

Figure 24.35 Superimposed triglyceride profiles for milk fat and cocoa butter.

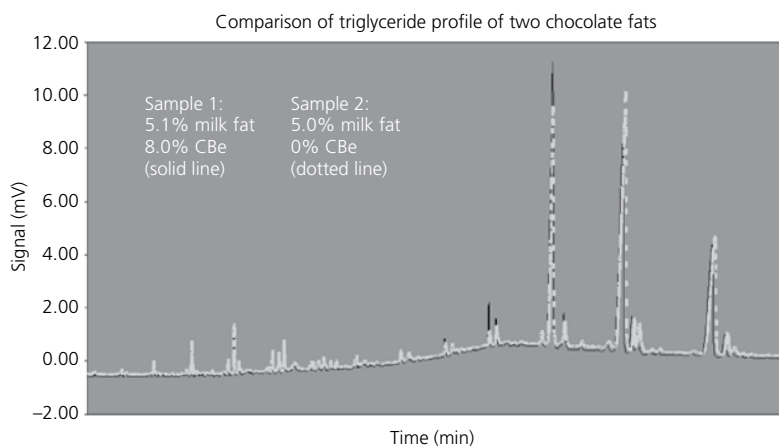


Figure 24.36 Superimposed triglyceride profiles from two fat mixtures. Sample 1 does not comply with Directive 2000/36/EC, Sample 2 is chocolate in compliance with Directive 2000/36/EC.

other complimentary methods exist, for example analysis of the fatty acid distribution (after their hydrolysis from triglycerides and steric esters), tocopherols, sterols and steric esters. When evaluating the data, however, the natural variation in the content of these fatty substances must be always taken into consideration. Existing reference (comparison) data for fats and fat mixtures of known origin and/or known composition are important when evaluating the data from unknown source samples.

24.4 Summary of important analytical procedures in a typical quality assurance laboratory

24.4.1 General

Organisation of sampling, sample storage, sample preparation:

- Sampling technology including random sampling plan and sampling schedule;
- Maintain store of raw materials, semi-finished products, finished products.

24.4.2 Analysis

Organisation of the calibration of laboratory equipment:

- Calibration of burettes (digital),
- Calibration of laboratory balances,
- Calibration of viscometers.

Subject of analysis: general measurements

- pH value;
- Determination of total ash;
- Ash content (conductivity meter);
- Settled and compacted apparent density;
- Colour measurement;
- Flow properties: Determination of viscosity;
- Shrinkage of chocolate by high resolution stress controlled cone/plate system.

Subject of analysis: sensory for raw materials, intermediate products, finished products

- Cut test (cocoa beans);
- Acetone-soluble fraction (lecithin);
- Lipase activity (milk);
- Sensory protocol;
- Triangle test;
- Record complaints for raw materials and intermediate products.

Subject of analysis: sensors for packaging material/finished products, unpackaged

- Robinson test;
- Develop a complaint recording system related to packaging material;
- Set up an archive of quality defects and complaints about packaging materials.

Subject of analysis: visual inspection

- Dirty test of milk powder;
- Set up defect list and defect evaluation table for unpacked products and packaging material;
- Set up defect list and defect evaluation table for unpacked products and MHD (expiry date, minimum durability and best before) for packaged products.

Subject of analysis: water (moisture) content

- Dry matter in a drying cabinet;
- Moist dry matter in a drying cabinet;