



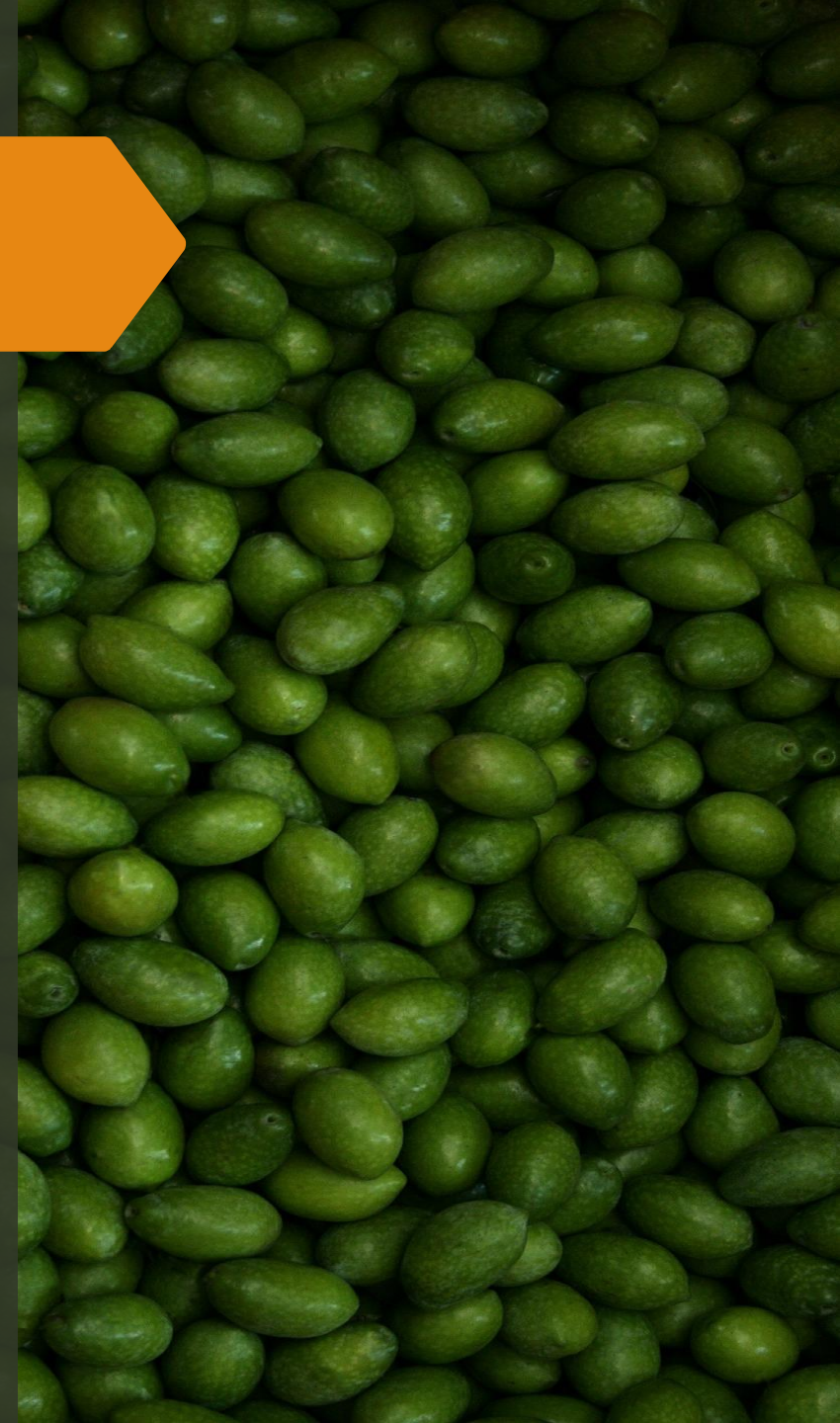
# **FOOD-COMPATIBLE METHOD FOR STABILIZATION OF OLIVE POMACE POLYPHENOLS**

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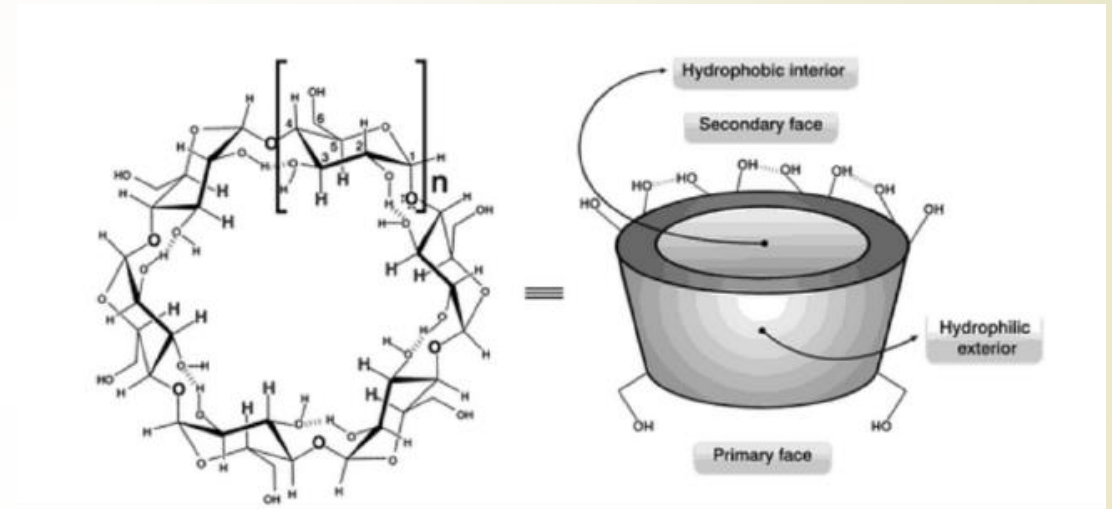
# OLIVE POMACE

- Waste from the olive oil production
