

Application of Oscillatory rheology in long-term stability studies of minimalist emulsion

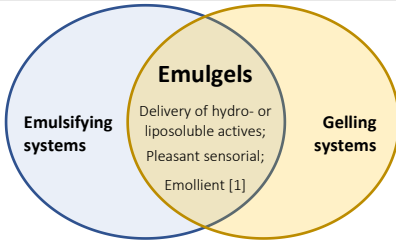
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Introduction:



Rheological measurements provides important information about how the interaction among different ingredients of emulsions may affect their microstructure, sensory texture and long-term stability [2].

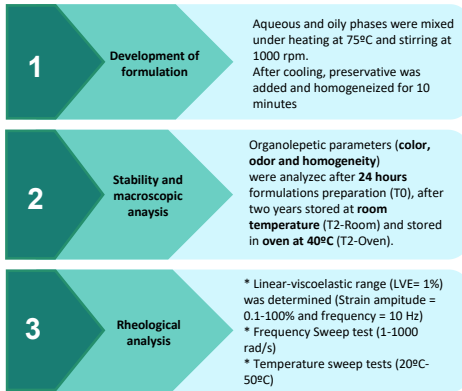
In oscillatory rheological assays [3], typical measured parameters are:
 > Storage modulus (G') = conservation of energy by the system (elastic behavior)
 > Loss modulus (G'') = deformation energy used by the sample during the shear process (Viscous behavior)

This study aimed to evaluate long-term stability of emulgels through their macroscopic and rheological properties

Materials & Methods:

Table 1. Percentual composition of devolped formulation (w/w)

Inci name	%
Acqua	sq
Carbomer	0.90
Vegetable Oil	9.50
Cetearyl alcohol	0.50
Parabens (and) phenoxyethanol	0.50



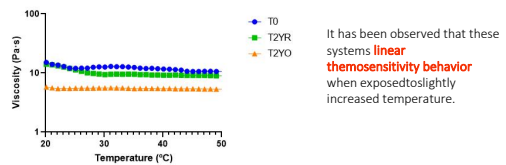
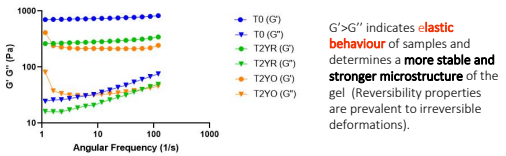
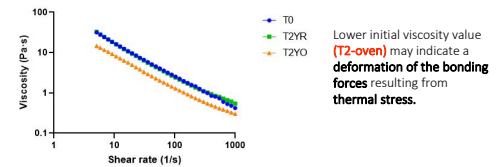
Results & Discussion:

Figure 1. Macroscopic aspects of formulations after 24 hours (T0) and two years (T2 - room and T2 -Oven) their preparations



It was observed that long-term thermal stress conditions accelerated the changing processes of the organoleptic parameters studied.

Rheological analysis



Conclusions:

- > In long-term, thermal stress conditions accelerated the changing processes of the organoleptic and rheological parameters.
- > Elastic behavior of formulations T0 and T2-room implies a more stable and stronger microstructure of the gel.
- > The flow properties and viscoelasticity showed that the binding forces of the polymeric chains present in the emulgel are more easily deformed after being subjected to thermal stress conditions (T2-Oven).

Acknowledgements:



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