

Poster 31

Decoding Tea and Infusions Labels: Understanding Ingredient Lists

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Abstract

Background: Concerns linking food and public health extend beyond nutrients to include the use of food additives [1-3]. Certain additives, like artificial sweeteners, were associated with higher risk of non-communicable diseases [3], raising doubts about their widespread use. While NutriScore is a nutritional labelling tool that addresses nutrients [2], it overlooks additive quantity, which may have “cocktail effects” on the consumer [1,3]. Tea and infusions (THI) are perceived as unprocessed foods, free of additives [1]. Our previous study showed that THI are primarily consumed by females, with choices being age-dependent [4]. Nevertheless, there are still gaps in the composition of THI products in the Portuguese market, remaining unclear whether all options are “healthy choices”. **Objective:** The study aimed to evaluate the content of various commercial THI products, focusing on the types and number of additives listed on their labels. **Methods:** Information was collected from labels of 294 THI products. With first ingredient, products were categorized: tea or plant infusions (non-flavoured, flavoured), fruits, spices, and soluble products. Additive data were categorized with Codex Alimentarius and analyzed using JASP (version 0.18.43). **Results:** Herbal infusions comprise 57.8% (34.7% non-flavoured and 23.1% flavoured), 29.9% tea (10.9% non-flavoured and 19.0% flavored), 4.8% soluble, and 3.7% consisted of both fruit and spice infusions. Among THI, 43.9% had one to eight additives, including flavours, sweeteners, acidity regulators, bulking/emulsifier agents, antifoaming agent and colour. Flavours were the most prevalent additive (75.6%), appearing in one to three different flavors. Sweeteners were present in soluble THI, 57.1% having three different types. Other products containing sweeteners were spice infusions (18.2%), tea (5.4%) and herbal infusion (4.4%) both flavoured. **Conclusions:** The study showed the presence of various additives in many THI products and, some of these additives, if consumed uncontrolled, could pose a health threat, especially for the most vulnerable individuals.

Keywords: commercial THI; food labels; additive list; food safety

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References

1. Sadler, C.R.; Grassby, T.; Hart, K.; Raats, M.; Sokolović, M.; Timotijevic, L. Processed food classification: Conceptualisation and challenges. *Trends Food Sci Technol* (2021), 112, 149-162.
2. WHO. Nutrition labelling: policy brief; WHO: Geneva, Switzerland, (2022); pp. 1-10.
3. Diaz, C.; Rezende, L. F. M.; Sabag, A.; Lee, D. H.; Ferrari, G.; Giovannucci, E. L.; Rey-Lopez, J. P. Artificially Sweetened Beverages and Health Outcomes: An Umbrella Review. *Adv Nutr* (2023), 14, 710-717.
4. Sousa, A. C.; Pádua, I.; Gonçalves, V. M. F.; Ribeiro, C.; Leal, S. Exploring Tea and Herbal Infusions Consumption Patterns and Behaviours: The Case of Portuguese Consumers. *Heliyon* (2024), 10(7), e28779.



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