- Serious environmental issue
- Heavy load of phenolic compounds
- Poor technological properties



# NOVEL FUNCTIONAL FOOD FORMULATION

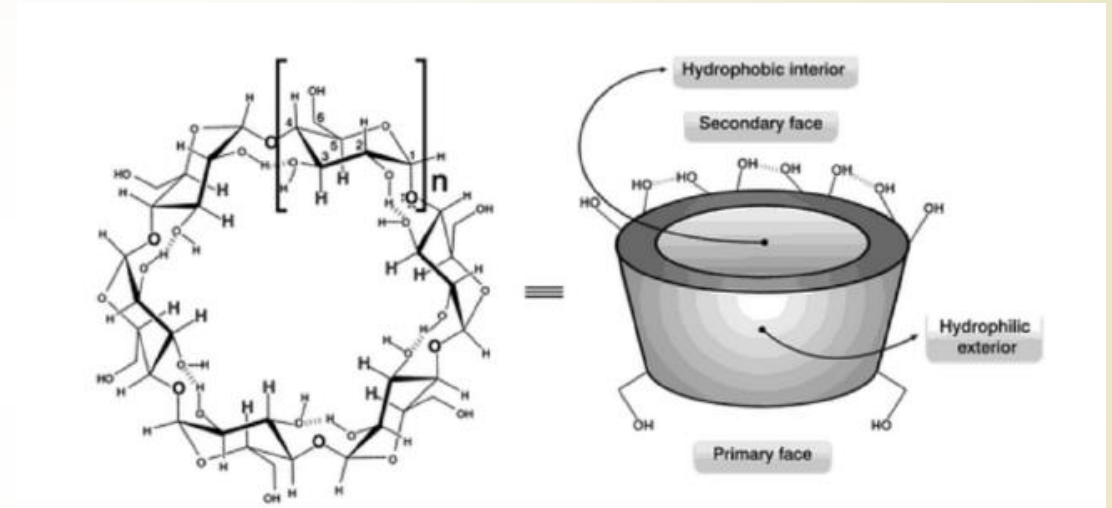
- **Cyclodextrins**
- Encapsulation agents
- 'Green' extraction methods
- Food-grade solvents



