



Neural Element of Willingness to taste novel sustainable food

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Introduction

Entomophagy can address climate change and promote sustainability, but westerners face mental barriers to eating insect (Wendin & Nyberg, 2021). The reasons behind the gap between people willing to taste novel food and reluctant ones is still unknown (Siddiqui et al., 2024). However, it's known that eating familiar foods containing insects may promote early entomophagy. This project combines sensory and neuropsychological methods to identify behavioral and neurological factors behind consumers' reluctance to eat insects-based food.

Objective

The project seeks to identify neural markers followed by demographic and behavioral factors essential for understanding the barriers linked to entomophagy. The findings will enhance the marketing strategies for entomophagy in Western populations, promoting more sustainable consumption habits. By employing various mathematical and statistical methods, the study will analyse behavioural, sensory, and neurophysiological data to assess markers of willingness and develop a theoretical model for potential insect-based food consumers (**Table 1**).

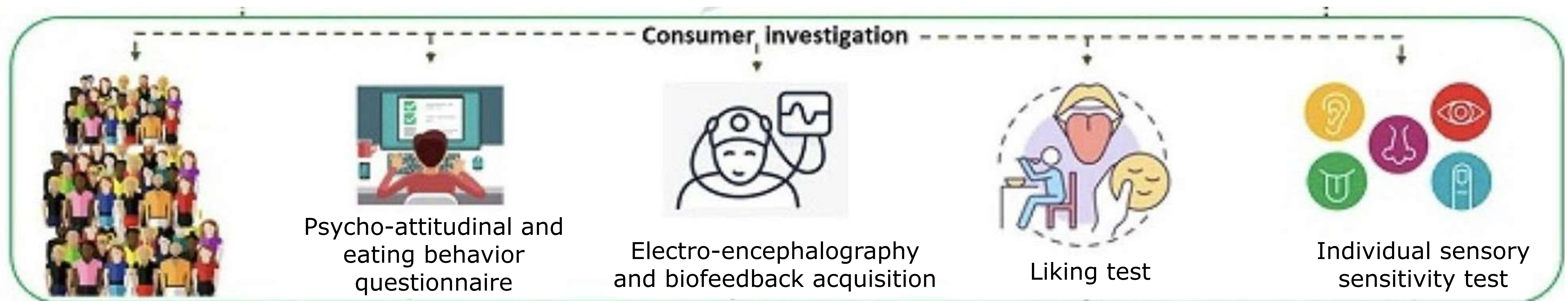


Table 1 Gantt diagram for this PhD thesis project.

Activity	Months	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
A1)	1) Ethics committee	█																							
A2)	Formula optimization of both cricket-based and traditional food	█	█	█	█	█	█	█	█																
	2.1) Production and characterization of cricket-based and traditional food																								
A3)	Behavioural questionnaires and consumer selection																								
	1) Implementation																								
	2) Online administration																								
	3) Consumer selection																								
A4)	Consumer Investigation																								
	1) EEG task implementation																								
	2) EEG and biofeedback acquisition																								
	3) Optimised food evaluation and individual sensory sensitivity																								
A5)	Data analyses and combinations of all the results																								
	1) Willingness to taste insect-based food																								
	2) EEG and biofeedback																								
	3) Sensory																								
	4) Theoretical model																								
A6)	Manuscript on all main results of the project																								

References

Siddiqui, S. A., Zhao, T., Fitriani, A., Rahmadhia, S. N., Alirezalu, K., & Fernando, I. (2024). Acheta domesticus (house cricket) as human foods-An approval of the European Commission-A systematic review. *Food Frontiers*, 5(2), 435-473.

Wendin, K. M., & Nyberg, M. E. (2021). Factors influencing consumer perception and acceptability of insect-based foods. *Current opinion in food science*, 40, 67-71.