

# COMBINING UNTARGETED, TARGETED AND SENSORY DATA TO EVALUATE FOOD QUALITY CHANGES DURING STORAGE

*A case study on shelf-stable strawberry juice*

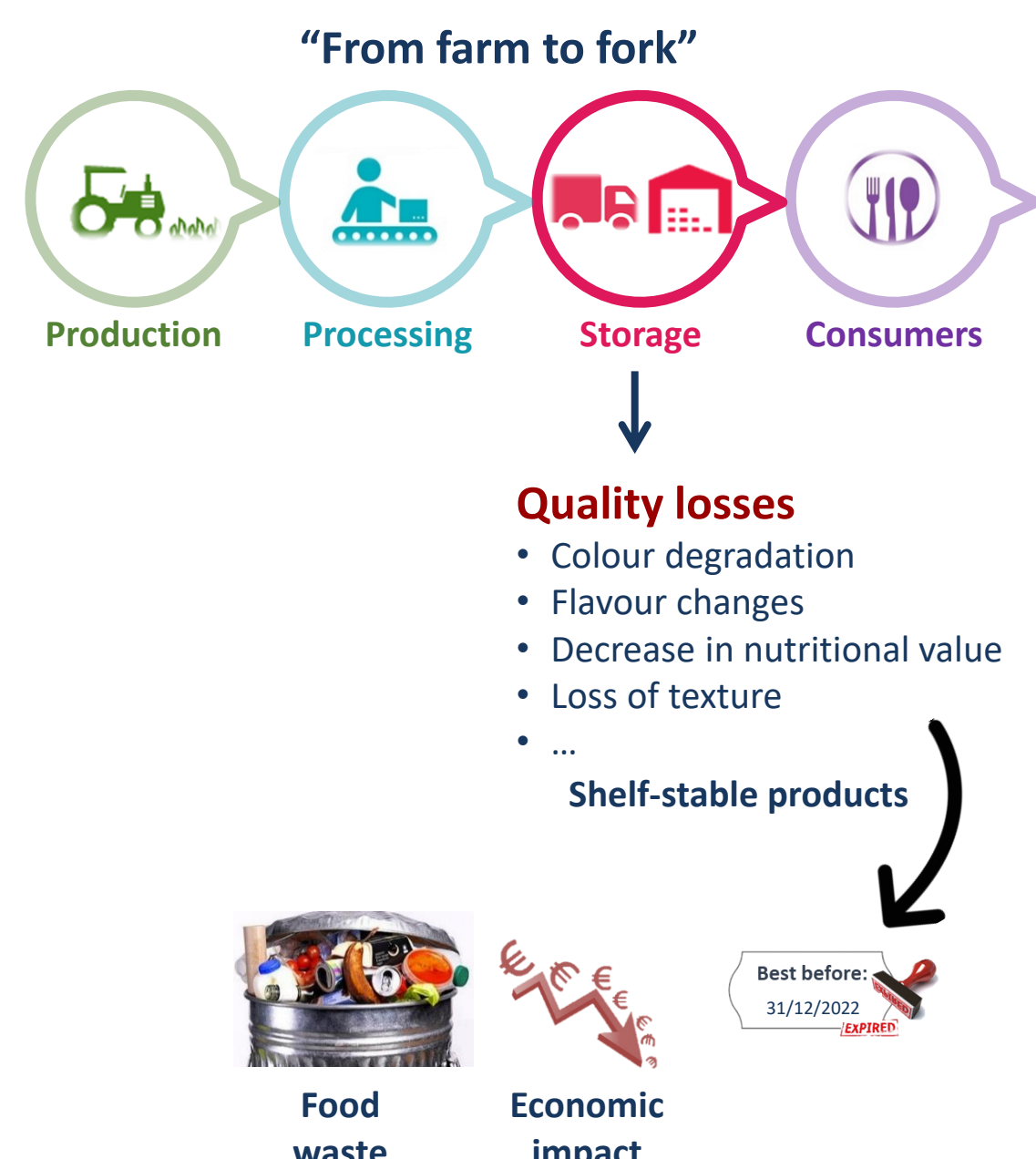
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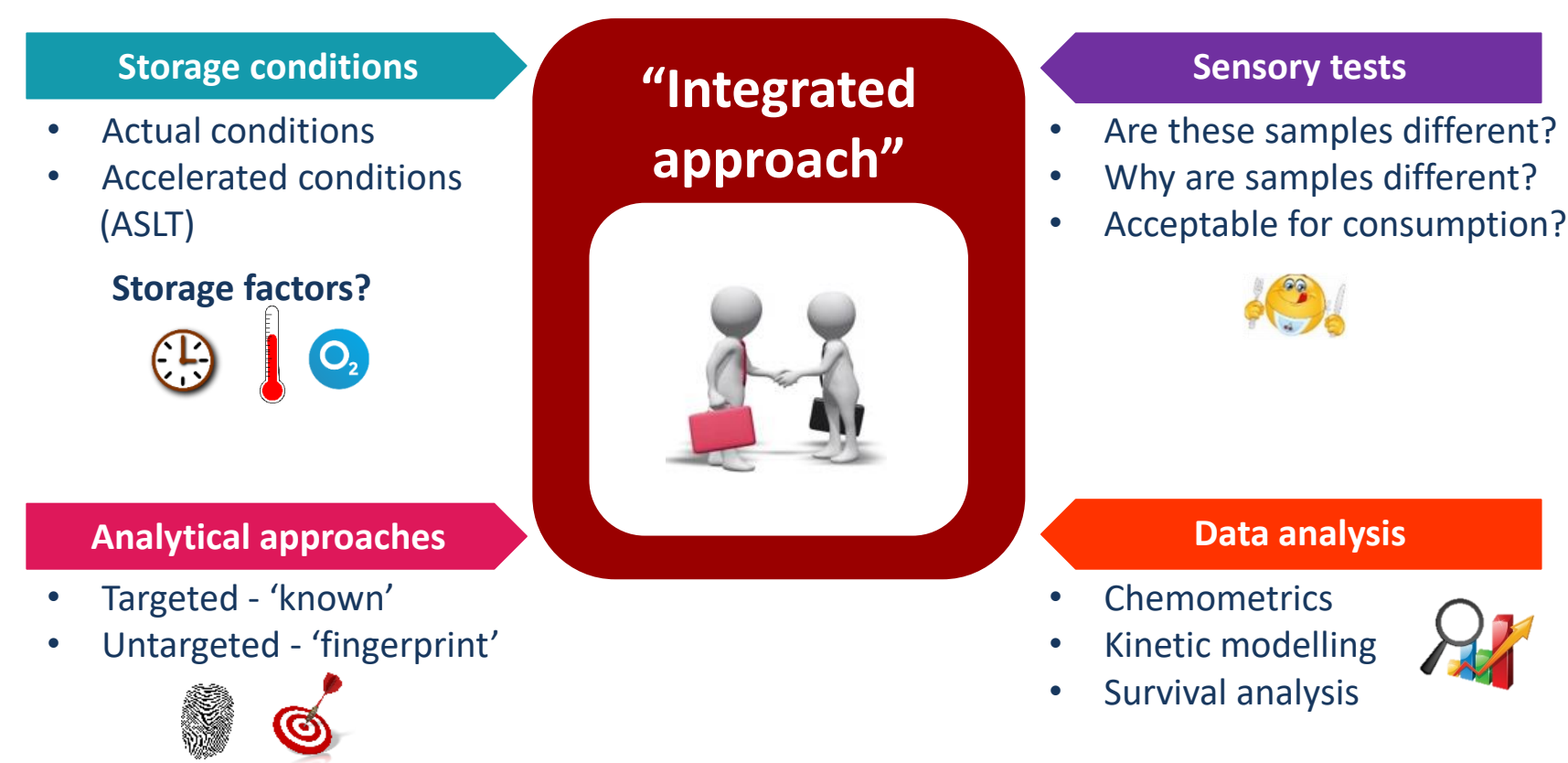


