



UNIVERSITAT
POLITÈCNICA
DE VALÈNCIA

IV Encuentro de Estudiantes de Doctorado



IMPROVING THE PROBIOTIC EFFECT OF AN APPLE SNACK BY MEANS OF TREHALOSE ADDITION AND/OR SUB-LETHAL HOMOGENIZATION

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**PHD PROGRAM IN FOOD
TECHNOLOGY**

PRESENT SITUATION:



Dairy products are commonly used as probiotic carriers



TRENDS:

1. • High prevalence of hyperlipidemia
2. • Lactose intolerance
3. • Rise of vegetarianism

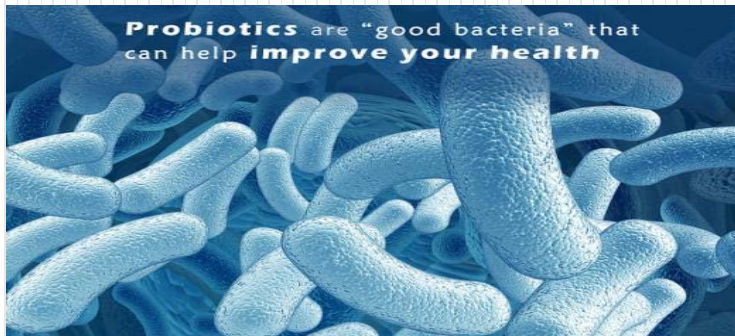
Alternative food matrices for delivery the probiotics



GENERAL AND SPECIFIC OBJECTIVES:

Applying simple food process engineering techniques :

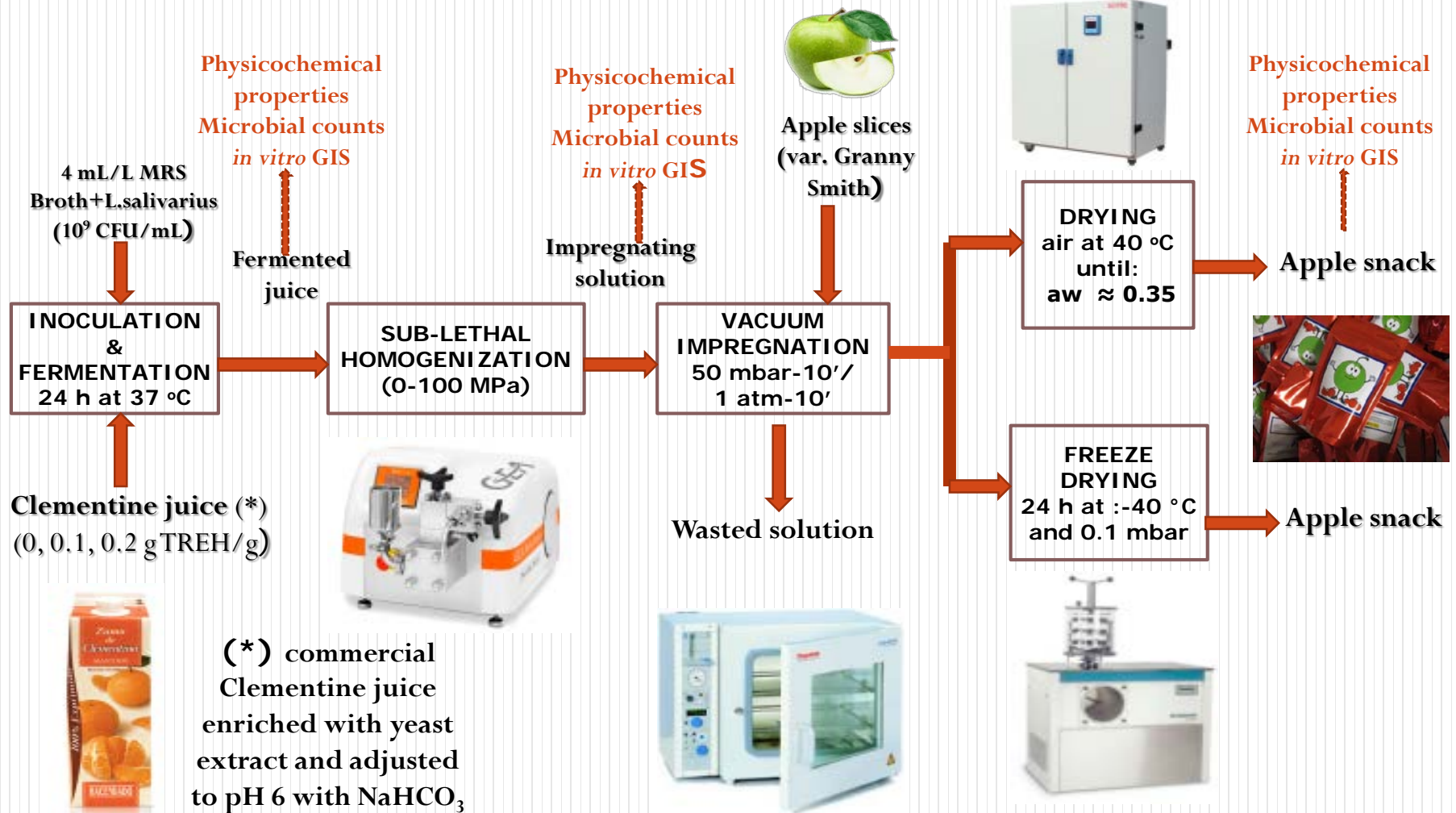
1. Formulation with ingredients that confer protection to biological structures.
2. Application of sub-lethal homogenization pressures (<100 MPa)



In order to increase the *Lactobacillus salivarius* spp. *salivarius* (CECT 4063) concentration and bioavailability in different food matrices:



MAIN STAGES OF RESEARCH DEVELOPMENT



EXPECTED RESULTS:

TREHALOSE addition at moderate concentration ($< 10\text{g}/100\text{g}$) to the juice formulation would confers protection to the probiotic microorganism.

SUB-LETHAL HOMOGENIZATION ($< 100\text{MPa}$) of the juice would increase the probiotic hydrophobicity.

DEHYDRATION TECHNIQUES would affect the probiotic because it confers more resistant to gastrointestinal conditions by being part of a food, especially if it is a solid structure.



SCIENTIFIC DISEMINATION:





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