

RANDOMIZED CROSSOVER NUTRITIONAL TRIAL OF YOGURTS CONTAINING DIETARY-FIBER AND COFFEE CASCARA EXTRACT IN HEALTHY ADULTS

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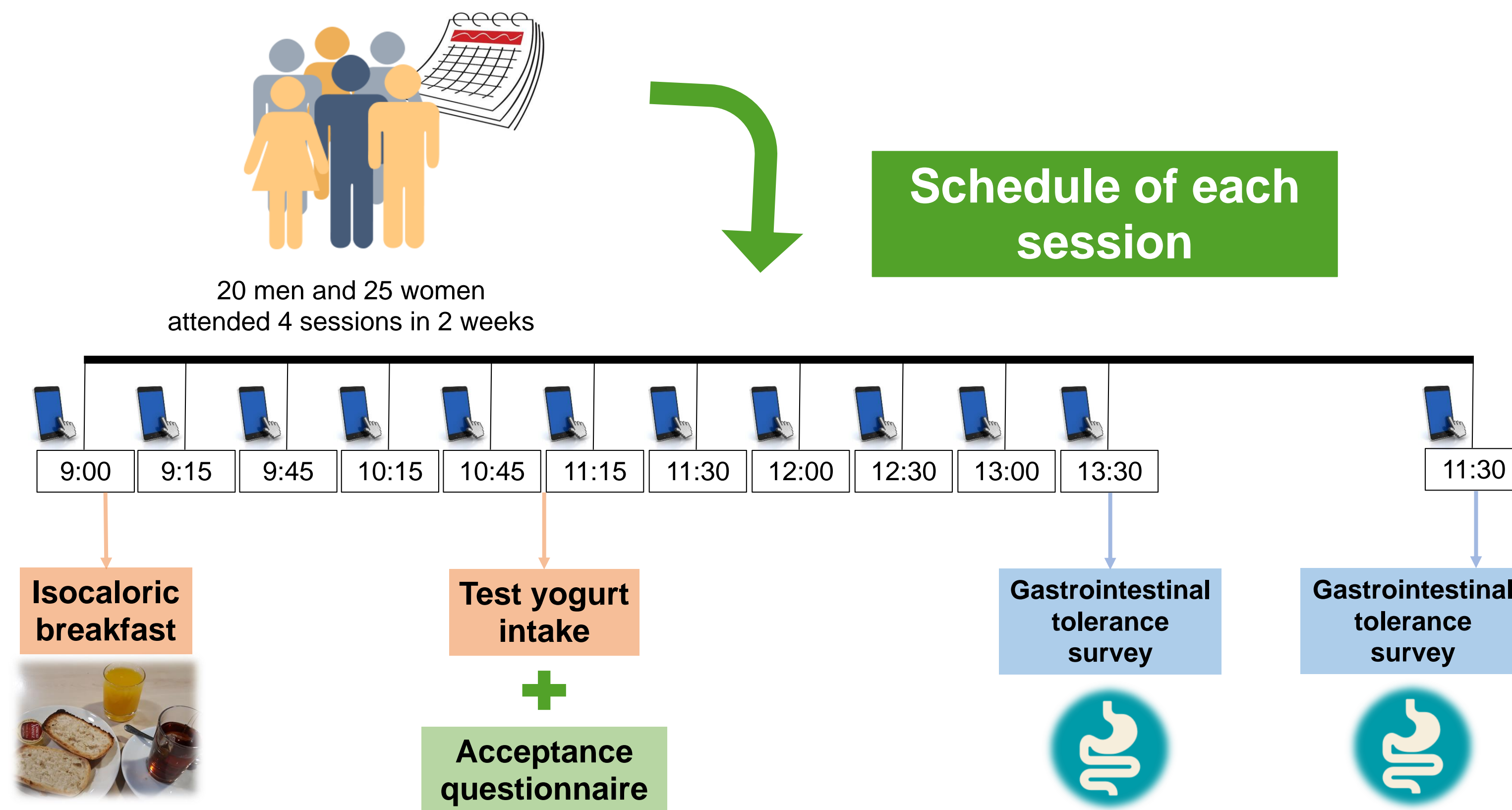
ABSTRACT