## Background

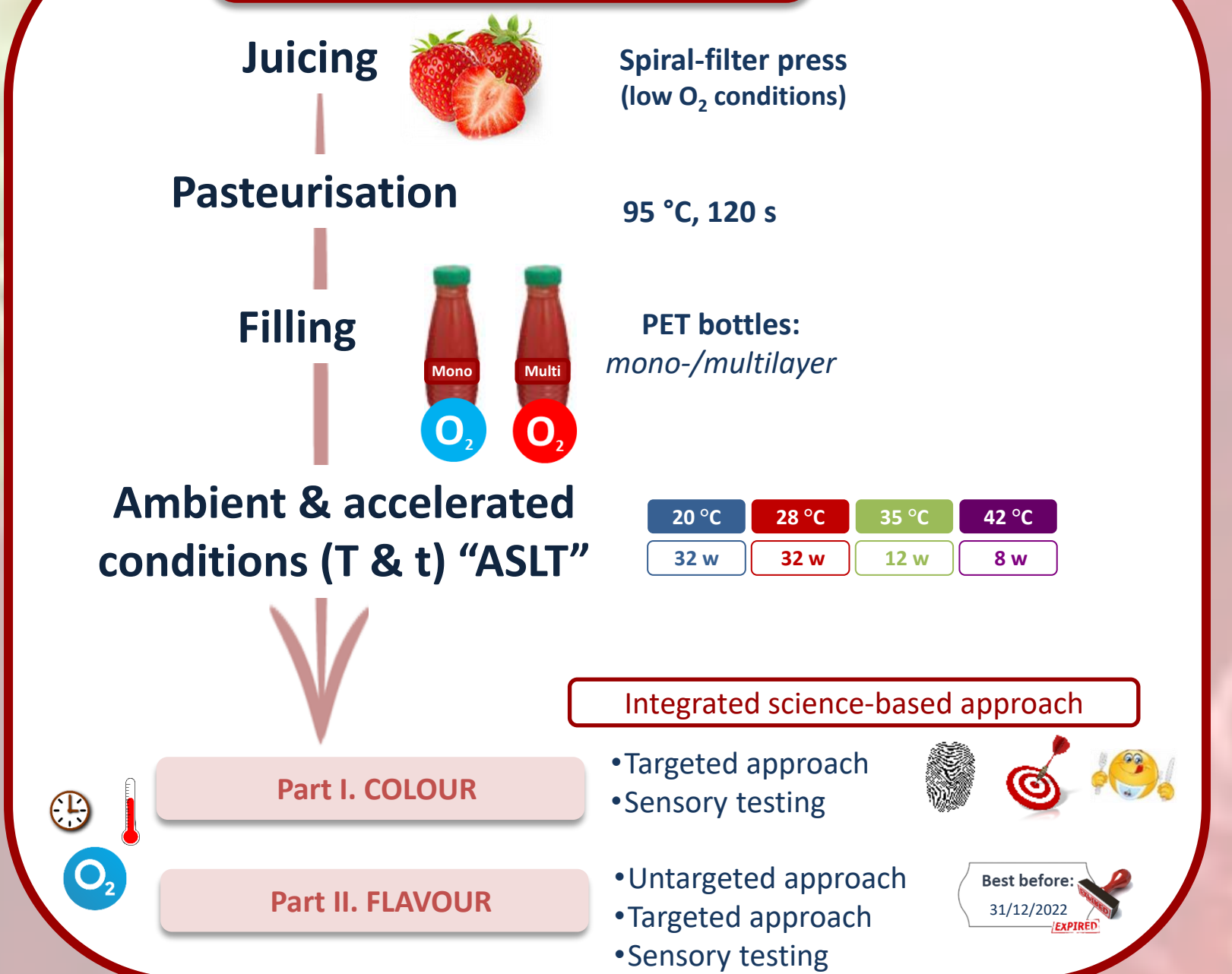
### FOOD QUALITY CHANGES



### HOW TO STUDY FOOD QUALITY CHANGES?



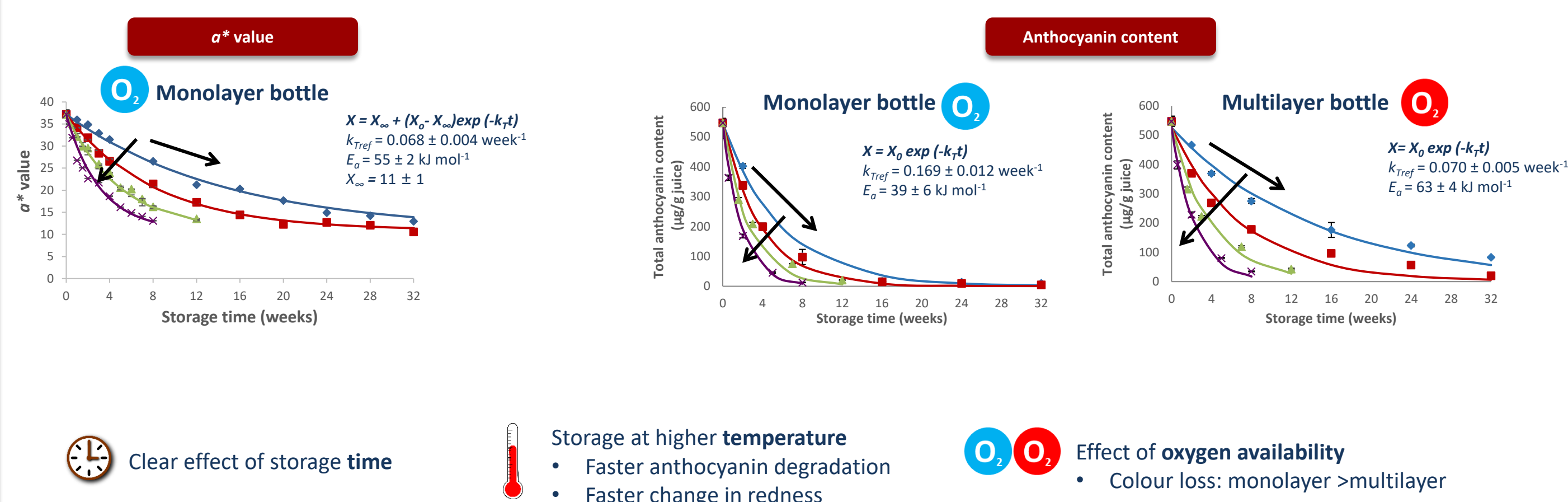