- B ( $\beta$  cyclodextrin)
- RAMEB (randomly methylated  $\beta$  cyclodextrin)
- HPB (hydroxypropyl  $\beta$  cyclodextrin)
- G ( $\gamma$  cyclodextrin)

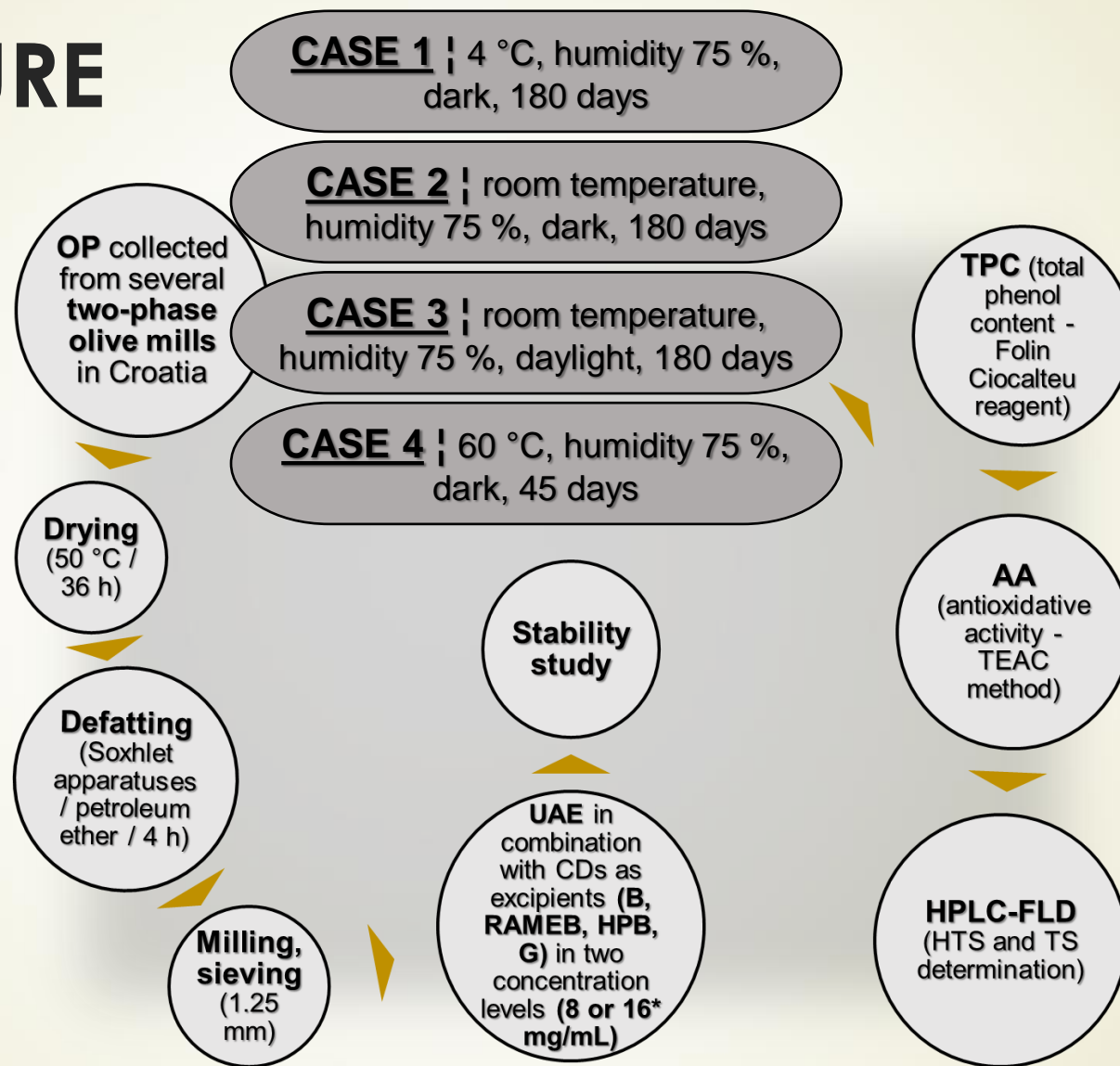
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# PROCEDURE

