

Abstract

Edible insects, specifically *Acheta domesticus* (house cricket), have gained increasing popularity as a sustainable, protein-rich ingredient for food products. However, their incorporation into food products may change the sensory characteristics and reduce consumer acceptability, especially in dairy-based products. The aim of this study is to evaluate the effect of different concentrations of cricket (9%, 12%, 15%) on the sensory characteristics and consumer acceptance of chocolate ice cream. Four formulations (Control, 9%, 12%, 15%) were prepared and evaluated using a mixed-method sensory method consisting of Focus Group Discussion (FGD), Check-All-That-Apply (CATA), 9-point hedonic testing, and preference ranking. FGD involving 17 semi-trained panelists generated 23 consumer-derived sensory attributes, which were used in the CATA questionnaire. Consumer acceptance was assessed by 121 untrained panelists. The findings demonstrated that increasing the concentration of cricket powder progressively affected the sensory profile of the ice cream. The 9% formulation retained desirable chocolate-related characteristics, whereas the 12% and 15% formulations were associated with undesirable attributes such as bitterness, off-odor, earthy aftertaste, and grainy texture. Hedonic evaluation showed that aroma and texture were significantly affected by cricket powder incorporation, while appearance, taste, and aftertaste remained statistically comparable among formulations. Preference ranking further revealed a gradual decline in consumer preference with increasing cricket powder concentration. Overall, chocolate ice cream was shown to be a suitable carrier for cricket powder, with 9% incorporation representing the highest level that maintained acceptable sensory quality and consumer acceptance.

Keywords: *Acheta domesticus*, Check-All-That-Apply (CATA), Focus Group Discussion, Chocolate Ice Cream, Consumer Acceptance.