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## ID625 | Development of an oleogel as a strategy to reduce saturated fats in biscuit filling cream

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**Background:** Food reformulation to improve the nutritional profile is a key strategy to promote balanced diets and offer additional benefits but the addition, substitution, or elimination of ingredients can affect functional and sensory properties. This work aimed to improve the nutritional profile of a biscuit filling cream, by creating an oleogel with reduced saturated fats.

**Methods:** High-oleic sunflower oil was used as the liquid oil phase and two natural waxes (rice bran wax (RBW) and candelilla wax (CDW)) were tried as oleogelators at varied concentrations (2-14%). Oleogels were added sugar and cocoa powder to make the creams. Textural profile analysis, oil binding capacity (filter paper method) and microstructure (polarized light microscopy) of oleogels and creams were assessed. Total saturated fat content (gas chromatography with a flame ionization detector) was evaluated in experimental and commercial biscuits.

**Results:** The hardness of filling creams, simple oleogel and oleogel with sugar was similar: as oleogelator's concentration increases, oleogel's hardness increases (not proportionally). 14% RBW (0.04%/h) and 10% CDW (0.03%/h) creams had the lowest oil migration rate, with a final oil loss <2% after 5 days for both. CDW oleogels had a feather and needle-like structure, forming a continuous network and RBW oleogels had a spherulitic structure without a continuous network. Micrographs of the oleogels with sugar showed white, shiny structures, while those with cocoa particles were brown, opaque and homogeneously distributed throughout the network. The most promisor cream was prepared with 14% RBW. Experimental biscuit's saturated fat content was ~50% lower than commercial biscuit's value ( $9.7 \pm 0.7$  g/ 100g vs.  $19.9 \pm 0.5$  g/ 100g).

**Conclusions:** The high unsaturated fat oleogel-based filling cream developed shows potential to replace traditional high saturated fat creams. This strategy helps enhance confectionery foods, offering health-conscious consumers indulgent, yet nutritious snacks.

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