

Waxes content in the selected by-products of sunflower oil production

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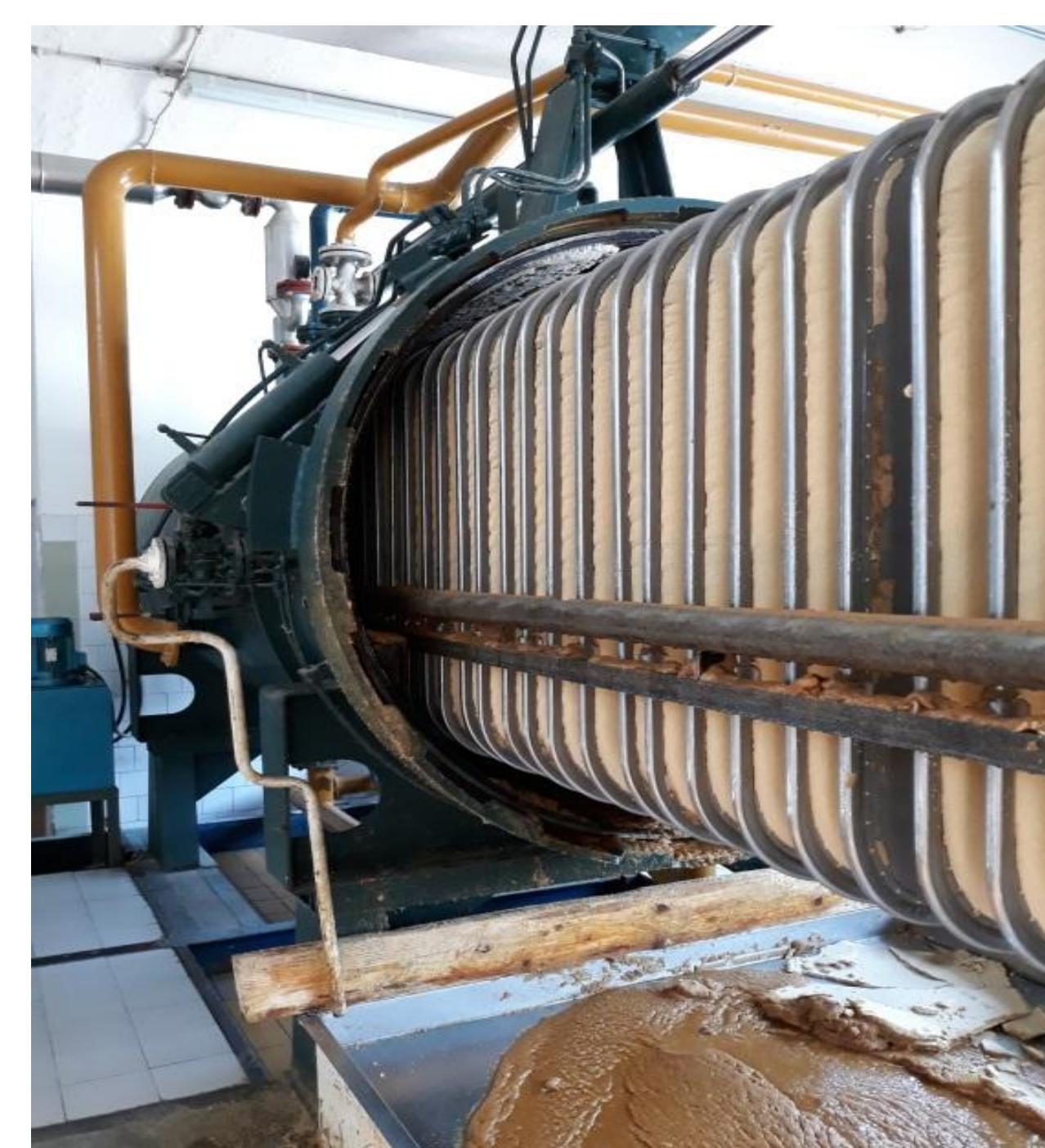
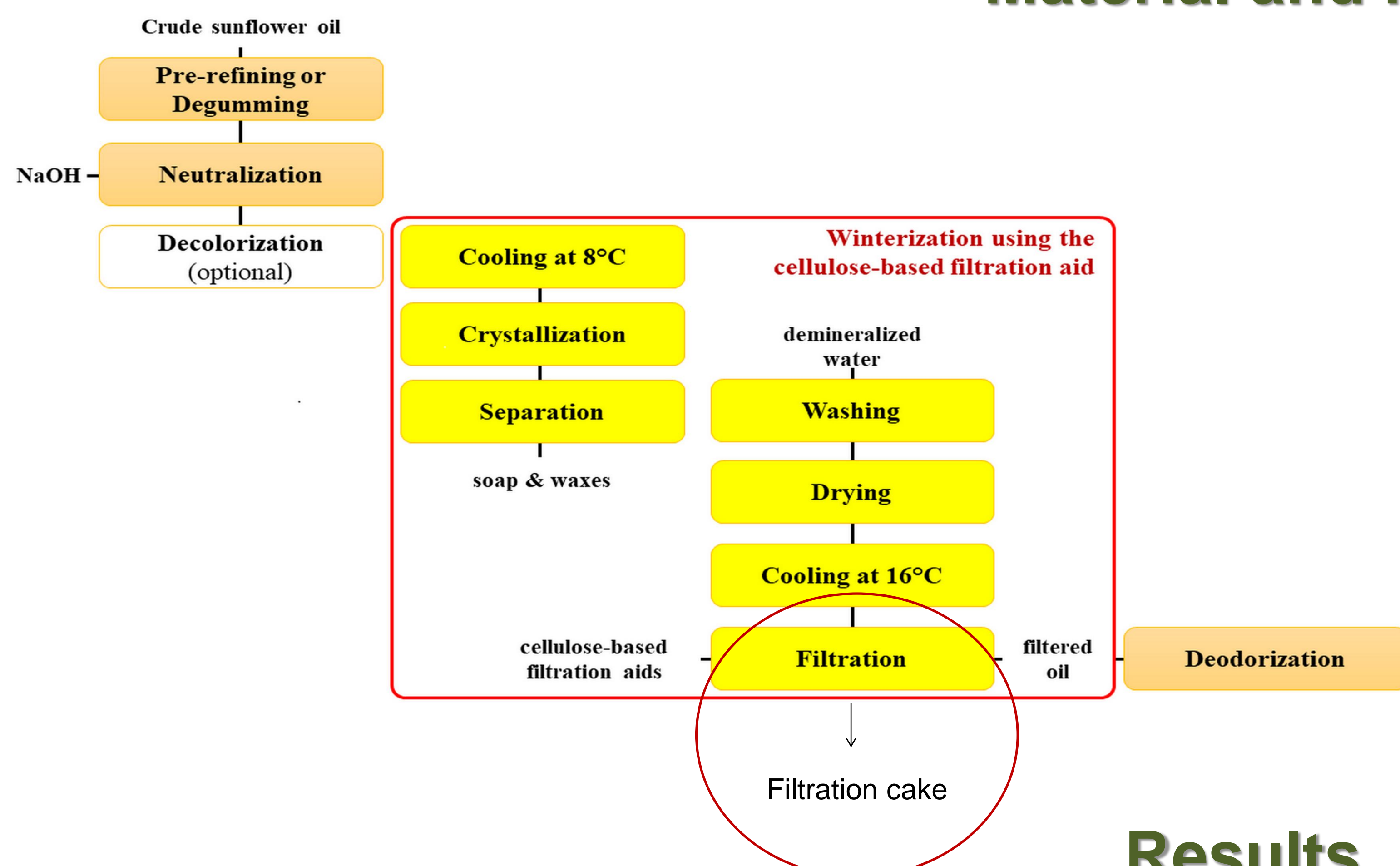
Introduction

