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Development and characterization of two varieties of vegan soup concentrates with natural ingredients

Ana – Maria Dabici, Andrei – Dorin Mărginean, Andrei Alexandru Buhăceanu, Camelia
Moldovan, Viorica-Mirela Popa*

Faculty of Food Engineering, University of Life Sciences "King Mihai I" from Timișoara, Calea Aradului 119A, 300645,
Romania

*Corresponding author, e-mail: mirelapopa@usvt.ro

Abstract: A vegan alternative to soup concentrates was designed and developed from an organoleptic and physicochemical point of view in two varieties: with basil, oregano, and thyme (S1) and with ginger and turmeric (S2).

The two variants of the vegan alternative to soup concentrates (with basil, oregano, and thyme, and with ginger and turmeric) are defined by organoleptic properties that are distinct from those of classic soup concentrates, due to the healthy ingredients added to the composition of the products obtained, with an aroma distinct to these ingredients.

The calculated values for water content, NaCl, and acidity of the vegan alternative to soup concentrates comply with the standards specific to this range of food products. The energy value of the vegan alternative to soup concentrates is due to the caloric elements: lipids, carbohydrates, and proteins in its composition. After processing, the two types of vegan alternatives to soup concentrates were packaged in 30 g jars and Al foil, stored at freezing temperature.

The study successfully developed two varieties of vegan soup concentrates that offer a clean and nutritious alternative to products currently on the market. S2 stands out for its superior functional potential, while S1 appeals for its balanced sensory qualities. The integration of these ingredients not only improves the flavor but also fortifies the products with natural antioxidants, contributing to the nutritional value of the concentrates. These products can be an industrial-scale alternative to meet the demand in the "plant-based" segment.

• Results and discussions

Organoleptic characteristics of vegan alternative products to soup concentrates

Characteristics	Admissibility requirements
Appearance	relatively compact mixture, with raw materials evenly distributed throughout the product composition, without air pockets or unground pieces of ingredients
Consistency	oily and slightly stiff texture
Color	shades of intense yellow and pale orange
Taste	salty, pleasant, specific to vegetables and other ingredients in the manufacturing recipe. Balanced aroma of the finished products due to the added spices.
Smell	characteristic of the ingredients used
Aroma	pleasant, specific to the ingredients in the recipe

Physical and chemical parameters of vegan alternatives to soup concentrates

Assortments	Humidity [%]	Acidity [%]	NaCl content [%]
Vegan alternative to soup concentrates with added basil, oregano, and thyme	21.70	5	1.74
Vegan alternative to soup concentrates with added ginger and turmeric	19.8	4.5	1.73

The energy value of the two vegan alternatives to soup concentrates

Product name	Proteins [g/100g]	Carbohydrates [g/100g]	Lipids [g/100g]	Energy Value	
				[kcal./100g]	[kJ/100g]
Vegan alternative to soup concentrates with added basil, oregano, and thyme	30.4	180.9	7.3	1054.34	4396.59
Vegan alternative to soup concentrates with added ginger and turmeric	29.7	194.2	6.5	1099.08	4583.16

• Conclusions

A vegan alternative to soup concentrates was designed and developed from an organoleptic and physicochemical point of view in two varieties: (S1) with basil, oregano, and thyme, and (S2) with ginger and turmeric. These two variants of vegan alternatives to soup concentrates are defined by organoleptic properties that differ from those of classic soup concentrates, due to the healthy ingredients added to the composition of the products obtained, with an aroma distinct to these ingredients.

The calculated values of water content, NaCl, and acidity of the vegan alternative to soup concentrates comply with the standards specific to this range of food products. The energy value of the vegan alternative to soup concentrates is due to the caloric elements: lipids, carbohydrates, and proteins in its composition. After processing, the two types of vegan alternatives to soup concentrates were packaged in 30 g jars and Al foil, stored at freezing temperature. The vegan alternative to soup concentrates (with basil, oregano, and thyme, and with ginger and turmeric) is a food product with pleasant sensory qualities and a relatively moderate energy value, recommended for consumption from the perspective of a healthy composition consisting of vegetables.