## Approach



## Results & discussion

### Analytical approach

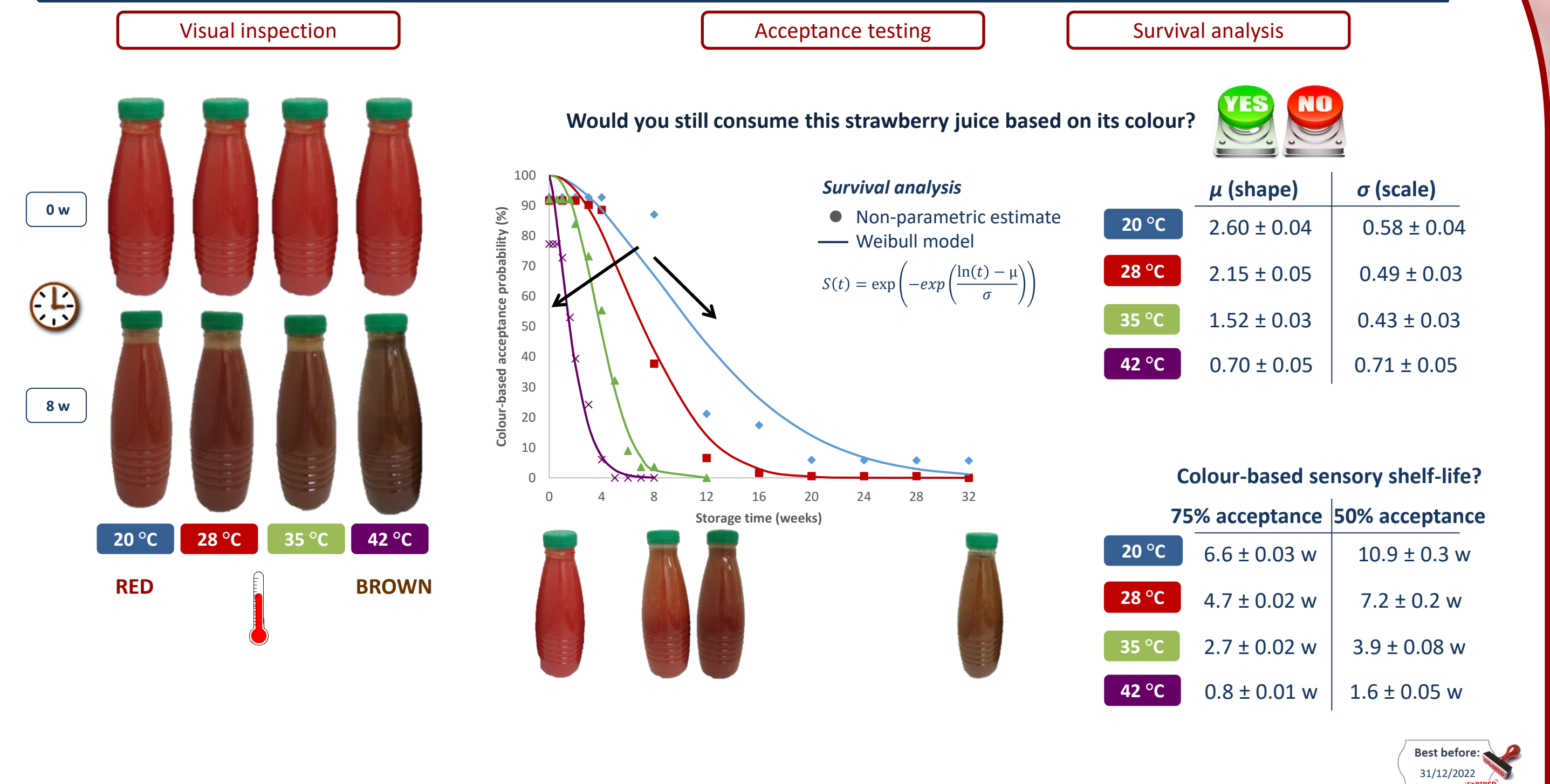
Anthocyanin content    Ascorbic acid content    CIE L\*a\*b\* values    Kinetic modelling ( $k_{ref}$  &  $E_a$ )