Coffee cascara is a coffee processing byproduct with potential health promoting properties due to the presence of bioactive compounds. Cascara extract and commercial soluble dietary fiber were used as food ingredients to develop a functional yogurt for achieving a human sustainable health. **The AIM of this study was to evaluate the gastrointestinal tolerance, satiety and sensory acceptance of yogurts containing coffee cascara aqueous extract and three doses of soluble dietary fiber: 0,3,7,13% (4 meals).** A blind randomized crossover design (Clinical Trials Registration No: NCT03539146) was performed with forty-five healthy participants (20 men and 25 women) who attended four sessions over a period of 2 weeks. Participants consumed test meals 135 min after an isocaloric breakfast with a minimum 2-day (48h washout between test days). Health effects were evaluated by measuring satiety throughout the morning (9:00h to 13:30h, every 30 min) and gastrointestinal tolerance, 2h and 24h after yogurt consumption. Surveys were carried out digitally in each participants cellphone. The yogurt sensory quality was tested in each session using an acceptance questionnaire. Data were analyzed using multivariate statistical analyses. Yogurts containing 7% and 13% dietary fiber significantly increased ($p < 0.05$) collateral gastrointestinal symptoms (mainly bloating and flatulence), whereas no differences were found in satiety ratings between the yogurts. On the contrary, the sensory acceptability improved with increasing doses of dietary fiber. The gastrointestinal symptoms were observed) and sensory point of view. This is a product that could be labelled as “source of fiber” in its packaging, although cascara yogurt containing 3% dietary fiber was identified as the optimal product both from a nutritional no significant collateral it would not enhance the costumers satiety compared to a yogurt without dietary fiber.

