Application Note
Edible Oils and Fats

interline
spectroscopic analytical solutions

Introduction

For producers and users of edible oils and fats there are many parameters of interest including Iodine Value (IV), %Trans, FFA, OH value, Moisture, Acid Value, Saponification value and Oxidation. The standard chemical methods used for the analysis are time consuming, cumbersome and requires trained personnel.

FT-NIR analysis is a widely used alternative to standard chemical methods and can quickly and cost-efficiently measure the required components. FT-NIR will provide the analytical result in 30 seconds after the analysis has been initiated. The FT-NIR can be placed in the production and the analysis can be performed by personnel without lab experience.

Analyser: LipidQuant B5

The LipidQuant B5 is based on the latest generation FT-NIR technology and has the following main features:

- Cutting edge spectral performance and best signal to noise ratio on the market
- Very easy to operate and maintain
- Optimised software suite with InfraQuant and Horizon QI
- Very low maintenance costs. The LipidQuant B5 has no scheduled maintenance

Analysis:

The sample is poured into a glass vial, which is placed in a heated sample compartment. The sample is left to heat to desired analysis temperature and when the temperature has been reached the analysis is initiated. The analysis result for multiple parameters is obtained in 30 seconds.

The heated sample compartment is temperature controlled and this means that the sample is always analysed at the correct temperature. Controlling the temperature means that effects from temperature fluctuations are reduced.

See a video presentation of the LipidQuant B5 on our homepage: www.q-interline.com and experience how easy it is to perform the analysis on the LipidQuant B5.

Calibration

The LipidQuant can be used with customised calibrations, optimised to the customers own products. Customised calibrations are made by adding a number of samples from the actual production line to a set of starter calibrations from Q-Interline. The calibrations are developed against standard reference methods.

Calibration Performances, Example

The performance of the different calibration models can be seen in table 1.

Parameter	Range	SEP	Repeatability
IV	0-190	0,25-0,82	0,08-0,15
%Trans	0-15	0,7	0,1
	15-60	1,6	0,6
Moisture%	0-0,5	0,05	0,01
Acid	150-450	0,5-1,1	0,12
FFA%	0,05-5,0	0,12	0,03

Table 1: Performance of the LipidQuant B5

Conclusion

The LipidQuant B5 is designed for analysis of liquid samples e.g. edible oils and fats. The LipidQuant B5 will measure the edible oils and fat samples for parameters like Iodine Value (IV), %Trans, FFA, OH value, Moisture, Acid Value, Saponification value and Oxidation in 30 seconds after the analysis has been initiated..

The LipidQuant B5 can be placed in the production or in the lab. The intuitive software and the ease of use means that the analyser can be operated by plant personnel with limited or no lab education.