

PLANT-BASED ALTERNATIVES TO CHEESE – ANTIOXIDANT, NUTRITIONAL AND SENSORY CHARACTERISTICS

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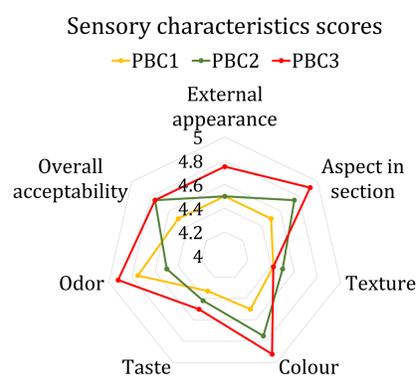
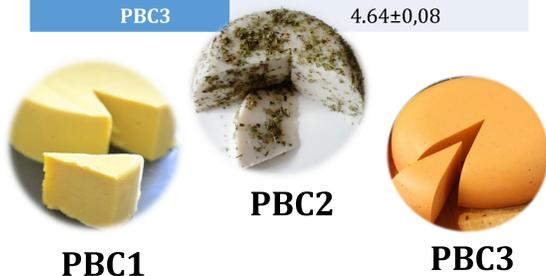
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Abstract: High interest in plant-based foods has grown due to concerns about human health, sustainability and animal welfare. When it comes to conventional dairy production, there are three major areas of concern: environmental impact, human health and animal welfare. Therefore, plant-based cheese alternatives offer a more sustainable and ethical option for consumers. The first objective of this work was to obtain a vegan alternative to cheese, using cashew nuts as the basic raw material, in three assortments: a simple version (PBC1), one with the addition of dry basil and dry thyme (PBC2), respectively one with sweet paprika and black pepper (PBC3). Another objective of the work was to analyze the finished products regarding the content of total polyphenols (Folin-Ciocalteu assay), antioxidant activity (CUPRAC method) and antiradical activity (DPPH assay), as well as to determine the proximate composition, energy value and sensory properties (5-point hedonic scale method). The PBC3 product variant with the addition of sweet paprika and black pepper proved to have the highest total polyphenols content (4.64 ± 0.08 mg GAE/g) as well as the strongest antioxidant (9.81 ± 0.14 mg Trolox/g) and antiradical activity. The three product assortments had very close proximate composition and energy value, and compared to conventional milk cheeses, they were lower in protein, richer in carbohydrates and cholesterol-free. The sensory analysis highlighted the fact that all product variants were well accepted by the panelists, obtaining scores above 4 for all organoleptic characteristics.

• Results and discussions

Total polyphenols content in raw and auxiliary materials

Sample	Total polyphenols content (mg gallic acid/g)
Cashews	3,68±0,10
Lemon juice	1,58±0,06
Garlic powder	3,55 ± 0,07
Dried thyme	15,93±1,50
Sweet paprika	6,62±0,18
Dried basil	8,02±0,23
Black pepper	20,72 ± 1,76
PBC1	2,76±0,03
PBC2	3,82±0,05
PBC3	4,64±0,08



Antioxidant and antiradical activity

Sample	Antioxidant activity (mg Trolox/g)	RSA (%)
Cashews	13.08±0.18	90.81±0.51
Lemon juice	11.24 ± 0.12	92.63±0.53
Garlic powder	12.72 ± 0.14	93.82±0.58
Dried thyme	39.42±0.34	90.16±0.46
Sweet paprika	52.89±0.84	89.21±0.38
Dried basil	49.75±0.72	89.03±0.48
Black pepper	58.86±0.91	94.81±0.58
PBC1	6.85±0.06	83.15±0.44
PBC2	8.23±0.12	85.64±0.42
PBC3	9.81±0.14	87.53±0.46

Finished products proximate composition

