Use of microencapsulation of aromatic plants and spices as strategy for salt reduction for food and cooking

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the problem

Cardiovascular Diseases are the leading cause of death in Portugal and around the world

Arterial hypertension in one of the major risk factors

Portuguese consume 2 x more salt than recommended

More than 70% of salt comes from processed foods and catering/restaurants

AHT affects 36% of Portuguese population

Worldwide, 1 in 3 adults suffer from AHT

our goal

Use of microencapsulation technique to preserve aroma and flavour from aromatic plants and spices

our methodology

Extracts are produced from aromatic plants and spices (solid liquid extraction)
Microcapsules are produced using freeze drying technique

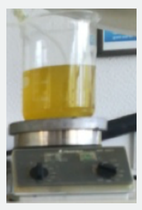
Samples were evaluated for yelds, encapsulation efficiency, solubility, hygroscopicity, colour and total phenolic compounds

Microparticle characterization by SEM analysis

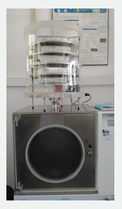
Sensorial evaluation was performed after use of microcapsules on cooking preparations

Plant material

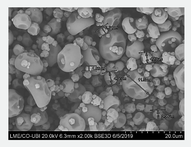
Extraction



Microencapsulation



Freeze-drying



Microcapsules magnification x 2000

Use in cooking preparation

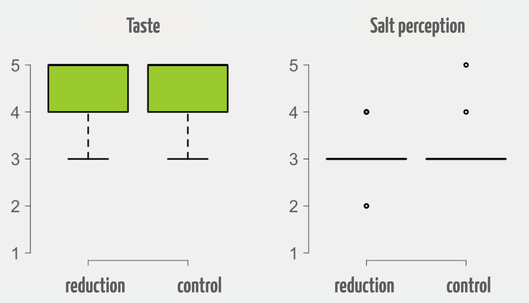
Sensorial evaluation

real life experience

Adult population - 50% salt reduction

78% of consumers state salt perception as adequate

Child population - 100% salt elimination

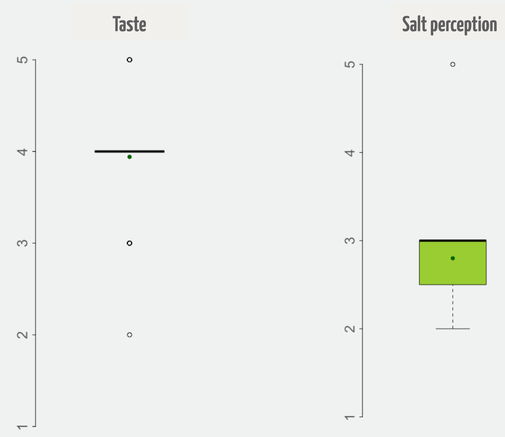


90,5% of consumer state salt perception as adequate

our results

Freeze drying microcapsules presented good quality with high yields, high encapsulation efficiency and good solubility

High diversity of polyphenolic compounds, especially flavones derivatives for fish oleoresins and phenolic acids for meat oleoresins



75% of the panel scores taste between 4 and 5

75% of the panel scores salt perception between 2,5 and 3 (adequate) (average = 2,8)

Sensorial evaluation resulted in positive taste and salt perception

our conclusions

Spherical form, as common salt, allows for similarity and its high solubility allows immediate and total dissolution

Flavour and aroma concentration allows for consumer salt perception

Its use allows gradual salt reduction or total elimination

Concrete strategy for salt reduction both for catering, restaurants and at home

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