Sunflower oil production, depending on the method of oil production, various by-products remain. In the production of cold-pressed sunflower oil, after the pressing process remains cake, as the most extensive by-product, and sediment, after oil purification, usually by sedimentation and/or filtration. The production of refined sunflower oil is much more complex. Namely, after chemical extraction the oil is refined through several phases. After each of the phases, different by-products are created. These by-products are most commonly used as animal feed and in the production of biodiesel. However, due to their chemical composition, some of these by-products can be potential raw materials for the food and pharmaceutical industry.



The aim of this paper is to investigate wax-rich by-products that may have further food and cosmetic applications. Sunflower oil sludge and filtration cakes were tested. Determination of the total wax content was done by the gravimetric method, consisting of two phases: cold extraction with hexane and warm extraction with ethanol.

Material and methods



Results

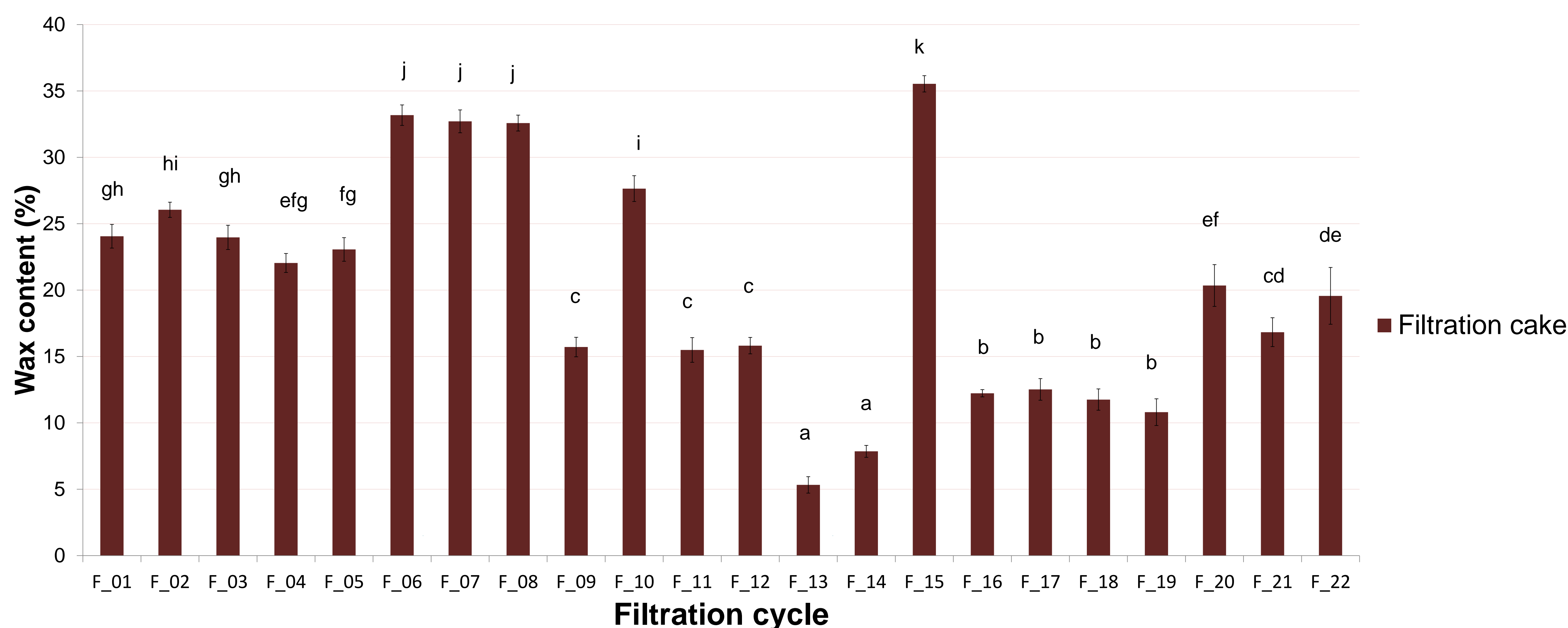


Figure 1. Wax content in the filtration cakes after 22 filtration cycles

Conclusions

Sunflower oil sludge contains 0.77% of waxes, while the average value of the wax content determined in the filter cakes was 20.23%. The obtained results indicated that the filter cake represents a better waxes source, and therefore its application can be significant in the food and cosmetic industry.