

Abstract

Nutritional Composition of Ultra-Processed Plant-Based Foods in the Out-of-Home Setting: A Case-Study with Vegan Burgers [†]

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Abstract: Introduction: Ultra-processed plant-based foods, such as plant-based burgers, have gained popularity and are perceived by consumers as a healthier and more environmentally sustainable alternative to animal-based foods. However, evidence regarding their nutritional profile and environmental sustainability is still evolving. Purpose: To contribute to the understanding of the nutrient profile of ultra-processed plant-based foods in the out-of-home environment. Methods: Cities in four WHO European Member States were selected for study in a convenience sample across the regions of Amsterdam, Copenhagen, Lisbon, and London. Plant-based burgers available at selected out-of-home sites were randomly sampled. In total 41 plant-based burgers were lab-analyzed for their energy, macronutrients, amino-acids and minerals content per 100 g and per serving size. Descriptive data were used to summarize the nutritional composition per 100 g and serving size. The content per serving was compared to the appropriate reference values. Results: The median energy content was 234 kcal/100 g (IQR = 50). Median macronutrient composition was 20.8 g/100 g (IQR = 5.7) carbohydrates and 3.5 g/100 g (IQR = 1.8) dietary fibre. Protein content was 8.9 g/100 g (IQR = 3.7) with low protein quality. The median total fat content was 12.0 g/100 g (IQR = 4.2), including 0.08 g (IQR = 0.05) TFA and 2.2 g (IQR = 2.3) SFA. The median sodium content was 389 mg/100 g (IQR = 113), equivalent to 2.7 g salt. When compared with reference values, the median serving of plant-based burgers (280 g) provided 31% of energy intake and contributed 17–28% of carbohydrates, 42% of dietary fibre, 40% of protein, and 48% of total fat including 26% of SFA. The burgers had low-quality protein. One serving provided 15–20% of the reference values for calcium, potassium, and magnesium, while higher contributions were found for zinc (30%), manganese (38%), phosphorus (51%), and iron (67%). Conclusion: Ultra-processed plant-based foods, such as plant-based burgers, provide protein, dietary fibre, and essential minerals. They also contain high levels of energy, sodium, and fatty acids. Despite their potential as a source of protein, the quality of protein in plant-based burgers is low. The multifaceted nutritional profile of plant-based burgers highlights the need for manufacturers to implement improvements to better support healthy dietary habits. These improvements should include reducing salt and fatty acids while also enhancing protein quality.



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