# In-line analysis and standardisation

Au2mate – Plant optimisation in the dairy industry by high precision In-line analysis instruments.

Dairy plants are getting more and more complex and at the same time the demands for fully flexible production schedules with rapid recipe changeover in the process equipment are constantly increasing.

New and improved technologies for In-line measurement and analysis of product components in real-time provides new opportunities for optimising on tolerances and production processes.

A good number of process applications taking advantage of the new generation of analysis instruments have been implemented by Au2mate, in Denmark as well as abroad.

The incentives to install a high value add and high precision in-line analysis instrument, would be:

- To achieve an accurate composition in processed milk. (Fat, protein, solids etc.)
- Higher profit with lower tolerances
- Use of raw materials needs to be optimised
- Use of equipment needs to be optimised
- Time saving. No need for post adjustments to achieve required composition.
- Small batches can be produced effectively when standardisation is optimised.

The applications can be split in two different categories. One category can be classified as In-line standardisation, and the other category as Batch standardisation with continuous correction measures.

## In-line standardisation

In-line standardisation takes place by controlling flowrates and addition of ingredients (if any) to achieve a specified target on product specific parameters. Please refer to figure 1 for In-line standardisation.

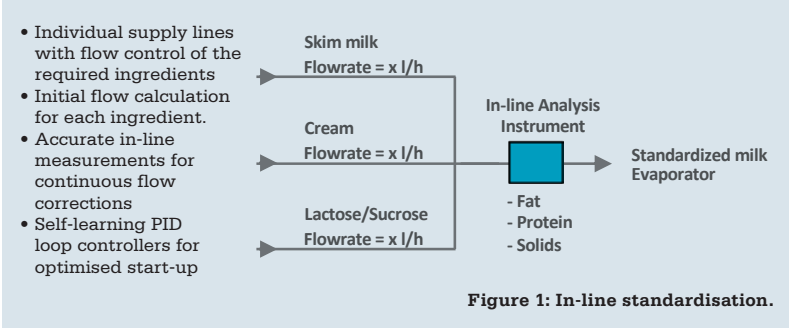


**Figure 1: In-line standardisation.**

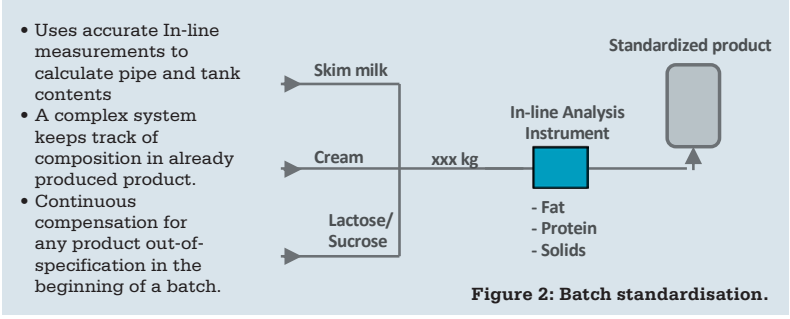


**Figure 2: Batch standardisation.**

The process can be applied in standardisation of fat, protein and total solids directly from e.g. a pasteuriser or a blending system feeding an evaporator. The control system can be delivered as a stand-alone system interfacing to the existing plant control system via communication signals or integrated in the existing plant control system.

## Batch standardisation

In batch standardisation applications, a continuous summation / integration of the product components, e.g. fat, protein and milk solids take place to form a uniquely defined batch. An adjustment of the flow and any addition of ingredients is made to obtain the desired batch specification. Using batch standardisation compensation/correction of out-of-specification product is also possible.
Please refer to figure 2 for batch standardisation.

The process can e.g. be applied for the standardisation of fat, protein and milk solids in a cheese milk tank. The control system can be delivered as a stand-alone system interfacing to the existing plant control system via communication or be seamlessly integrated in the existing plant control system.

## Proactive partner

Moving forward, Au2mate strive to be a proactive partner in the continuous optimisation of the dairies. In case more information on In-line analysis applications is required, please do not hesitate to contact us at www.au2mate.dk or by telephone +45 8720 5050.

**Au2mate**

# AU2MATE

## YOUR PARTNER IN INDUSTIAL IT AND AUTOMATION

Au2mate supplies total dairy automation solutions.

The automation includes all processes and features, ranging from receipt of raw material to delivery of the finished product. Systems control comprising: Instrumentation, PLC, SCADA, MES and Industry 4.0.

Productivity, quality and plant uptime is ensured by way of the total automation solution including training of the users at Au2mate Academy, as well as by a full service package with 24/7 service.

Au2mate services the dairy industry from offices in Denmark, Norway, Sweden, Dubai and England.


AU2MATE 24/7 HOTLINE SERVICE


AU2MATE ACADEMY

Au2mate
PROCESS AUTOMATION PARTNER

Au2mate A/S · Frichsvej 11 · DK-8600 Silkeborg
T +45 8720 5050 · www.au2mate.dk