

NIRFlex N-500 Calibration for Milk



Calibration is a question of experience. The Büchi pre-calibrated applications relieve you completely from that task. On the other hand you are not limited. The major Büchi advantage: you can use our pre-calibrations or you can calculate your own with NIRCal 5.0.

Uses

Fast and accurate simultaneous analysis of several parameters on milk using Büchi NIR-Technology. Rapid availability of defined quality criteria is vital for efficient production and quality control. Loss of production is avoided and high reproducibility from charge to charge guaranteed.

Reference methods

All the reference chemistry is performed with official methods; e.g. heating oven for solids, Soxhlet for fat, Kjeldahl for Protein...

Requirements for this application are:

- the Büchi NIRFlex N-500
- the Measurement Cell Solids with Petri Dish add-on
- the appropriate computer hardware and Büchi NIRWare

Parameters

A «robust» calibration is guaranteed because more than 80 different samples were analyzed. The following parameters are measured:

| | |
|---------------------------------------|---------------|
| - Total Fat | 0.01 – 4.6 % |
| - Protein | 1.1 – 5.0 % |
| - Water content | 84.5 – 92.2 % |
| - Saturated Fatty Acids | 0.03 – 4.68 % |
| - Mono & Poly unsaturated Fatty Acids | 0.01 – 2.34 % |

Basis of calculation

The Büchi Chemometric software NIRCal® is used in the NIRFlex N-500 parameter predictions. NIRCal® is a proven and tested software tool with comprehensive calculating possibilities.

Calibration of properties in milk by NIRFlex N-500

| Parameter | No. of samples for calibrations | Calibration range [%] | SEP | R-Coefficient |
|-------------------------------------|---------------------------------|-----------------------|-------|---------------|
| Total Fat | 86 | 0.01 – 4.6 | 0.11 | 0.995 |
| Protein | 87 | 1.1 – 5.0 | 0.14 | 0.953 |
| Water content | 64 | 84.5 – 92.2 | 0.34 | 0.967 |
| Saturated Fatty Acids | 89 | 0.03 – 4.68 | 0.082 | 0.995 |
| Mono & Poly unsaturated Fatty Acids | 83 | 0.01 – 2.34 | 0.063 | 0.985 |

Reliable

An accurate robust calibration has been established over a wide and comprehensive calibration range using samples from many different sources.

Precise

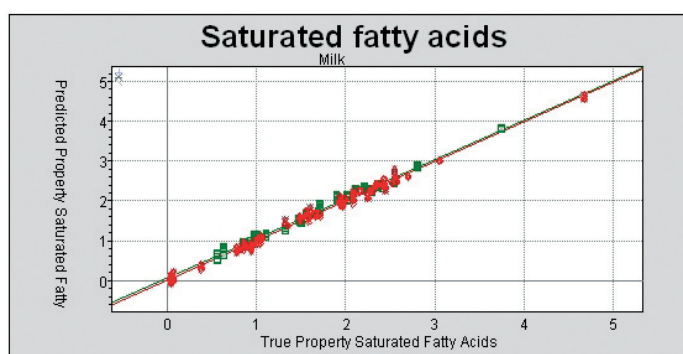
The precision of a calibration is judged by the standard error of the prediction (SEP) and the regression coefficient of the calibration fit. A regression coefficient close to 1 is optimal for the precise prediction of new samples.

Flexible

The milk application for the NIRFlex N-500 is ready-to-use. It allows results to be generated from Day One. With the necessary experience in Chemometrics, the user can adjust the calibration to a different sample matrix – alone or with our support.

Required hardware:

- Büchi NIRFlex N-500
- Measurement Cell Solids with Petri Dish add-on
- PC-installed Büchi software NIRWare



Order No. N555-509

Pre-calibrated milk application

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