Plant-based yogurt alternatives: Suitable substitutes for cow's milk yogurts?

Victoria M. Taormina[1], Seana Kelly[1], Jana Kraft[1,2]
[1]Department of Animal and Veterinary Sciences, The University of Vermont, Burlington, VT 05405, USA
[2]Department of Medicine, The University of Vermont, Burlington, VT 05446, USA

Introduction

- More types of yogurts and plant-based yogurt alternatives are becoming available on the market.
- The extent to which these foods may be substituted specifically based on their fatty acid (FA) content and composition is unclear due to limited literature available.
- Objective: Analyze and compare the FA content and composition per one cup (245 g) serving of yogurt and plant-based yogurt alternatives available on the market in Chittenden County, Vermont.

Methods

- Cow's milk yogurts and plant-based yogurt alternatives were purchased from commercial retailers in Chittenden County, Vermont, USA.
- Total of 67 yogurts analyzed: 45 cow's milk yogurts, 5 soy-based yogurts, 6 almond-based yogurts, and 11 coconut-based yogurts
- Yogurt lipids were extracted, transesterified, and analyzed via gas-liquid chromatography (**Fig 1**.)

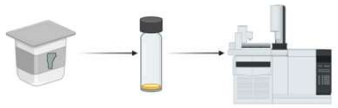
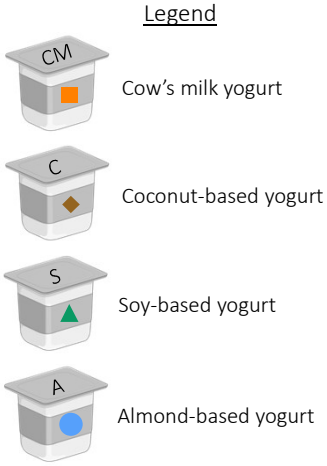


Figure 1. Processing of samples

Results



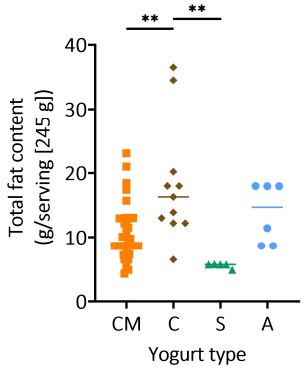


Figure 2. Cow's milk yogurts contained comparable total fat contents as almond- and soy-based yogurts, and less than coconut-based yogurts. Line represents median content per yogurt type. *$P < 0.05$. **$P < 0.01$.

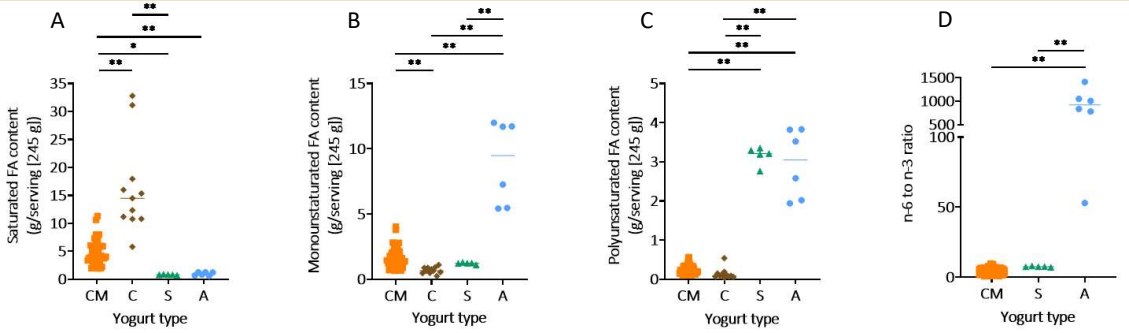


Figure 3. (A) Cow's milk yogurts contained more saturated FAs per serving than almond- and soy-based yogurts, but approximately half the content of coconut-based yogurts. (B) The monounsaturated FA content of cow's milk yogurts was comparable to that of soy-based yogurts but was less than that of almond-based yogurts and more than that of coconut-based yogurts. (C) Cow's milk yogurts contained comparable polyunsaturated fatty acid contents as coconut-based yogurts, but substantially less than that of almond- and soy-based yogurts. (D) Cow's milk yogurts contained a comparable n-6 to n-3 ratio as soy-based yogurts and a smaller ratio than almond-based yogurts; coconut-based yogurts were not compared due to their trace n-3 FA content. Line represents median content per yogurt type. FA, fatty acid. *$P < 0.05$. **$P < 0.01$.

Conclusion: Plant-based yogurt alternatives are not direct substitutes for cow's milk yogurts and substitutions should be made with attention to these differences in the FA content and composition.

Victoria M Taormina, BS
Victoria.Taormina@uvm.edu
@V_Taormina

Funded by USDA National Institute of Food and Agriculture and The UVM Food Systems Research Center

University of Vermont

Created with BioRender.com and GraphPad Prism 10.2.3