



Application Note AN # 290

FT-NIR Quality Control of Greek Yogurt

The worldwide sales of yogurt have shown a dramatic increase in the past years. Yogurt is a cultured product with a short shelf life and yet not difficult to produce, but high throughput is required considering the small unit size and low profit margins. In Western Europe and the US, strained (Greek) yogurt has become increasingly popular because it is richer in texture than unstrained yogurt, and higher in protein.

Greek Yogurt

Strained yogurt, yogurt cheese or Greek yogurt is a yogurt which has been strained in a cloth, paper bag or filter to remove whey, giving a consistency between that of yogurt and cheese, while preserving yogurt's distinctive sour taste. Like many yogurts, strained yogurt is often made from milk which has been enriched by boiling off some of the water content, and sometimes by adding extra butterfat and powdered milk.

FT-NIR Analysis

With FT-NIR spectroscopy the quality of yogurt can be easily and fast controlled in regards to the common parameters fat, total solids and especially protein. Process engineers can make decisions in less than a minute, because of the fast and accurate analysis of the approximates.

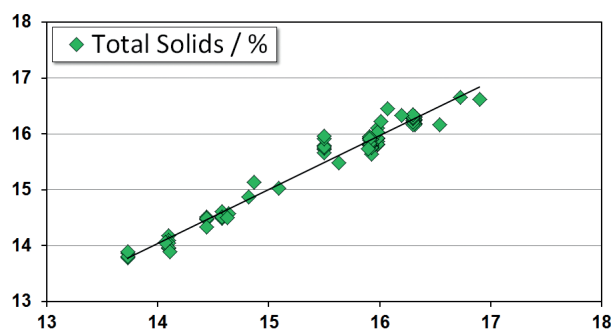
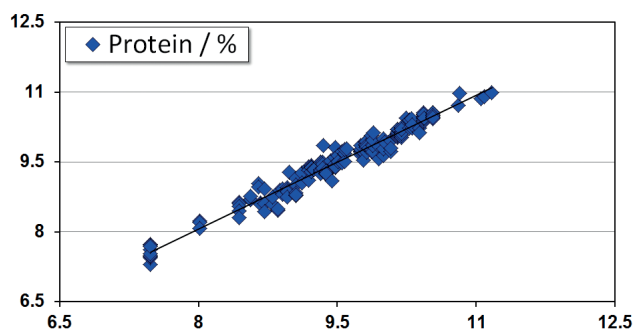


Figure 1: Yogurt sample during measurement in a Petri dish

The sample is simply put into a Petri dish which is placed on the instrument and scanned while rotating. This easy analysis can be carried out by lab and process personal in less than 40 seconds (as fast as you can sample).

This procedure can be established also in the production area close to the separator and allows fast decisions based on accurate values for the constituents of interest.

NIR Validation Results vs. Reference Values



Service & Support

Bruker Optics is staffed by expert scientists and engineers with an in-depth knowledge of instrumentation and applications in the dairy industry. Our product specialists are available to assist you with method development either remotely or in your lab. FT-NIR application scientists will assist you in the selection and use of sampling accessories, choice of optical components and software operation. We offer customized instruction and support packages to fit your needs.

Bruker Optics spectrometers are designed to provide years of trouble-free operation, but should a problem occur, a network of Bruker companies and representatives through-out the world are ready to promptly respond to your needs. Professional installations, comprehensive applications support as well as high standard of post-delivery service are commitments Bruker Optics makes to each of its customers.



FT-NIR Spectrometers: Bruker Optics offers various FT-NIR spectrometer models for lab, at-line and on-line applications:

TANGO



FT-NIR analyzer for routine use in the lab.

MPA



Multi Purpose Analyzer for maximum flexibility.

MATRIX-I



At-line analysis with optional NEMA4/IP66 protection.

MATRIX-F



Process monitoring with probes and measurement heads.

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