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Can food reformulation be monitored using information from online retailers? – a pilot study

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With a quarter of all European deaths caused by diet related diseases[(1)], food reformulation has been identified as a means to improve the nutrient profile of food. The World Health Organisation defines food reformulation as *"the process of altering the processing or composition of a food or beverage product, to improve its nutritional profile"* [(2)]. The Food Reformulation Task Force is a strategic partnership between Healthy Ireland and the Food Safety Authority of Ireland established to implement 'A Roadmap for Food Product Reformulation in Ireland 2021 – 2025'[(3)]. One objective of this partnership is to monitor reformulation progress across 40 priority categories for food reformulation[(4)] in Ireland. A UK study concluded that there was agreement between online and in-store declared nutrition information, meaning on-line nutrition information has potential for monitoring reformulation progress[(5)]. However, at present there are no scientific publications to support this approach in Ireland.

The aim of this study was to examine the agreement between declared nutrition composition of food products sold online and in-store using two food categories: yogurts and savory snacks.

Declared nutrition information per 100 g of energy *(kJ)*, fat(g), saturated fat(g), sugar(g), and salt(g) for yogurts and savoury snacks was collected in store using the CLAS-IRE system[(6)]and online using Octoparse software[(7)] in February and March 2022. Product matches were identified using Microsoft Excel V16.70 by brand and product name. Data was analysed in RStudio 4.2.1 (2022–06–23) using Wilcoxon Signed-Ranked test and percentage difference to investigate the agreement between average declared energy *(kJ)*, fat(g), saturated fat(g), sugar(g), and salt(g) per 100 g for products sold online and in-store.

Of 594 in-store products (yogurts $n = 296$, savoury snacks $n = 298$) and 166 online supermarket products (yogurts $n = 99$, savoury snacks $n = 67$), n = 75 product matches were identified (yogurts $n = 49$, savoury snacks $n = 26$). Within the matched yogurts, there was a statistically significant difference ($p < 0.05$) in fat ($p = 0.034$) and saturated fat ($p = 0.015$) content per 100 g. However, percentage difference was 0.5% for fat and 0.95% for saturated fat. There was no statistically significant difference between online and instore energy ($p = 0.529$), sugar ($p = 0.833$) and salt ($p = 0.098$) content of matched yogurts. Of the matched savoury snacks, there was no statistically significant difference between online and instore energy ($p = 0.423$), fat ($p = 0.371$) saturated fat ($p = 1$) sugar ($p = 1$) and salt ($p = 0.371$) content per 100 g.

This pilot study found online food product nutrition composition information available via online supermarkets has potential for monitoring food reformulation in Ireland. A comprehensive analysis of information for the 40 priority food categories for food reformulation is recommended before online information can be relied upon to monitor reformulation of foods on the Irish market.

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