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KEFIR ENRICHED WITH DATE PASTE: A NOVEL INGREDIENT FOR THE DAIRY INDUSTRY

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Keywords: kefir, dairy product, date co-products, enrichment, novel foods

Kefir is a fermented milk drink similar to a thin yogurt that is made with lactic acid bacteria and yeasts. On the other hand, the date is a fruit from palm trees, which are characterised by being cultivated in arid or semi-arid regions and for being important from a. cultural, social, environmental and economic point. The aim of this work was to analyse the effect of date paste (Confitera cv., tamar ripening stage) addition on proximal composition, physico-chemical and sensory properties of goat kefir. Goat's milk was pasteurised (60°C for 30 min) and then the kefir starter and date paste were added. Three batches of 1 L each (control, 3% and 6% DP) were made and incubated at 25°C for about 20 hours. Physico-chemical properties (pH, Aw, acidity), proximal composition (protein, fat, ash, moisture and total solids) were determined in triplicate and a sensory analysis was carried out with 50 panelists. The results showed that date paste didn't affect the Aw and acidity, while the pH decreased respect to the control (control : 4.31; 3% : 4.24; 6% : 4.20). In terms of proximal composition, moisture and ash significantly increased as the amount of date paste increased (from 85.41 to 86.72% and from 0.72 to 0.85%, respectively). Fat decreased with the addition of date compared to the control (4.47 *vs* 3.04–3.81) while protein and total solids increased (from 1.83 to 2.26% and from 4.75 to 5.96%, respectively). In terms of sensorial analysis, significant differences were only observed for color and acidity and regarding the overall acceptability, the most liked sample was the kefir formulated with 6% DP, followed by 3% DP and finally the control (6% : 6.91, 3% : 6.29 and control : 5.61). The results demonstrate the feasibility of using date co-products as an ingredient in kefir preparation without compromising its technological properties, receiving even higher acceptance compared to traditional goat kefir.

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Kefir enriched with date paste: a novel ingredient for the dairy industry

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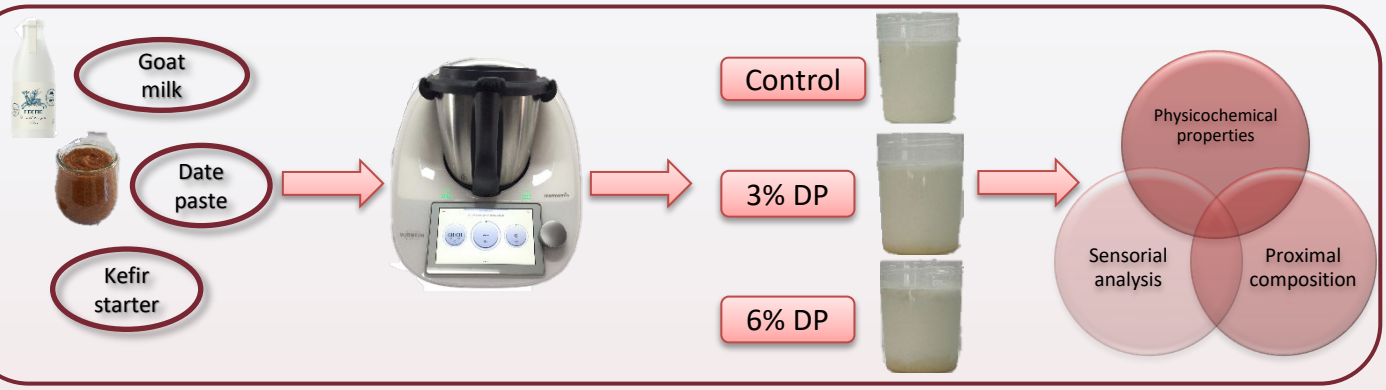
INTRODUCTION

The largest palm grove in Europe is located in Elche (Alicante, Spain), declared a World Heritage Site by UNESCO. Date palm trees are cultivated in arid or semi-arid regions and their production (date fruits) has a great importance in these areas from a cultural, social, environmental and economic point. In Elche, there is an authoctonous cultivar (Confitera) whose dates are commercialized as fresh dates generating a large amount of co-products. These co-products, as the same as dates, are rich in antioxidant compounds, sugars and dietary fiber, among others and so they can be valorised obtaining high-added value products such as date paste.

OBJECTIVE

The aim of this work was to analyse the effect of date paste (Confitera cv., tamar ripening stage) addition on proximal composition, physico-chemical and sensory properties of goat kefir.

MATERIALS & METHODS



RESULTS AND DISCUSSION

Table 1. Physicochemical characterization of kefir with date paste (mean±standard deviation)

	pH	Aw	Acidity (ºD)
Control	4.31±0.01^{a}	0.96±0.00^{a}	94.00±2.83^{a}
3%	4.24±0.01^{b}	0.96±0.00^{a}	101.00±1.41^{a}
6%	4.20±0.00^{c}	0.96±0.00^{a}	96.50±2.12^{a}

Table 2. Proximal composition (g/100g) of kefir with date paste

	Protein	Fat	Ash	Moisture	Total solids
Control	1.83±0.01^{b}	4.47±0.61^{a}	0.72±0.07^{b}	85.41±0.32^{c}	4.75±0.35^{b}
3%	2.39±0.01^{a}	3.04±0.00^{b}	0.75±0.02^{ab}	86.56±0.83^{bc}	4.36±0.06^{bc}
6%	2.26±0.03^{a}	3.81±0.04^{a}	0.85±0.05^{a}	86.72±0.19^{ab}	5.96±0.06^{a}

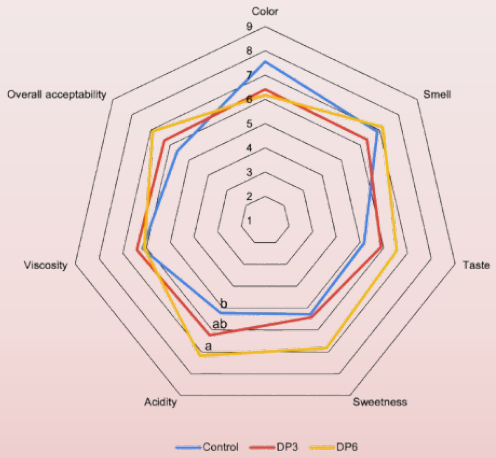


Figure 1. Sensorial analysis of kefir with date paste

CONCLUSIONS

The results demonstrate the feasibility of using date co-products as an ingredient in kefir preparation without compromising its technological properties, receiving even higher acceptance compared to traditional goat kefir.

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