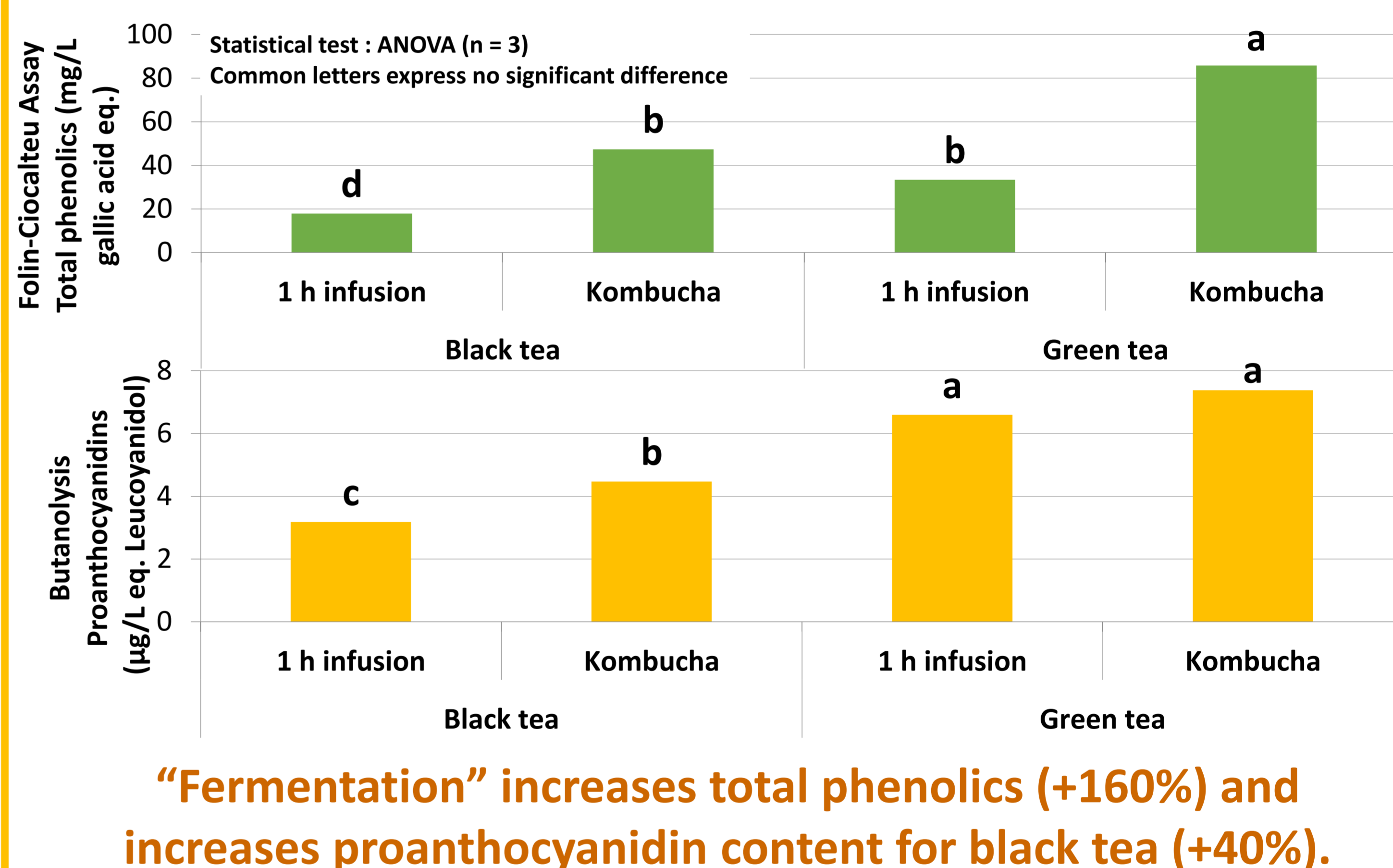


## Results

### Impact of infusion time ?

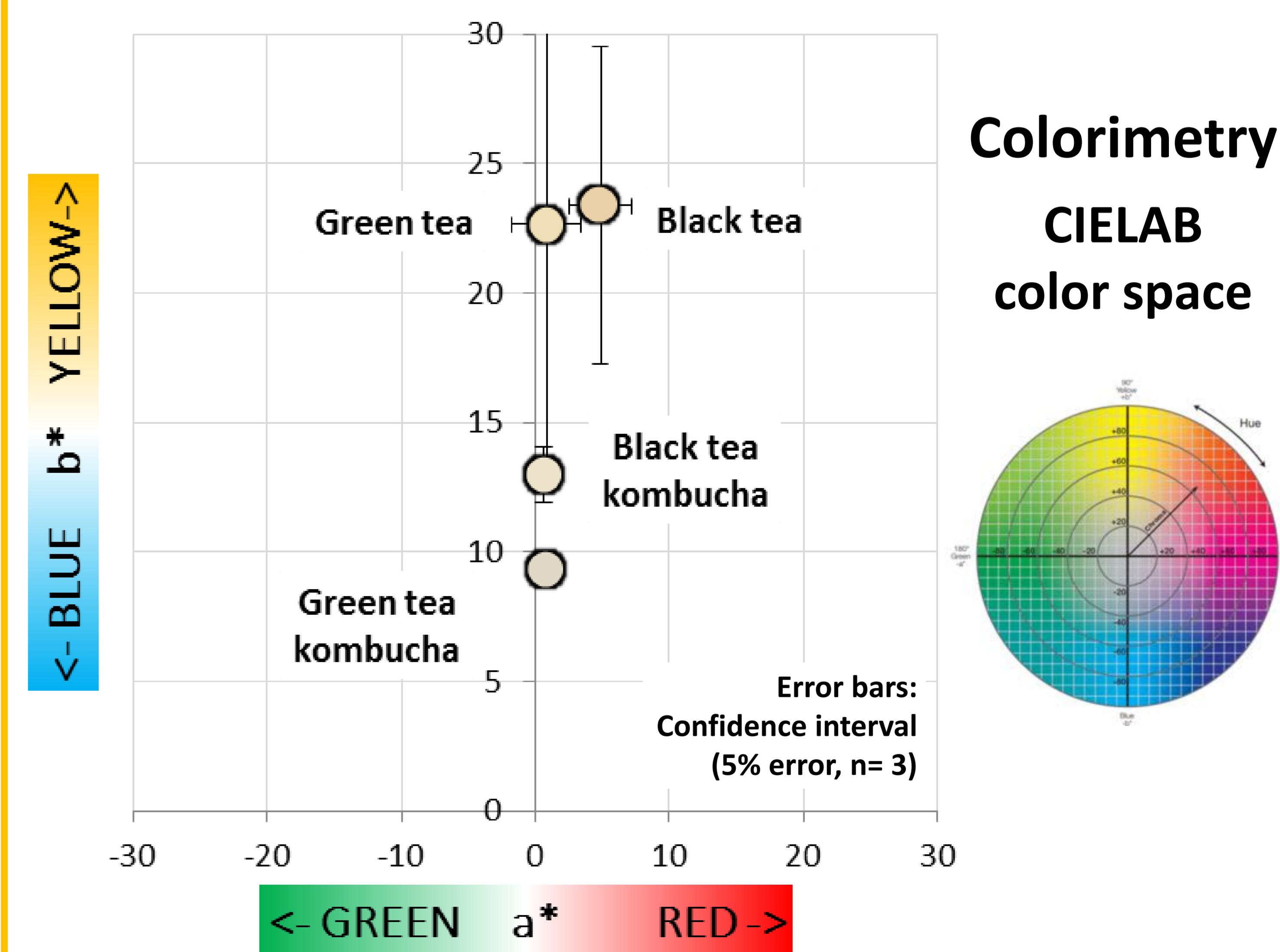
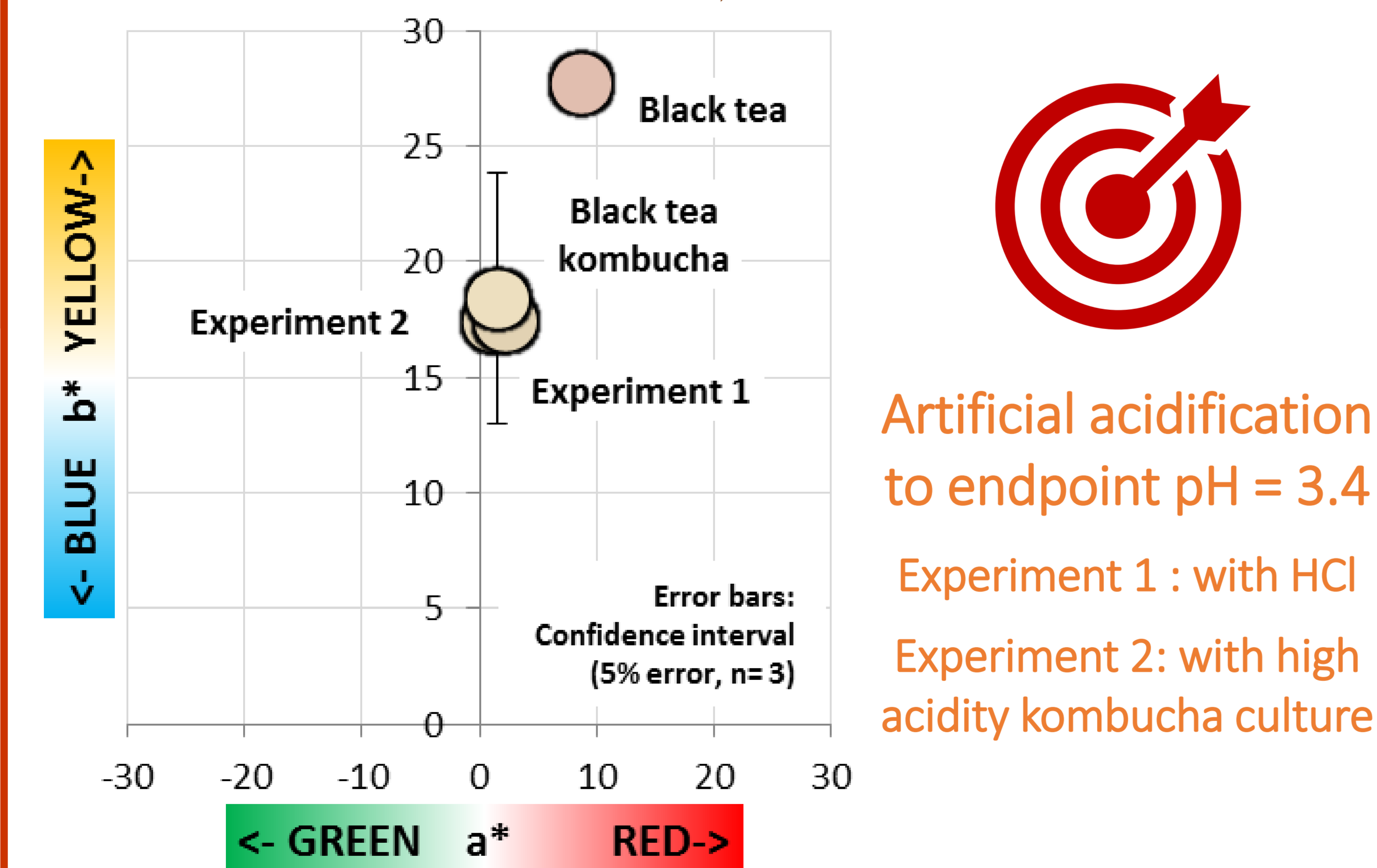


### Impact of “fermentation” ?



### What causes color loss during “fermentation” ?

Start pH: Black tea (pH = 6.7) → End pH: Kombucha (pH = 3.4)



## Conclusions

Kombucha fermentation impacts the profile of black and green tea polyphenols more than infusion time between 30 minutes and 1 hour. Results suggest a significant release of phenolic compounds during “fermentation” possibly caused by the hydrolysis of molecular bounds (such as gallate ester bounds). Kombucha “fermentation” may improve the bioavailability and bioactivity of tea polyphenols.