

EVALUATION OF COMMERCIAL FRYING OILS BY USING THE OXITEST METHOD

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Frying is one of the oldest cooking method used, either at home or industrial level, and can be utilized for preparing several foods, namely vegetables, meat and fish. However, while frying may impart desired characteristics, undesirable and potentially harmful compounds may also be formed, due to the combined effect of temperature, oxygen and moisture on the frying fat, as well as its interaction with the chemical species found in the substrates. The kind of fat used may span from non-hydrogenated and refined fats and oils, to various tailor made frying oils, the latter being represented by blends of vegetable oils mixed at different percentages in order to achieve the highest stability, while liked by the consumers.

In this work 15 commercial frying oils were investigated for their oxidation stability using the OXITEST method, based on the utilization of new apparatus that allow to monitor the oxidation process in solid and liquid products. The oils had at least one year of residual shelf-life when bought, and the tests were performed on two different batches for each oil. The samples were also characterized for their acidity, peroxide number, p-anisidine value, fatty acid composition, tocopherols and tocotrienols content, absorbance at 232 and 270 nm, and dissolved oxygen level immediately prior to the stability test. The resultant induction times showed a quite wide variability, with 61% the oils having an induction time between 180 and 240 min, 16% below 180 min and only 10% of the oil showing an induction time over 300 min.