FOSS

Ground Meat Standardisation

Get more out of your production with High Resolution in-line analysis

ProFoss™

Dedicated Analytical Solutions

Get a clearer picture of your meat production with High Resolution process analysis.

Let your production staff improve your business

Profit opportunities are waiting to be found in your meat production process.

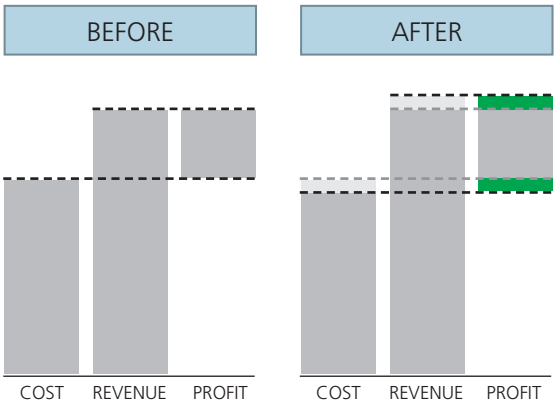
For instance, more accurate control of the fat/lean meat content results can increase earnings significantly. At the same time, improved product consistency can provide new pricing options.

Give your production staff the right tool in the form of a ProFoss™ High Resolution process analysis solution, and they can achieve increased yield and improved consistency.

Users of such solutions report a rapid return on investment with a typical payback time of less than twelve months.

Advantages of process control include improved yield and profit based on:

- Savings on raw materials
- Consistent product quality
- No rework of batches
- Higher value products for your customers
- Increased energy efficiency



Stretch your profit zone: Production costs can be decreased and the higher product consistency will increase your competitiveness.

"FOSS is committed to process analysis because, quite simply, it is the future of food production. Tighter control of production is a sure way for you to improve both profit and customer satisfaction while minimising energy usage."

Peter Foss, President

The FOSS difference – meat industry knowledge and experience

At the heart of any FOSS analytical solution is a simple and enduring concept: To give you just what you need to obtain accurate, timely information according to the demands of your production environment.

This is a principle that FOSS has followed for over 50 years. And that's why today, FOSS is unique in offering dedicated solutions for process analysis and product control. Our knowledge and experience ensures that your process analysis solution is right for your demands and can be applied quickly and easily to your production.

Investing in a process analysis solution

With any process analysis solution you are effectively putting your production in the hands of technology. FOSS is the right partner to provide a reliable solution that will run day in, day out and year after year.

FOSS meat solutions offer:

- ☑ Proven technology for accurate and trouble-free operations
- ☑ User-friendly interfaces allowing anyone in the plant to contribute to process control
- ☑ Service programs offering a range of options to suit your business. Get your service in a timely manner by fully trained local staff onsite and/or remotely through internet

FOSS Total Service Solutions

- FOSS is committed to providing complete and fully integrated solutions
- Our relationship with you is a continuous partnership
- FossCare™ Total Service Solutions are available at multiple levels according to your needs