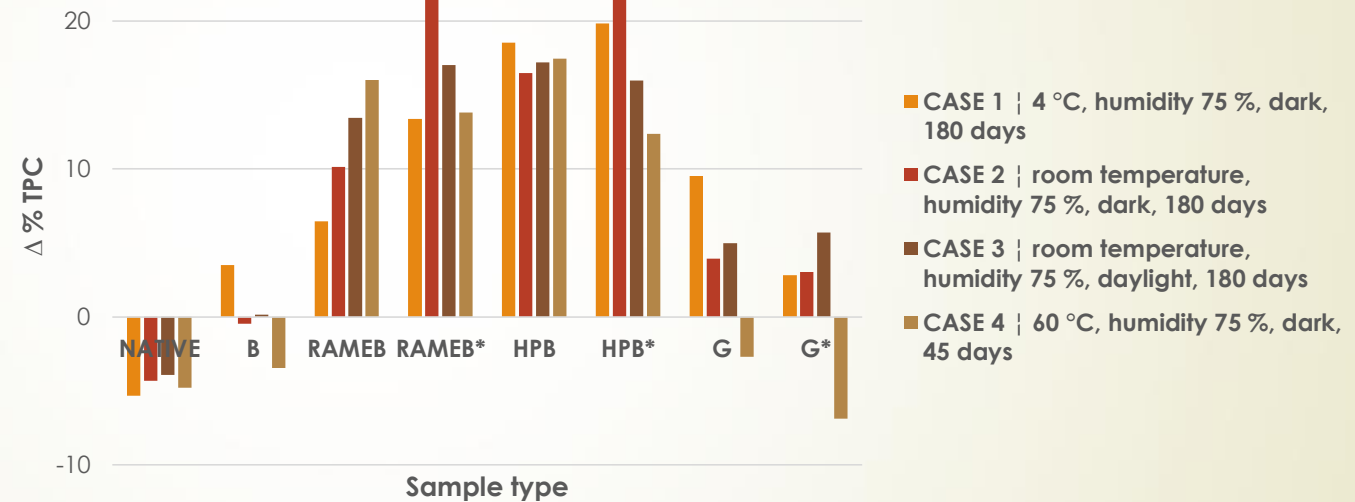


# Total phenol content

- ▶ Olive pomace phenols are generally stable
- ▶ The greatest protection effect:  
**HPB** (22 % higher)  
**RAMEB** (19 % higher)
- ▶ Daylight has no effect



