

Fatty Acid Profile and Sensory Characteristics of Canola (*Brassica napus*) Oil-Based Mayonnaise Sweetened with Date (*Phoenix dactylifera*) Paste

*¹Akajiaku, L.O., ¹Nwosu, J.N., ²Nwakanma, J.C., ¹Odimegwu, E.N., ¹Alagbaoso, S.O. and ¹Ndukwe, S.E.

¹Department of Food Science and Technology, Federal University of Technology, P.M.B. 1526, Owerri, Imo State, Nigeria

²Department of Public Health, Federal University of Technology, P.M.B. 1526, Owerri, Imo State, Nigeria

*Corresponding author's email: lindaoakajiaku@gmail.com

INTRODUCTION & AIM



Plate 1: Canola oil



Plate 2: Palm dates

Mayonnaise is a popular oil-in-water emulsion traditionally made with soybean oil and refined sugars. However, health concerns linked to excessive omega-6 fatty acids and added sugars have prompted interest in healthier alternatives. Canola oil, with its balanced omega-3 to omega-6 ratio and low saturated fat content, offers cardiovascular benefits, while date paste provides natural sweetness along with fibre, minerals, and antioxidants. Incorporating these ingredients supports the development of a more nutritious, functional mayonnaise with improved health appeal. This study evaluated the fatty acid profile and sensory characteristics of canola oil-based mayonnaise sweetened with date paste as a natural alternative to refined sugar.

METHOD

Table 1: Formulation Ratios of Mayonnaise Samples

Sample	Soybean oil (ml)	Canola oil (ml)	Date paste (g)	Salt (g)	Sugar (g)	Lemon juice (ml)	Eggs (g)
CM0 (Control: Soybean oil + sucrose mayonnaise)	400	-	-	1.5	1.5	15	159
CM1 (5% Date paste mayonnaise, Canola oil)	-	400	20	1.5	-	15	159
CM2 (10% Date paste mayonnaise, Canola oil)	-	400	40	1.5	-	15	159
CM3 (15% Date paste mayonnaise, Canola oil)	-	400	60	1.5	-	15	159
CM4 (20% Date paste mayonnaise, Canola oil)	-	400	80	1.5	-	15	159
CM5 (25% Date paste)	-	400	100	1.5	-	15	159