### CONCLUSIONS

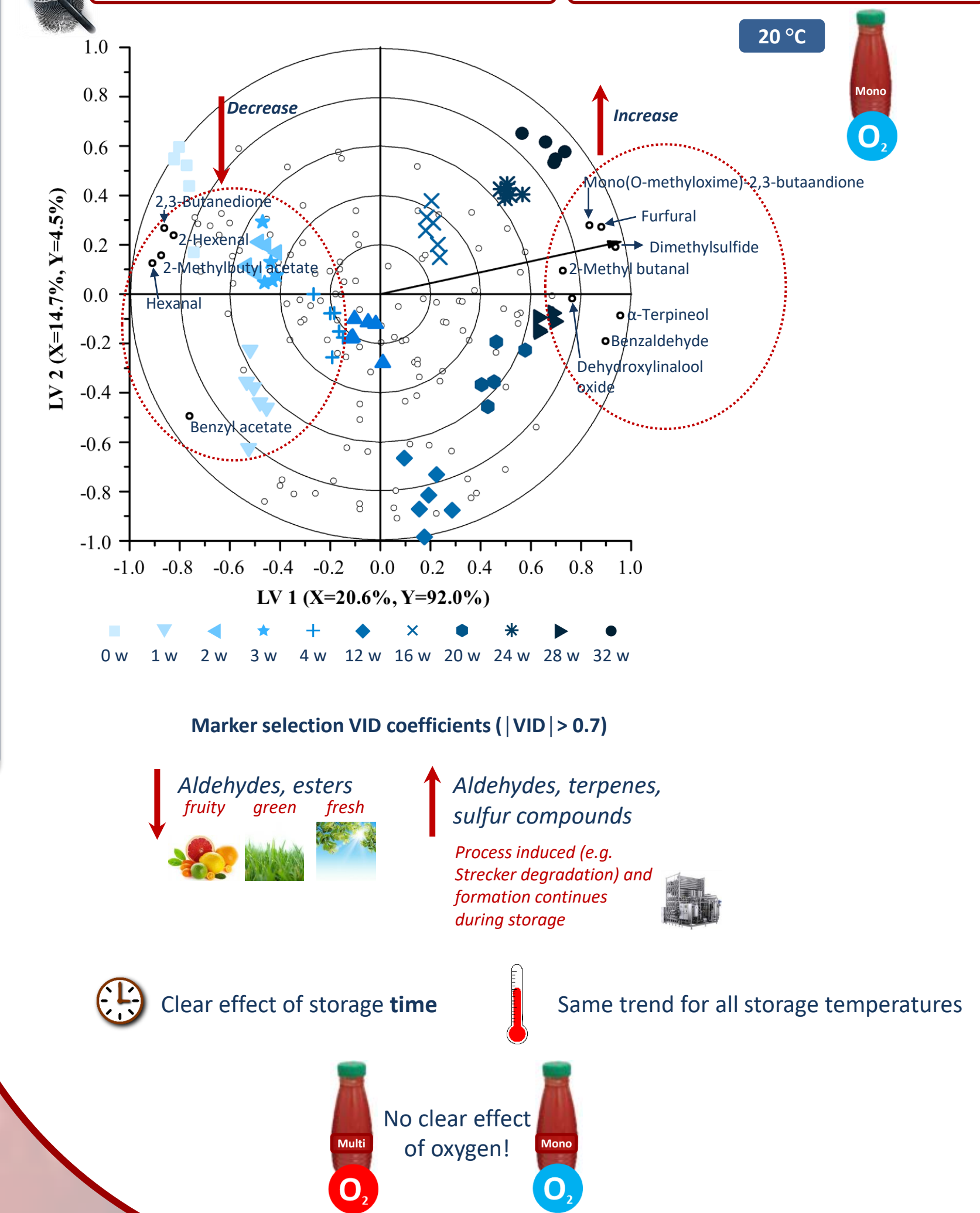
- Colour evolves during storage
  - Negative effect of temperature abuse storage and high oxygen availability
  - Potential of ASLT!
- Colour changes are shelf-life limiting
- Shelf-life:
    - Reached fast during storage
    - Depends on acceptance limit and temperature
- Importance of consumer acceptance tests for shelf-life investigations