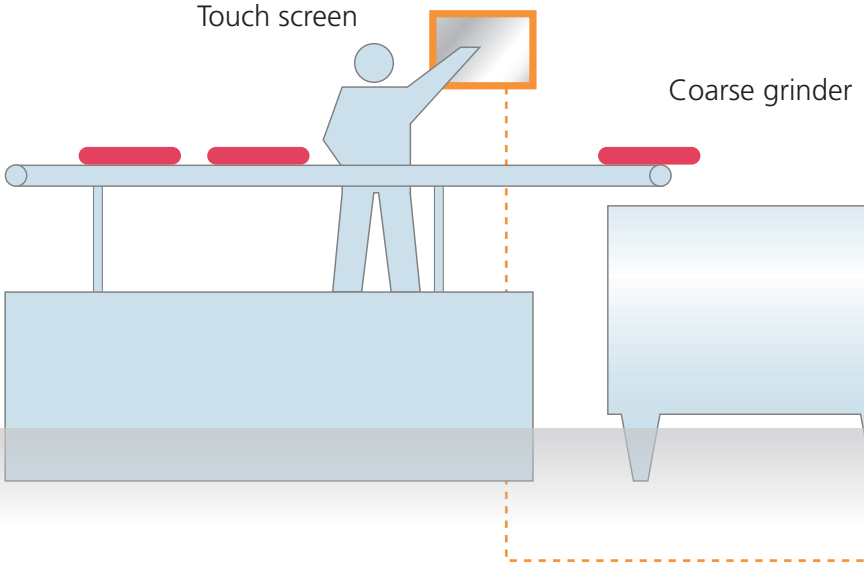
FOSS

- World's leading provider of analytical solutions for the food, agricultural, chemical and pharmaceutical industries
- Helps customers improve profit, product quality and food safety
- FOSS solutions are used for routine laboratory analysis as well as at-line and in-line process control
- Over 90 of the world's top 100 food and agricultural companies use FOSS solutions
- FOSS analysers are analytical solutions dedicated to specific process needs
- Strong global organisation with focus on growth
- Privately owned and financially stable

The total in-line fat standardisation solution

For:

- Consumer packs of ground meat
- Ground meat patty production
- Sausage production
- Salami production
- Mortadella production



Integrated according to your process

The two main elements of the ProFoss™ system are the ProFoss analyser and the FOSS process control software (ProcessTouch™). Additional weight information from your production secures a total solution for fat standardisation.

The ProFoss analyser can be mounted above the outlet tube from the coarse grinder or above the meat transport systems (conveyor), provided there is direct light access to the meat.

ProcessTouch process control software integrates the analyser into your system, configured according to your needs.

ProcessTouch is used for:

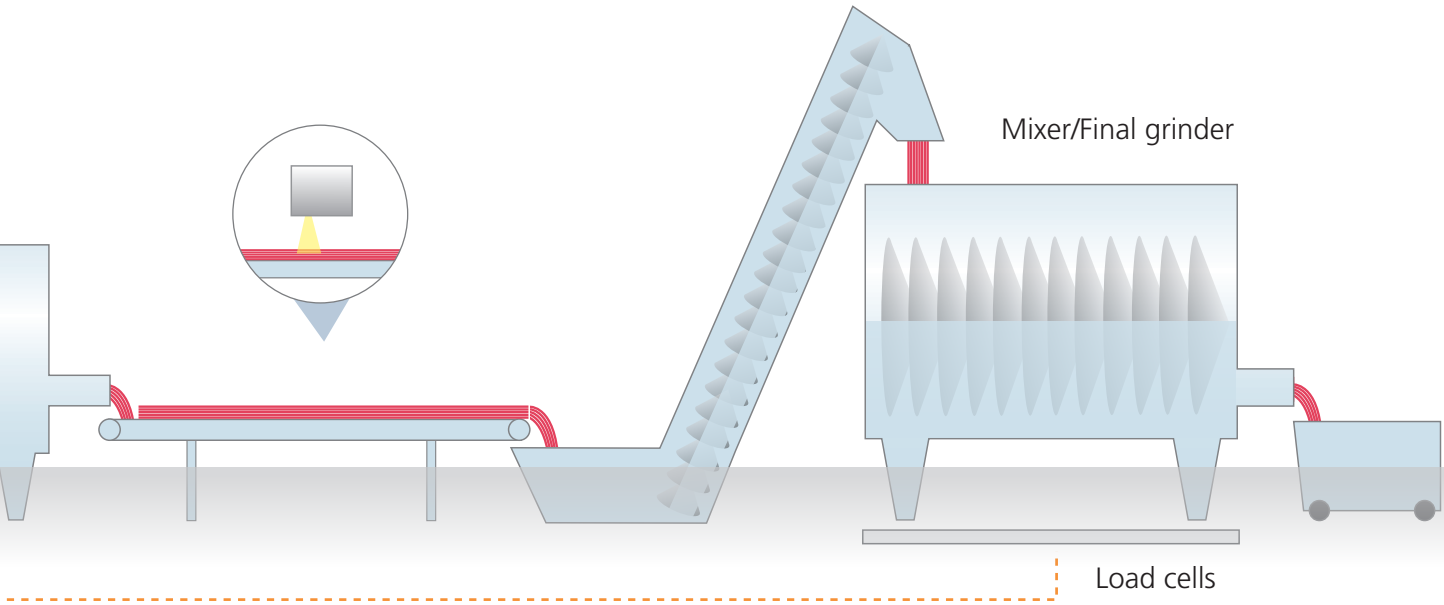
- Recipe handling
- Graphs of target, single measurements and calculated batch fat content
- Continuous calculation of batch progress and remaining volumes of ingredients
- Recommendations to operator on how to reach target

