Effects of drying process on the quality of dehydrated pineapple

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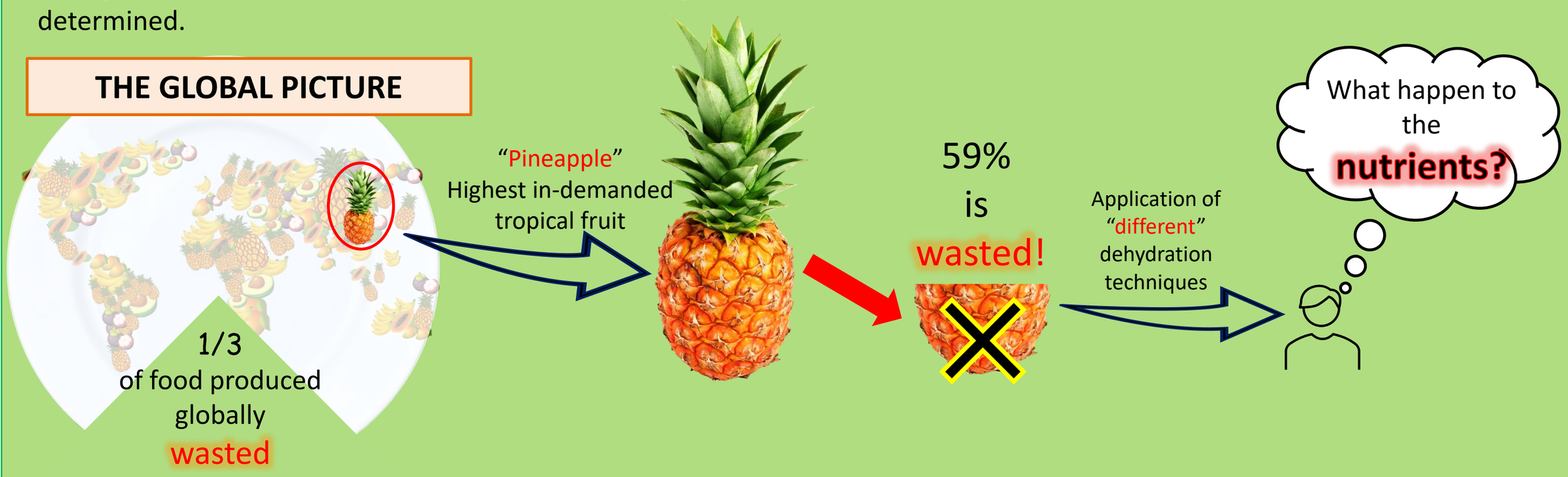
Introduction

Pineapple is the highest in demanded tropical fruit in the world(FAO, 2020).However 59% of pineapple is wasted during its peak season, It contributes to the 1/3 of the global food wastage. This food wastage can be minimized by applying Food preservation techniques like " Dehydration". In this research 03 main drying techniques such as Convective drying, Freeze drying and Intermittent Microwave Convective drying was applied on pineapple and its effect on macronutrients were determined.