### Sensorial testing

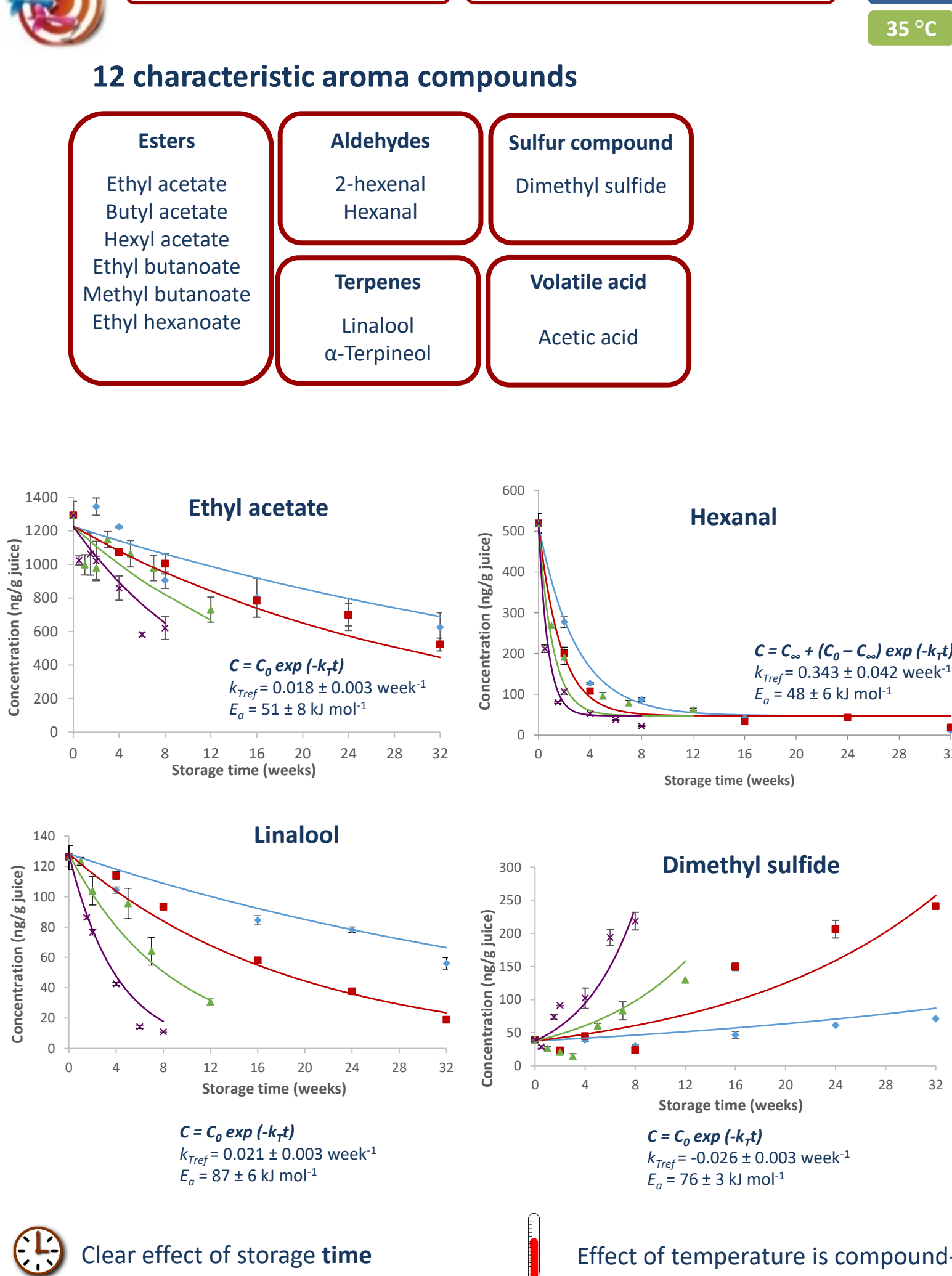


### Analytical approach

Untargeted GC/MS fingerprinting approach    Chemometrics (PLS regression)