Changes of total phenol content in COPE



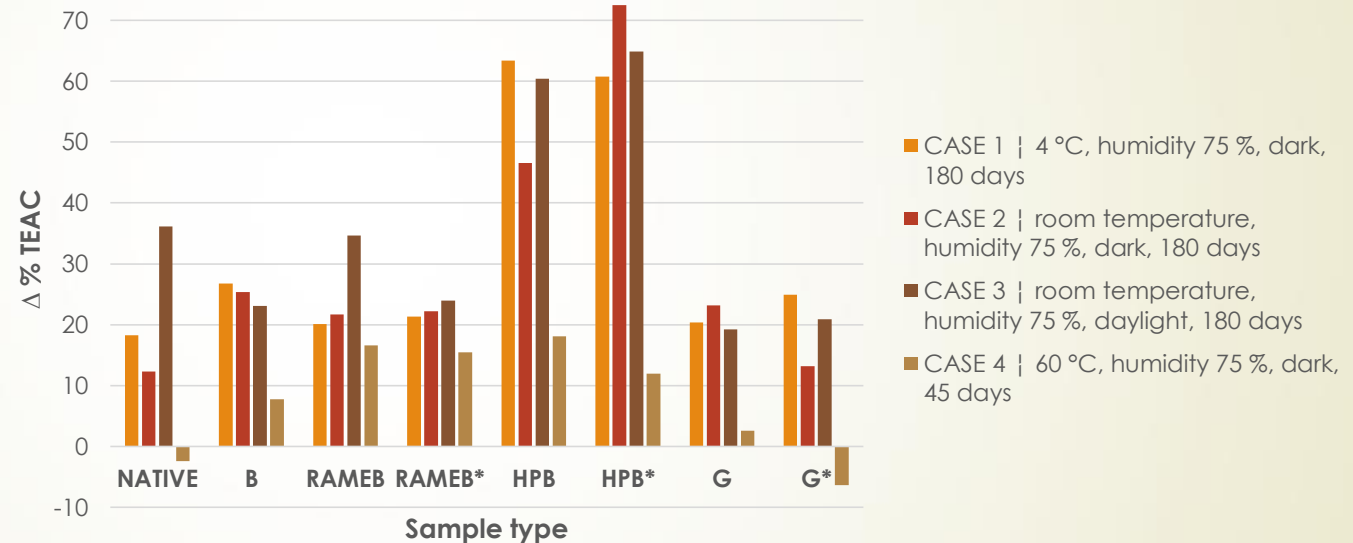


# Antioxidative activity

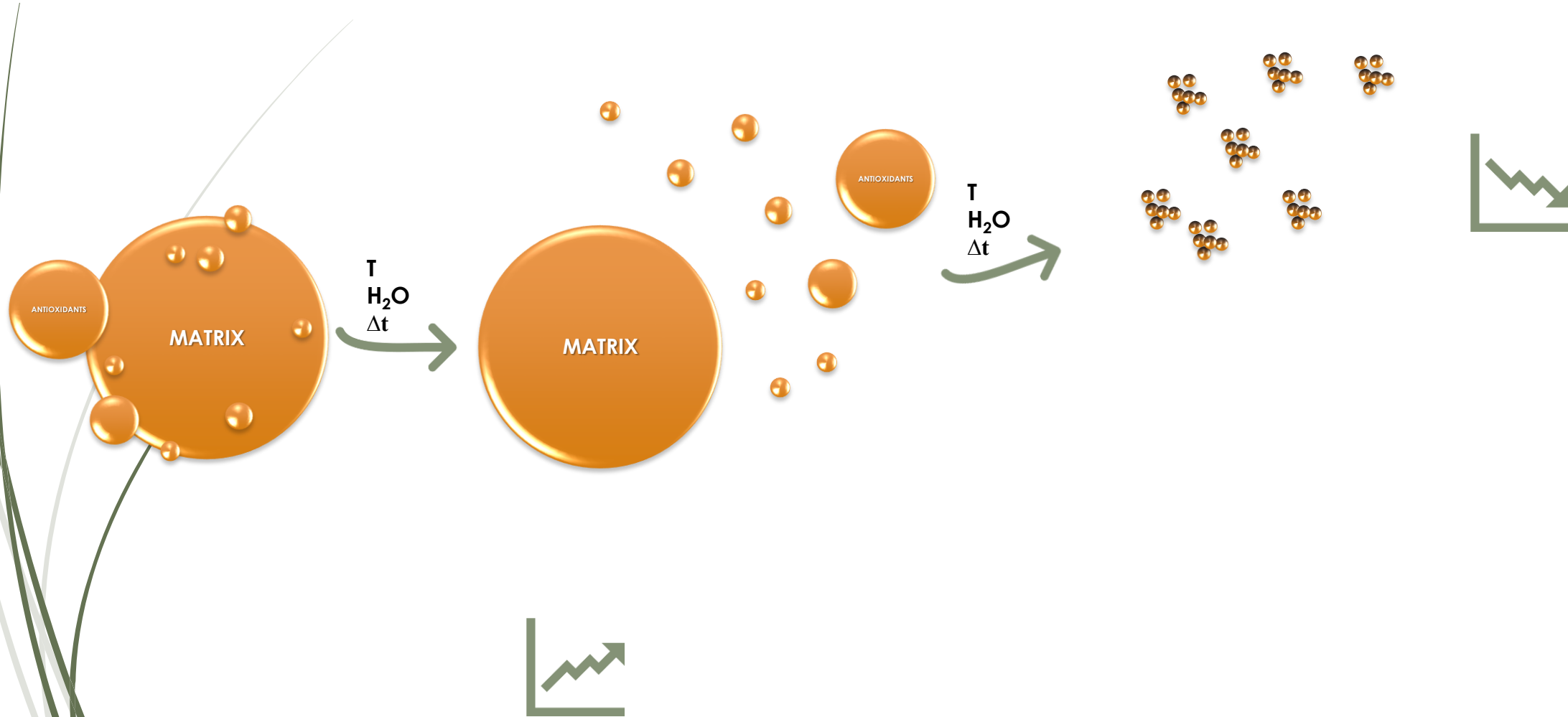
- Increase: **HPB** (by an average of 34 %)
- Temperature decomposition