Methodology

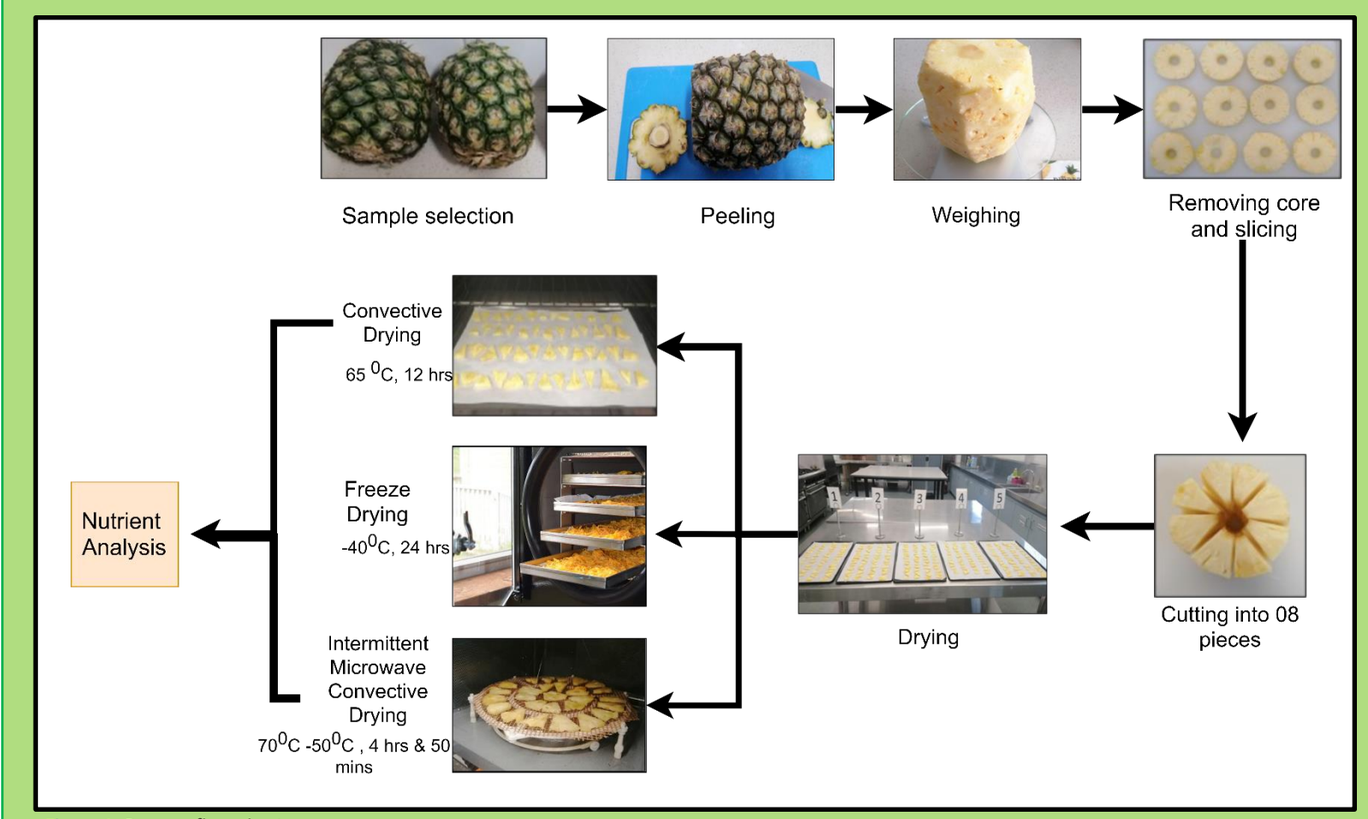


Figure 1: Process flow chart

Results and Discussion

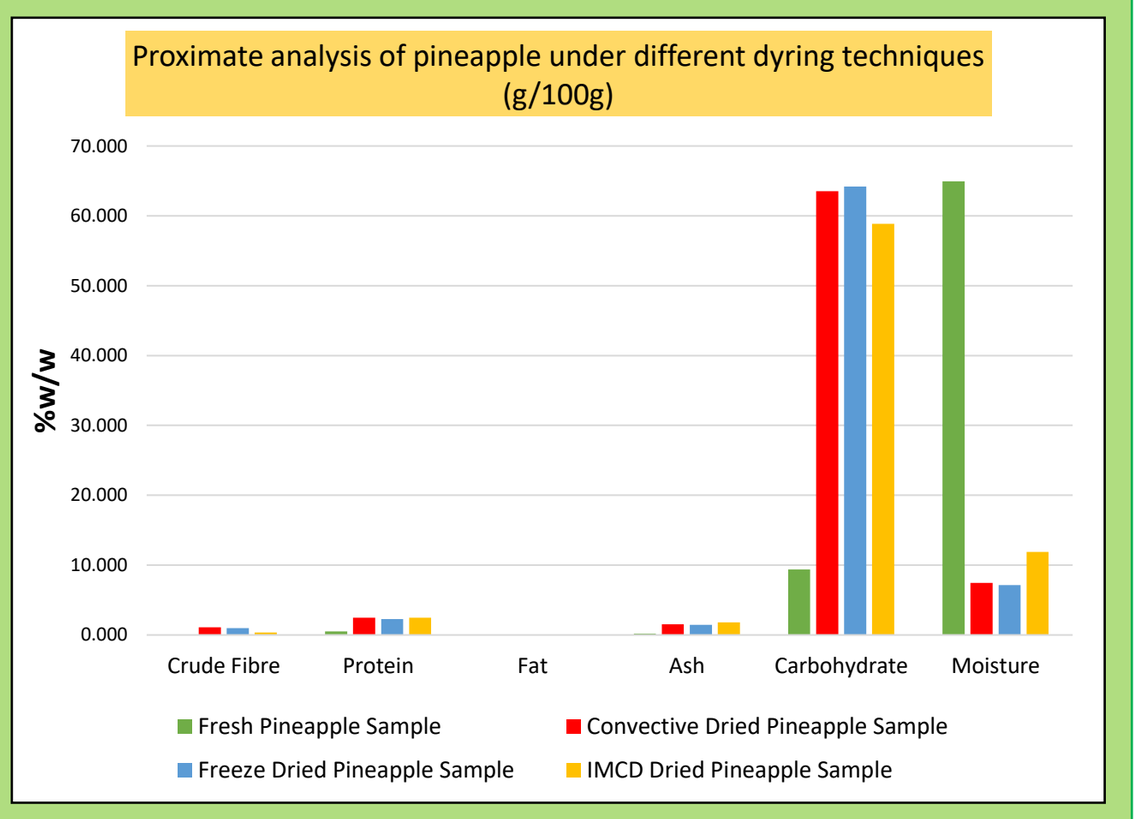


Figure 2:Proximate analysis of pineapple under different drying techniques (g/100g)

Conclusion

- Both Intermittent convective dried and Convective dried pineapple preserved similar quantities of nutrients per unit mass, whereas freeze dried pineapple had been found to preserve slightly higher in the nutrient content comparatively.
- However, in all three drying techniques the nutrient content per unit mass were found to be higher than that of the fresh product.

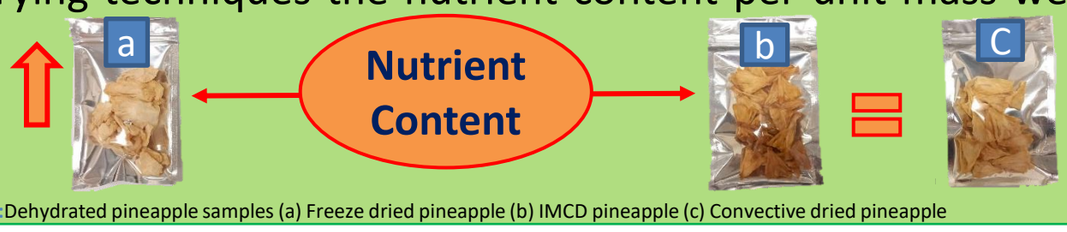


Figure 3:Dehydrated pineapple samples (a) Freeze dried pineapple (b) IMCD pineapple (c) Convective dried pineapple

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References

Rani, P., & Tripathy, P. P. (2019). Effect of ultrasound and chemical pre-treatment on drying characteristics and quality attributes of hot air dried pineapple slices. Journal of Food Science and Technology, 56(11), 4911-4924. https://doi.org/10.1007/s13197-019-03961-w

Abano, E. E. (2010). Assessments of drying characteristics and physio-organoleptic properties of dried pineapple slices under different pre-treatments. *Asian Journal of Agricultural Research, 4*(3), 155-161. https://doi.org/10.3923/ajar.2010.155.161

FAO. (2020). *Major tropical fruits - Preliminary market results 2019*. Rome.