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## The range and nutrient composition of alternative protein products sold in Australian supermarkets between 2014 and 2021

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Individuals are shifting towards more plant-based dietary patterns, driving growth of alternative (plant-based) protein products, globally.<sup>(1)</sup> In recognition of the knowledge gaps in the nutrient composition of alternative protein products, the World Health Organization has called for more research evaluating their healthfulness.<sup>(2)</sup> The purpose of this study was to investigate changes in the range and nutrient composition of processed alternative protein products available in Australian supermarkets from 2014 to 2021. The nutrient composition of products available across the category each year were examined, as well as the products available over multiple years of data collection to investigate whether there was evidence of product reformulation within the category over time. Product data were extracted from FoodTrack, an established database of packaged supermarket products developed by the Commonwealth Scientific and Industrial Research Organisation in collaboration with the National Heart Foundation of Australia. Each year, product data were collected from four major retailers in metropolitan Victoria (Australia) from 2014 to 2019 and 2021. Eligible products were grouped into three subcategories (i) tofu-based products; (ii) legume-based products; and (iii) plant-based meats. Nutrient composition (energy and macronutrients) was assessed from the products' nutrition information panel displayed on pack, and medians and 25<sup>th</sup> and 75<sup>th</sup> percentiles were calculated for nutrients. Kruskal–Wallis and Mann–Whitney U tests were used to test for differences in the nutrient composition of products and changes over time. Data from 590 products were included. The total number of alternative protein products in supermarkets more than doubled between 2014 ( $n = 66$ ) and 2021 ( $n = 152$ ; 130% increase). On average, products were available for 2.2 years (range 1–7 years). Generally, tofu-based products were highest in saturated fat and sodium, legume products were highest in carbohydrates, sugar and fibre, and plant-based meats were highest in protein ( $p < 0.001$  for all), and total fat ( $p = 0.006$ ). There was some evidence of product reformulation (changes in nutrient composition of products over time), however, these changes did not always improve the healthfulness of products. Approximately half the products had increased in saturated fat and sodium (ranges  $-100\%$  to  $+800\%$  and  $-58\%$  to  $+128\%$ , respectively) and approximately 40% decreased in fibre (range  $-43\%$  to  $+220\%$ ). The range of alternative protein products available in Australian supermarkets has rapidly evolved. The wide range of nutrient contents and the variation in composition over time suggests innovation technologies may be more focused on consumer acceptability (in terms of price and taste), rather than improved nutrition, highlighting an area for improvement. There are currently no proposed reformulation targets for this category of foods in Australia; without established benchmarks, the incentive for the food industry may not be enough to drive change.

### References

1. Wickramasinghe K, Breda J, Berdzuli N, *et al.* (2021) *Glob Food Secur* **29**, 100530.
2. Hargreaves SM, Raposo A, Saraiva A, *et al.* (2021) *Int J Environ Res Public Health* **18**, 4067.