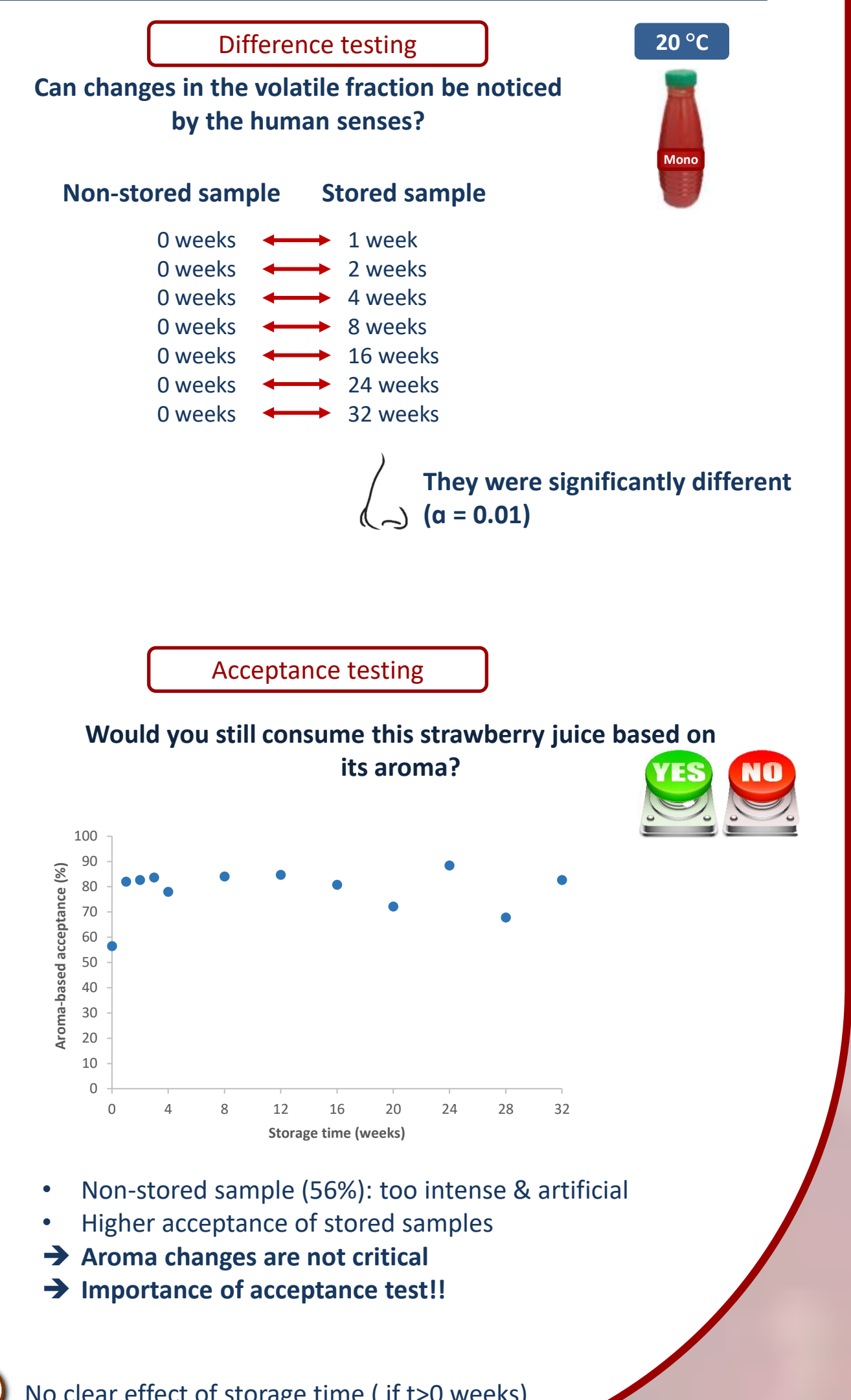
Targeted GC/MS approach    Kinetic modelling ( $k_{ref}$  &  $E_a$ )



