

THE IMPACT OF *Tenebrio molitor* FLOUR INCORPORATION LEVEL ON THE SENSORY PERCEPTION OF CEREAL BARS

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INTRODUCTION

In a global context of environmental challenges, edible insects have emerged in Western cultures as a promising alternative to animal protein, contributing to sustainability. This study aimed to assess the effect of incorporating *Tenebrio molitor* flour (TM) in cereal bars at different concentrations (0%, 10% and 15%) and to evaluate their sensory characteristics.

METHODOLOGY

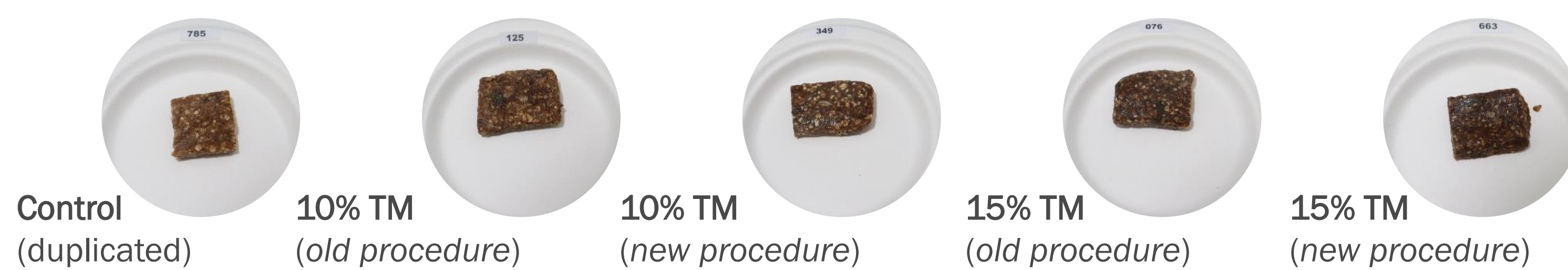


Figure 1: Samples used in the test. Control sample was presented in duplicate.

- 1st LIKING**

 - Consumers indicated their liking by applying a **9-point hedonic scale** ('1: I strongly dislike' to '9: I strongly like').

2nd RATE-ALL-THAT-APPLY

 - Assess the sensory attributes split by sensory dimension (34 terms) using a **Rate-All-That-Apply (RATA)** ballot (each attribute was evaluated in terms of applicability using a 5-point scale).
 - The terms were pre-defined based on the team experience, a literature review, and a pilot test.
 - Samples were presented monadically, following a balanced presentation order.
- 100 participants willing to taste insect-based products

Average age: 42 (±9.5) years old

CONCLUSIONS

- Significant differences were identified between the overall liking of the samples;
- New processing method proved to be the most discriminating between samples, with sample with 10% TM being preferred by participants and, in contrast, the sample with 15% TM proving to be the least appreciated by the group of participants;
- Consumers identified **significant differences between samples** for attributes related to appearance, smell, texture and taste.

RESULTS

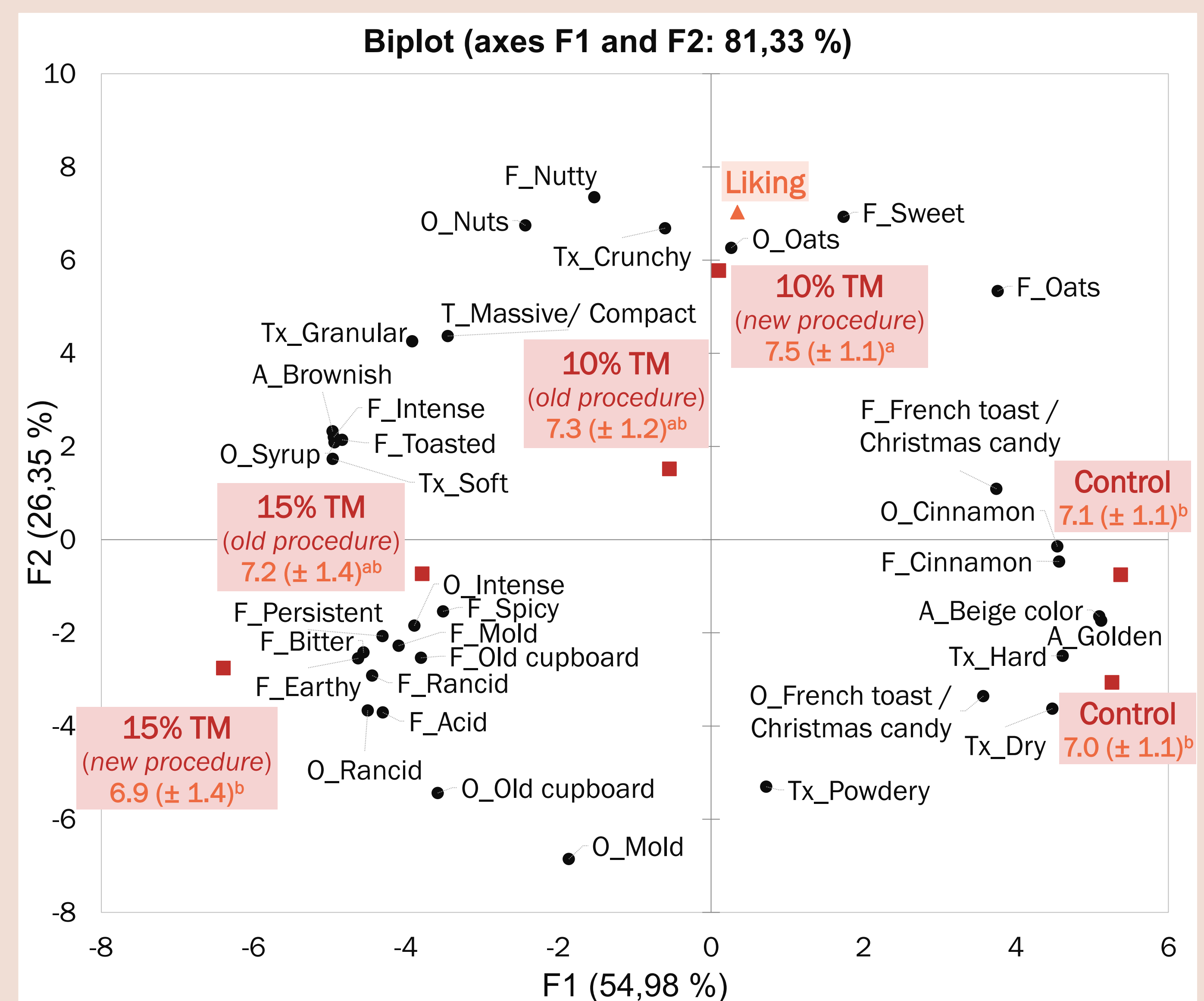


Figure 2: Sensory profile of the samples and mean liking value with standard deviation between brackets.



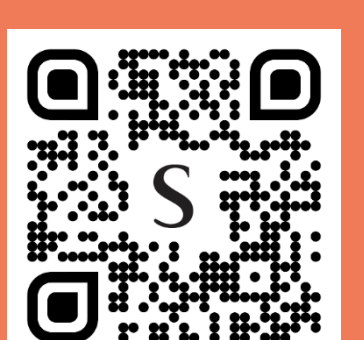
Figure 3: Sensory attributes that revealed significant differences between products (0 - 'Not applicable'; 1 - 'Slightly applicable' to 5 - 'Extremely applicable').

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