STUDY DESIGN



Nutritional Intervention Study
 Clinical Trials Registration No: NCT03539146



RESULTS

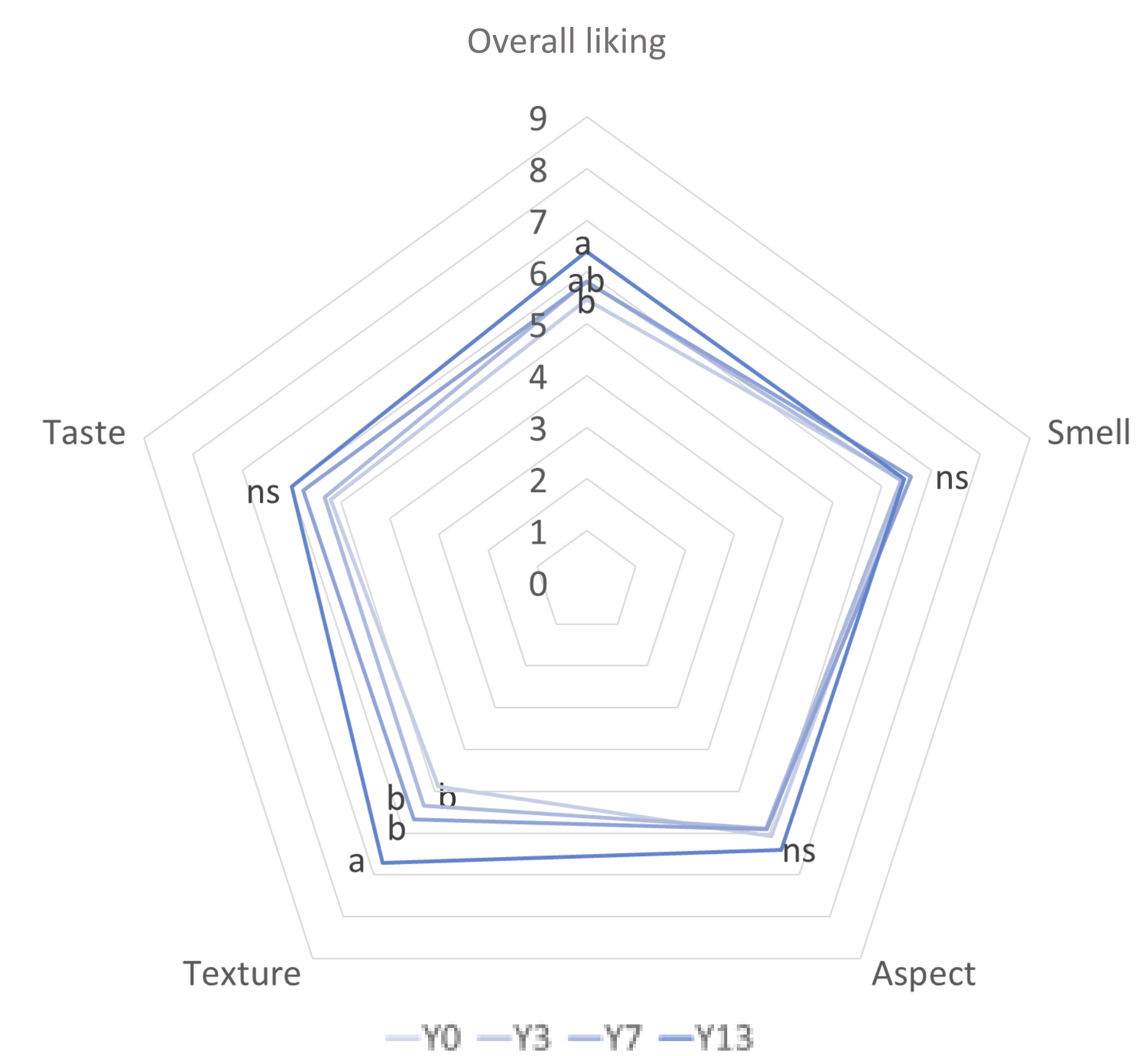
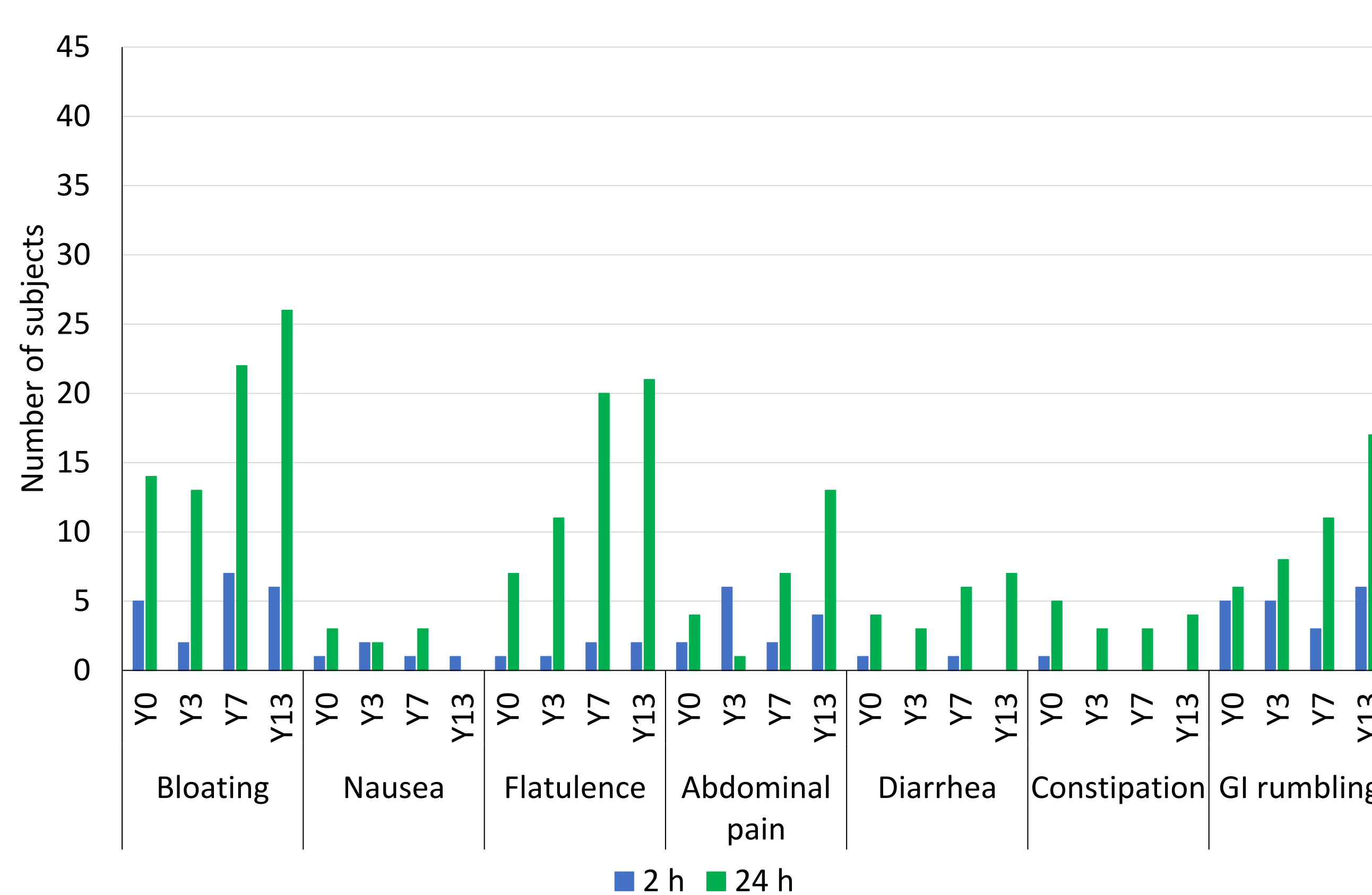
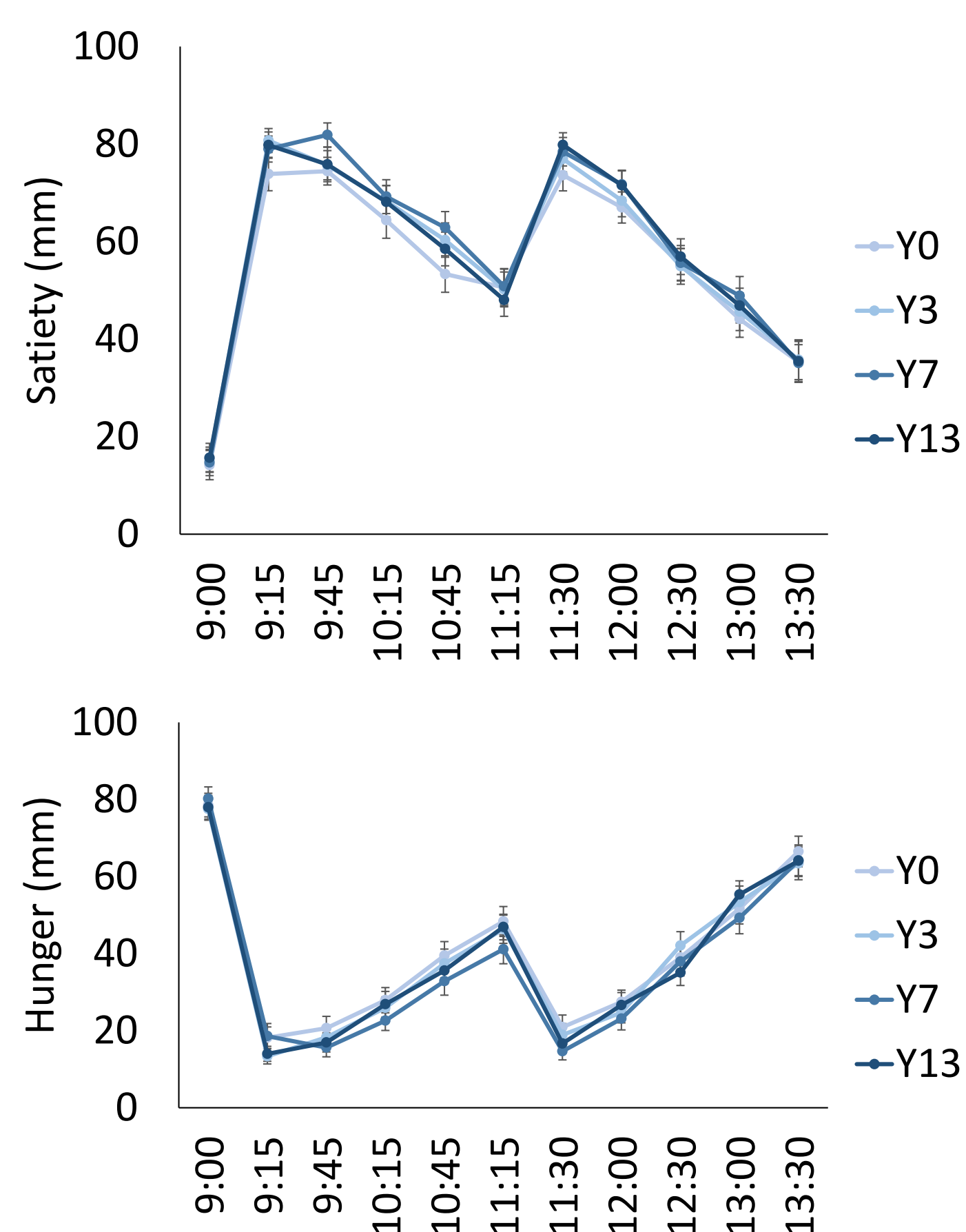