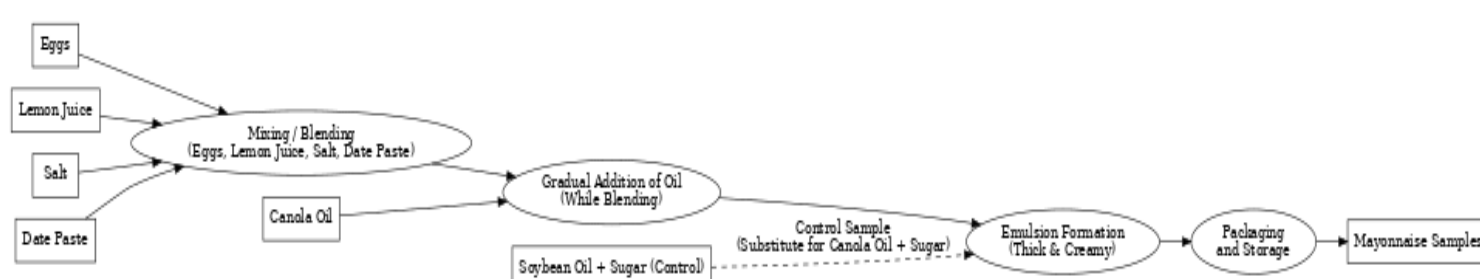


Fig 1: Production of Mayonnaise

RESULTS & DISCUSSION

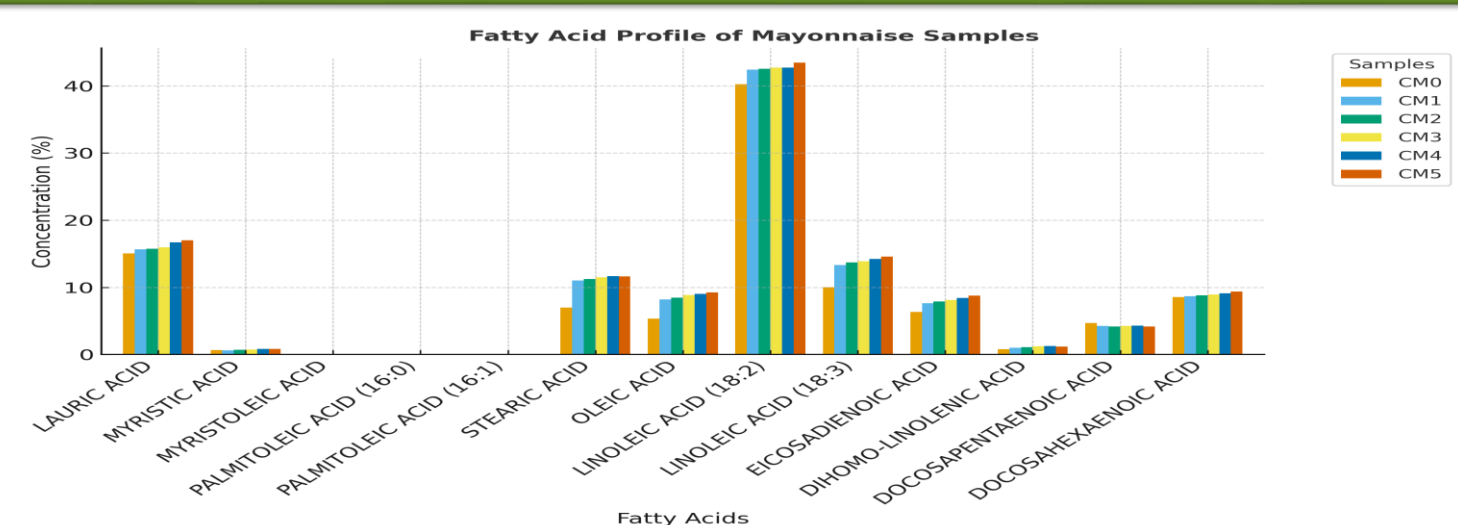


Fig. 2: Fatty Acid Profile of the Mayonnaise Samples

Significance of Fatty Acid Profile of the Mayonnaise Samples:

The fatty acid profile of the mayonnaise samples revealed a dominance of health-promoting unsaturated fatty acids - particularly linoleic, oleic, and linolenic acids - indicating improved nutritional quality and potential oxidative stability with increasing formulation enrichment.

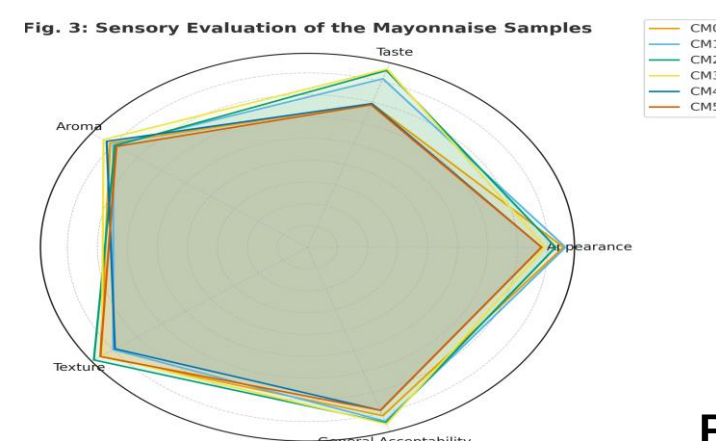


Plate 3: Mayonnaise product samples

CONCLUSION

The study demonstrated that the incorporation of date paste in mayonnaise formulations influenced both the fatty acid composition and sensory attributes of the samples. The enhanced presence of unsaturated fatty acids, particularly linoleic, oleic, and linolenic acids, reflects improved nutritional quality and potential oxidative stability. Sensory results further revealed that enriched samples (CM1–CM3) were generally well accepted, with desirable appearance, texture, and overall acceptability comparable to the control. This indicates that partial substitution with date paste can produce a healthier and consumer-appealing mayonnaise without compromising sensory quality.

FUTURE WORK / REFERENCES

Future studies should carry out a shelf-life study to provide valuable data on the long-term stability and quality of date paste sweetened mayonnaise.

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