

## USE OF YELLOW FOOD DYE FROM SAFFLOWER PETALES IN PRODUCING OF CAMEL

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Color is the first quality indicator of the food product. Candies based on synthetic dyes are loved by children even from a young age, but because of their negative effect, the question arises of replacing synthetic dyes with natural ones. Safflower plant from Asteraceae family is perspective plant for obtaining natural dyes. The purpose of this paper presents the scientific study of the efficiency of using the natural yellow dye - YFDS (yellow food dye from safflower), obtained from the petals of the safflower petals (*Carthamus tinctorius* L.) on the production of caramel. **Preparation of Yellow Food Dye from Safflower.** Separation of yellow and red natural dyes from the petals of safflower was performed according to [1], after the YFDS liquid concentrate was evaporated at dried under vacuum. **Prepared of caramel mass:** Caramel samples were obtained based on glucose syrup, by homogenizing sugar, water and anti-crystallizer. Mixtures were subjected to heat treatment at a temperature of 155°C. At 115±2°C, adding citric acid and YFDS. After cooling, caramel masses was poured into molds to achieve the desired appearance and shape. **HPLC-method:** HPLC method was carried out using a Shimadzu "Provenience LC-2030C 3D-Plus", with integrated Photodiode Array Detector (PDA), on a "Phenomenex" reversed-phase C18 column, with the gradient elution technique through two mobile phases: water, containing 0.1% (v) acetic acid (Phase A) and acetonitrile containing 0.1% (v) acetic acid (Phase B). **Prepared of caramel samples:** Sampels of caramel were desolved in 100 mL of distilled water. Resulted solutions were filtered through PES filter with 0.22 nm pores.

The obtained HPLC chromatograms demonstrated that the YFDS dye is suitable for its use as a natural dye in the production of caramel. The peaks obtained in the caramel samples demonstrated that the three chalcones (hydroxysafflor yellow A, anhydrosafflor yellow B and precarthamin), which are contained in the YFDS dye in powder form, remain stable during the heat treatment of the caramel mass at high temperatures and in acid medium.

It has been demonstrated that to obtain a caramel, harmless to consumers, yellow synthetic dyes can be replaced by the natural yellow dye YFDS, which does not undergo chemical degradation during the producing of caramel.

**Keywords:** caramel, food natural dye YFDS, HPLC, safflower.

### References:

1. SAVCENCO A., BAERLE A., TATAROV P., IVANOVA R. Process for producing dyes from Safflower petals. Patent of Moldova, MD-1453, issued 31.03.2021.

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