

Filtration of Edible/Vegetable and Animal Oils, Then & Now. “What is New”

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When one is continuously focused on new applications, bigger capacities and the ever increasing demand to improve, it is sometimes forgotten that many of these issues have already been seen and addressed in the past.

The oil industry continues to focus on three major issues: Yield, yield and yield, however, it was not so different back in the early fifties. In 1953, Hercules Filter Corporation wrote proudly that they had installed leaf type filters to replace filter presses (plate and frame) in the attempt to increase the efficiency, improve safety while lowering the labor cost and decreasing the oil losses in the spent filter cake. The fact that the oil loss in the cake was lowered by approximately 5 % was seen as a major achievement.

Not long after this success, the industry was confronted with another new attempt to improve. This time it was the process of hot water washing of the spent filter cake. This is called Thomson washing. While a very messy process, it's claim to fame was another 10-15 % reduction of oil loss in the spent cake.

This process was quickly followed by solvent washing of the cake on the leaf filters, but this procedure required the filters to be placed in the extraction area because of explosion danger

Another topic was, and continues to be, the use of filter aids to improve the filtration of various applications in oil processing.

The use of filter aid should make us happy since we can make even the most difficult products filterable.

Another important issue is the need for increased plant capacity. Back in 1975, we viewed a plant with 100 MT/day refining capacity as a large facility. Today we are looking at new green field plants having 2500 MT/day, or more, of refining capacity.

With the important discovery that bleaching clay, after being used once, still has bleaching activity left, we again were presented an opportunity to provide even more yield at a lower cost per ton.

Labor costs and quality control requirements were instrumental in creating the necessity for more and more automaton of the plants. With the recent development of placing the filters on load cells, we have minimized the possibility of overfilling the filters with spent clay and thus avoid expensive damage of the filter elements.

Quality and yield developments also led to the issue of which filter to use where. The split was made in main or process filters and safety polishing filters.

While many of the issues remain the same, this information all shows that the industry is very much alive and offers plenty of opportunity to improve.

My first reaction on the use of filters in the bleaching process in 1975 was that it would take at least 5 years for someone to find a better and more sophisticated way to bleach oils. We expected that the industry would want to move away from having to put something in the oil and after it has performed its duty, filter it out again.

Now, more than 35 years later, bleaching clay filtration is more important than ever before, but there will be alternative processing methods in the future, which is certain.

For any questions contact your specialists in edible oil-, fat- and oleo chemical filtration technologies.