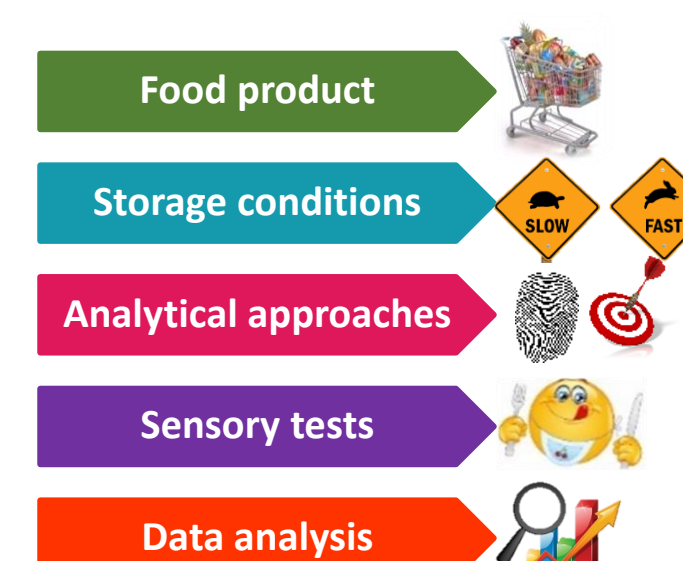
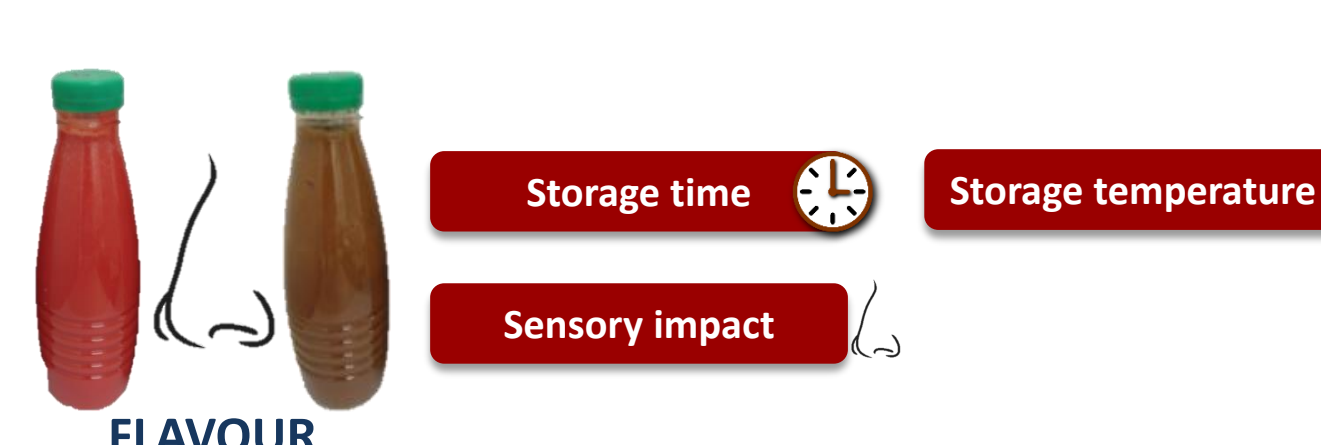
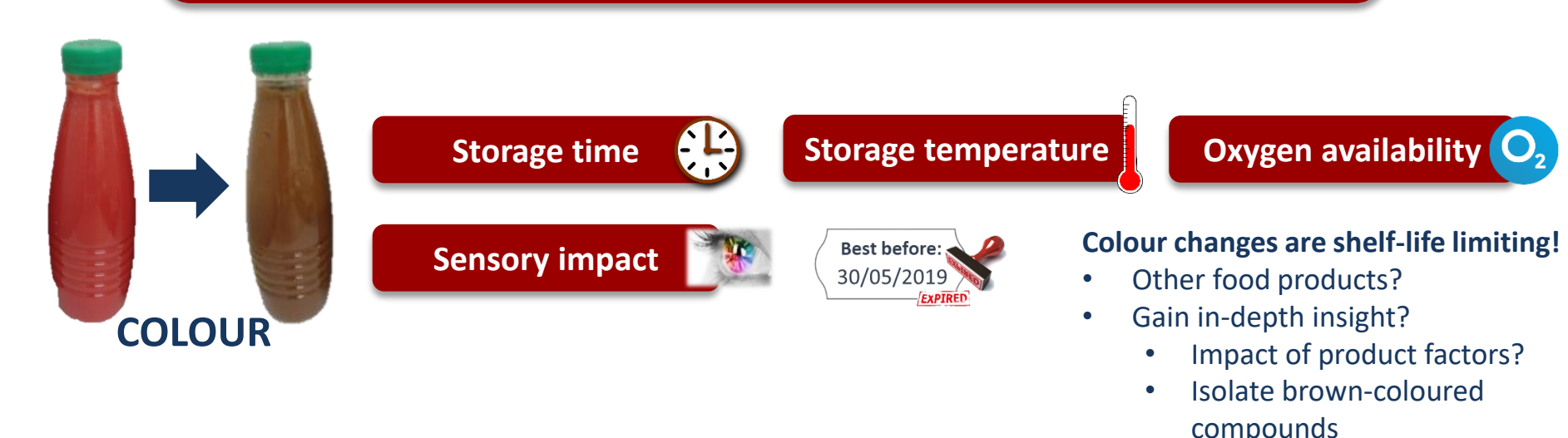
### CONCLUSIONS

- Flavour evolves during storage
  - Effect of temperature and oxygen availability?
  - Potential of ASLT!
- Flavour changes are not shelf-life limiting
- Importance of consumer acceptance tests for shelf-life investigations

### Sensorial testing



## Take home messages



Potential of an integrated and science-based approach to study and evaluate quality changes during storage and to predict a product's shelf-life



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