

COST Action CA22134 (Sustainable
Network for agrofood loss and
waste prevention, management,
quantification and valorisation
(FoodWaStop)



**Green valorization of quince (*Cydonia
oblonga*) waste using Natural Deep Eutectic
Solvent by ultrasonic-assisted extraction**

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Green Valorization of Quince Waste Using Natural Deep Eutectic Solvents and Ultrasonic-Assisted Extraction

Sustainable Recovery of Polyphenols for Nutraceutical and Functional Food Applications



Background & Rationale

Green Valorization of Quince Waste

Using Natural Deep Eutectic Solvents & Ultrasonic-Assisted Extraction



Aim of the Study

To evaluate the efficiency of Natural Deep Eutectic Solvents (NADES) combined with Ultrasonic-Assisted Extraction (UAE) for recovering polyphenols from quince waste.

Specific objectives:

- Develop a Choline chloride/ Glycerol (ChCl/Gly) NADES system
- Compare NADES-UAE with conventional 75% ethanol extraction
- Assess potential for:
 - Total Phenolic Content (TPC)
 - Antioxidant activity (DPPH, ABTS assays)
- Assess potential for:
 - Nutraceuticals
 - Functional foods
 - Circular bioeconomy applications



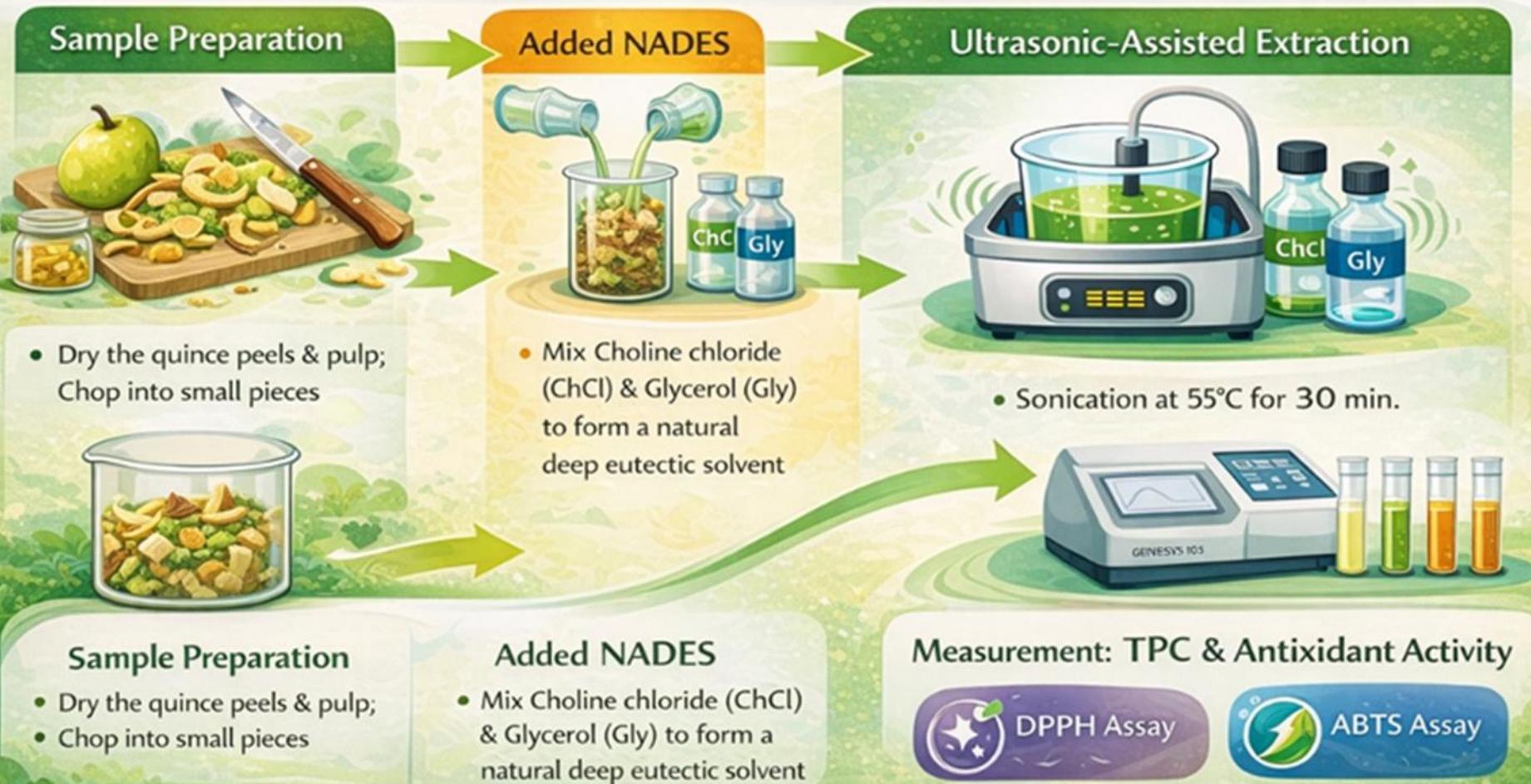
Nutraceuticals



Functional foods

Methodology

Experimental Procedure



Conclusions & Relevance to FoodWaStop

Conclusions & Relevance to FoodWaStop

COST Action CA22134 – FoodWaStop



Key findings:

- NADES-UAE is an effective green extraction technology
- Significantly increases recovery of polyphenols and antioxidants
- Reduces solvent toxicity and energy consumption



Future perspectives:

- Scale-up studies.
- Toxicological evaluation.
- Industrial implementation.



Contribution to FoodWaStop goals:



Future perspectives:

- Scale-up studies.
- Toxicological evaluation.





- Thank you for attention!