Changes of antioxidative activity in COPE

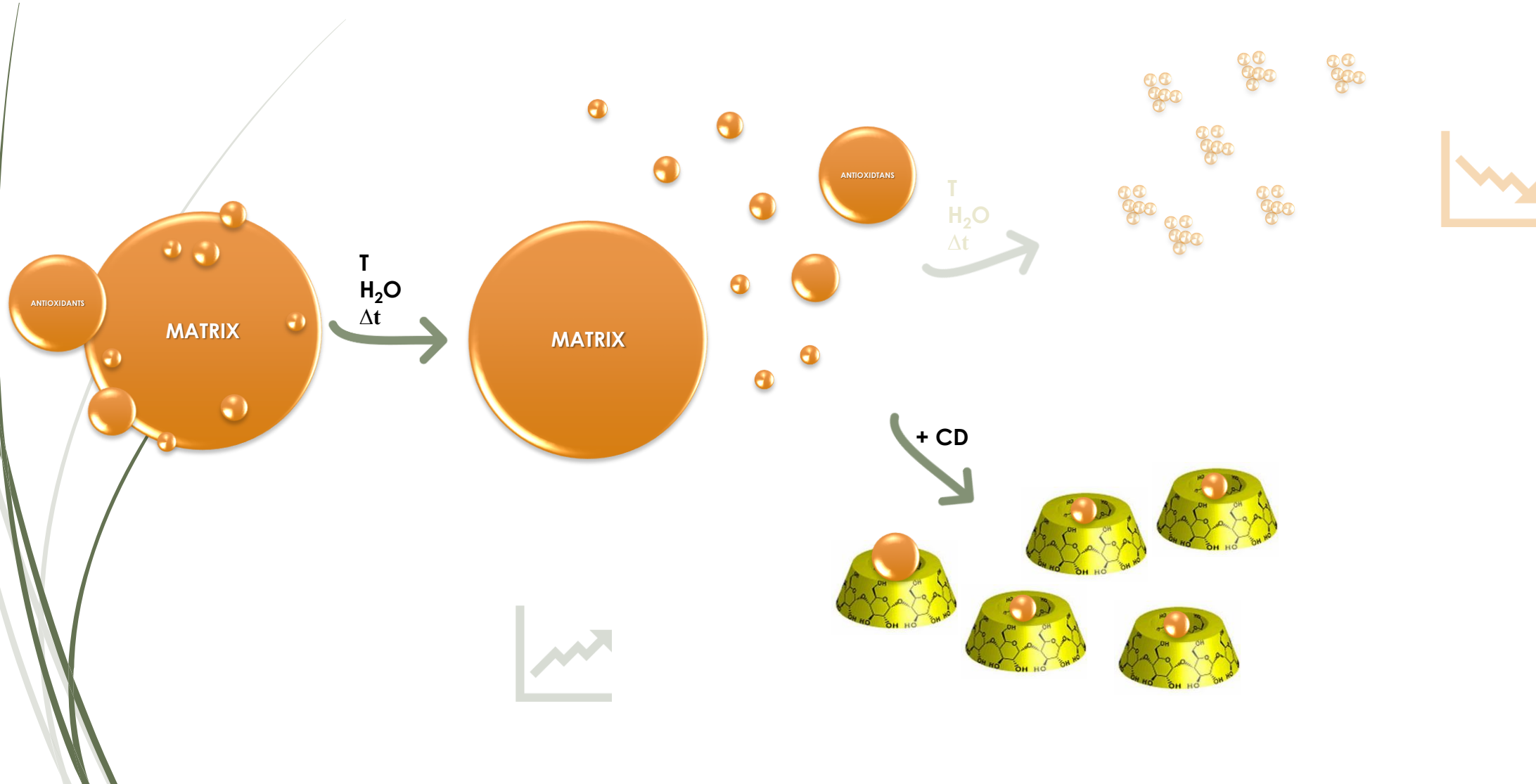


# ANTIOXIDATIVE ACTIVITY





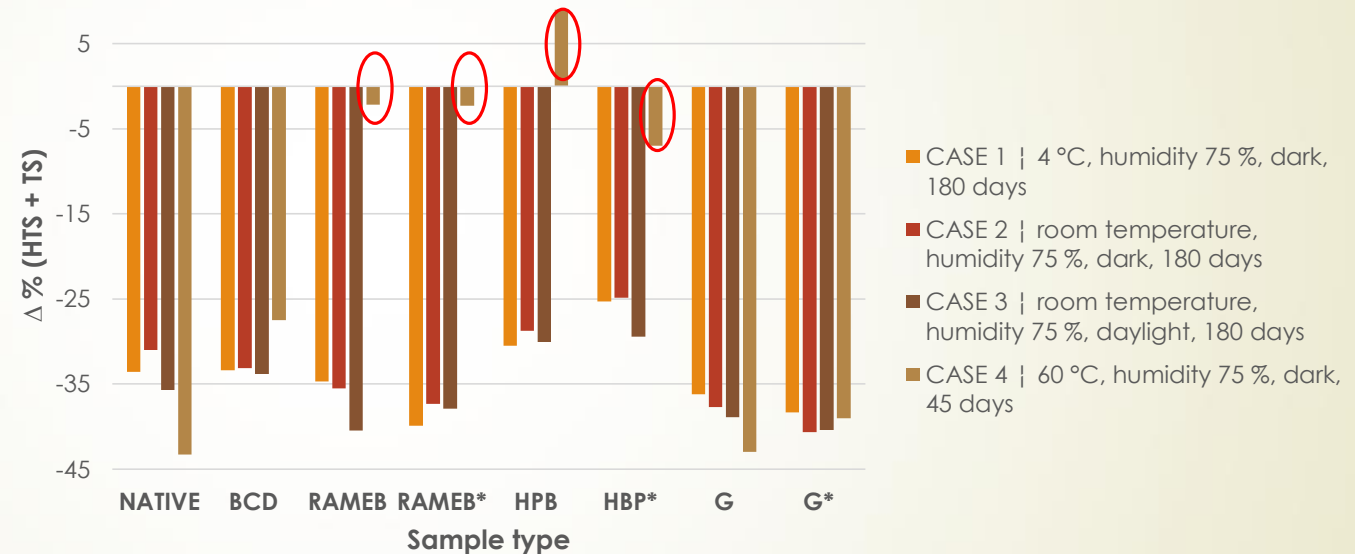
# ANTIOXIDATIVE ACTIVITY



# Tyrosol and hydroxytyrosol

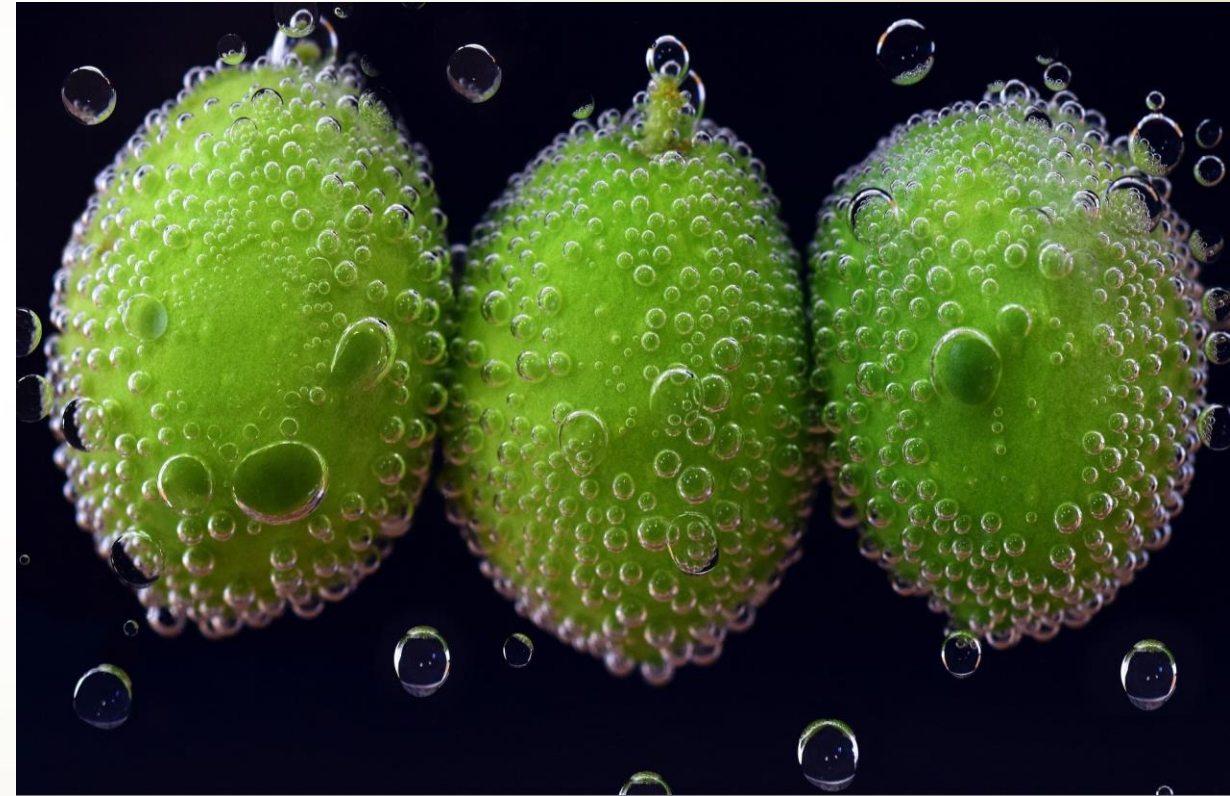
- Cyclodextrins showed no influence in CASE 1, 2, and 3 (34 %-decrease)
- The amount did not change at elevated temperature


Change of total quantity of HTS and TS in COPE



# CONCLUSIONS

- Usage of cyclodextrins provided a possibility to use olive pomace as a functional food ingredient.
- Potential product can be stored at room temperature in the daylight.
- Product cannot be exposed to elevated temperature.
- RAMEB and HPB could be considered the excipients of choice.



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- **Gastrointestinal stability**
  - **Different extraction methods**
  - **Bioaccessibility**





# THANK YOU FOR YOUR ATTENTION!

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