



Dias, S.¹, Gonçalves, D.¹, Pino-Hernández, E.¹, Alves, M.^{1*}

¹ INOV.LINEA/TAGUSVALLEY – Science and Technology Park, 2200-062, Abrantes, Portugal
Contact information: sara.dias@tagusvalley.pt; marco_alves@tagusvalley.pt

Introduction

Soy-based products are currently the most consumed non-dairy drinks. However, its consumption is associated with health concerns related to GMOs, allergens and high CO₂ footprint [1]. Other plants, such as pulses, that require smaller amounts of water for their production and are nutritionally rich, can be an alternative. This study aimed to conduct a sensory analysis to compare two formulations of chickpea-based drink.

Methods

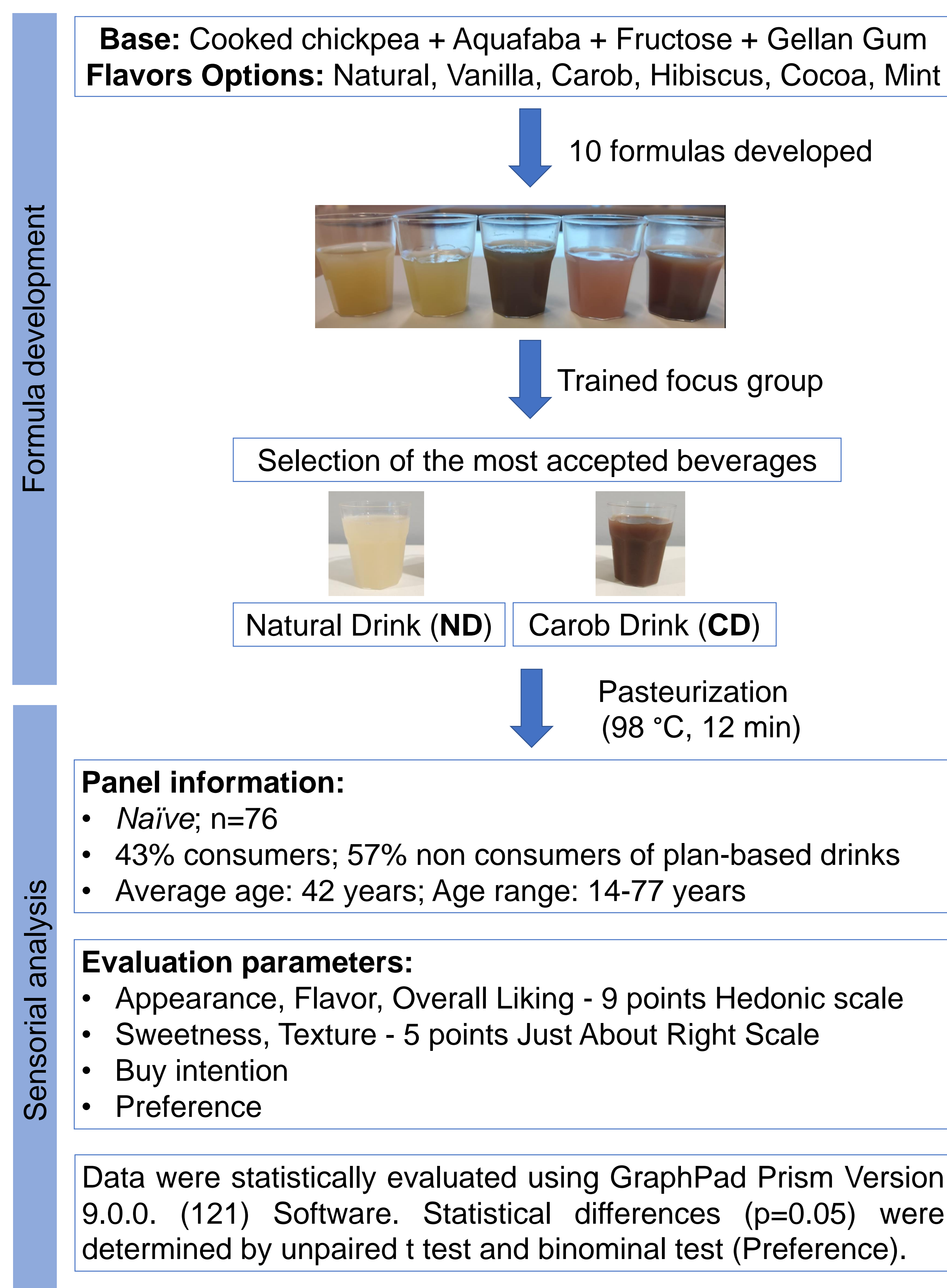


Figure 1. Product development process applied in TAGUSVALLEY, considering formula development and sensorial evaluation.

Results

CD and ND had a score of around 7 (like moderately) in appearance, flavor and overall liking (Table 1). However, CD was preferred by 63% of panelists ($p<0.05$). In terms of buy intention the sample population “would probably buy” both products. Considering non-consumers, 73% preferred CD ($p<0.05$), and attributed an overall liking of 7.

Table 1. Sensorial results of ND and CD, considering total sample population, consumers and non-consumers.

Drink	Sample population		Consumers		Non Consumers	
	Natural	Carob	Natural	Carob	Natural	Carob
Appearance	6.59 ^a	6.59 ^a	6.40 ^a	6.44 ^a	6.85 ^a	6.79 ^a
Flavour	7.07 ^a	7.20 ^a	7.37 ^a	7.33 ^a	6.67 ^a	7.03 ^a
Overall liking	6.95 ^a	7.04 ^a	7.19 ^a	6.98 ^a	6.64 ^a	7.12 ^a
Buy intention	3.75 ^a	3.80 ^a	3.93 ^a	3.81 ^a	3.52 ^a	3.79 ^a
Preference	28 ^b	48 ^a	19 ^a	24 ^a	9 ^b	24 ^a

More than half of panelists considered the CD sweetness and texture was “just about right”, 21.1% thought the drink was “too much liquid” which penalized the overall liking by 0.47 points (Table 2). The same tendency was observed considering non-consumers with a penalization of 0.41 points. Non-consumers are also critic about the drink seems “too liquid”.

Table 2. Sensorial results of CD, considering total sample population and non-consumers.

Parameter	Total Sample population	Overall Liking	Penalty
Sweetness	Too much sweet	39.5%	7.03
	As I like	52.6%	7.50
	Slightly sweet	7.9%	4.00
Texture	Too much thick	27.6%	7.23
	As I like	51.3%	7.74
	Too much liquid	21.1%	5.50
Parameter	Non consumers	Overall Liking	Penalty
Sweetness	Too much sweet	36.4%	7.17
	As I like	51.5%	7.76
	Slightly sweet	12.1%	4.25
Texture	Too much thick	30.3%	7.40
	As I like	51.5%	7.59
	Too much liquid	18.2%	5.33

Conclusions

The new Carob Drink has potential for a successful market launch. Chickpea can be used as an alternative to soy-based drinks. The results also suggest the existence of an unexpected target public – non-consumers of plant-based drinks. To further improve the market analysis, a comparative sensorial test between dairy chocolate milk drinks and CD should be conducted.

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References: [1] Lopes, M., Pierrepont, C., Duarte, C. M., Filipe, A., Medronho, B., & Sousa, I. (2020). Legume Beverages from Chickpea and Lupin, as New Milk Alternatives. *Foods*, 9(10), 1458. <https://doi.org/10.3390/foods9101458>