Figure 1. Satiety (top) and hunger (bottom) ratings measured at different times throughout the morning for each yogurt. Y0, control (0% dietary fiber). Y13, 13% dietary fiber. Y3, 3% dietary fiber. Y7, 7% dietary fiber.

Figure 2. Number of subjects (n = 45) that reported gastrointestinal symptoms of yogurts 2h and 24h after intake. Y0, control (0% dietary fiber). Y13, 13% dietary fiber. Y3, 3% dietary fiber. Y7, 7% dietary fiber.

Figure 3. Sensorial analysis of yogurts. Y0, control (0% dietary fiber). Y13, 13% dietary fiber. Y3, 3% dietary fiber. Y7, 7% dietary fiber. Different letters indicate significant differences between samples ($p < 0.05$); ns, not significant.

The increasing addition of dietary fiber did not result in higher satiety or lower hunger ratings ($p > 0.05$).

Yogurts with 7 and 13 % dietary fiber significantly increased bloating and flatulence symptoms ($p < 0.05$) compared to the control and yogurt containing 3 % dietary fiber.

The sensory acceptability was dose dependent, as overall liking and texture improved with increasing doses of dietary fiber.

CONCLUSIONS

- Yogurts with coffee cascara extract, no added sugar and 3 % dietary fiber stand as tasty, healthy and sustainable food alternatives compared to the high-sugar content of yogurts currently available on the market.
- This work enhances the need to find a compromise between sensory, technological and nutritional properties for designing novel foods for sustainable health.

ACKNOWLEDGEMENTS

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