The total ProFoss™ solution for ground meat standardisation consists of:

- FOSS ProFoss™ analyser
- FOSS process control software (ProcessTouch™)
- Touch screen to monitor and control production
- Starter calibration

In addition, the solution can be improved by adding:

- Remote analyser surveillance by FOSS
- Preventative maintenance agreement with FOSS, which will secure outstanding uptime, optimal performance thereby ensuring maximum efficiency for your FOSS solution



Example of use: The ProFoss™ solution can be installed to scan the meat above a conveyor. Several measurements are done during the processing of one batch. The results are displayed on a touch screen. The operator can follow the batch fat percentage and adjust if necessary.

Ease of use

At batch start, the pre-defined recipe is selected and during the batch production, the fat percentage of the scanned volume is monitored. The system provides information about possible adjustments.

In the example, the total batch is defined to be 1100 kg and with a target fat percentage of 26%. After 451 kg have been produced, the average fat percentage is 25.3%.

Red line: Target fat
Blue line: Fat value of individual scans
White line: Average fat of scanned batch volume
Yellow line: Temperature of the meat – the information is from an optional sensor.

ProFoss™ – High Resolution NIR technology

ProFoss™ is unique in employing a near infrared-based analysis technology known as High Resolution diode array analysis. The High Resolution technology ensures accuracy and reliability with measurements based on a high density of data points. ProFoss also includes a dedicated meat sample interface.

Accurate and continuous results

Measurement accuracy is in line with traditional laboratory analysis. However, results are presented continuously rather than a few times per day, giving the opportunity for immediate adjustments to production.

Quick and simple to implement

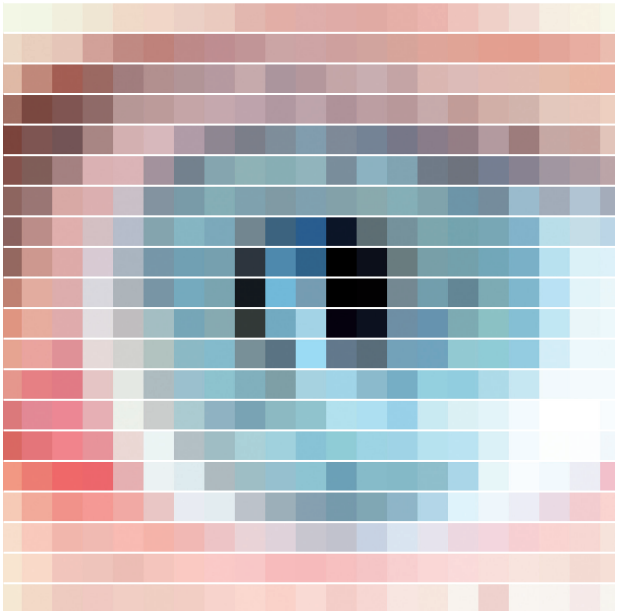
The High Resolution technology behind the accuracy of the ProFoss system also has benefits when implemented. Because measurements can be relied upon to be the same across individual instruments and are highly stable over time, you can reduce the time and costs associated with installation of individual analysers. The standardisation and stability of the solution, as well as the intelligent FOSS calibration tool, ISIcal™, makes it fast and easy for non-experts to develop or expand calibrations and transfer them across units.

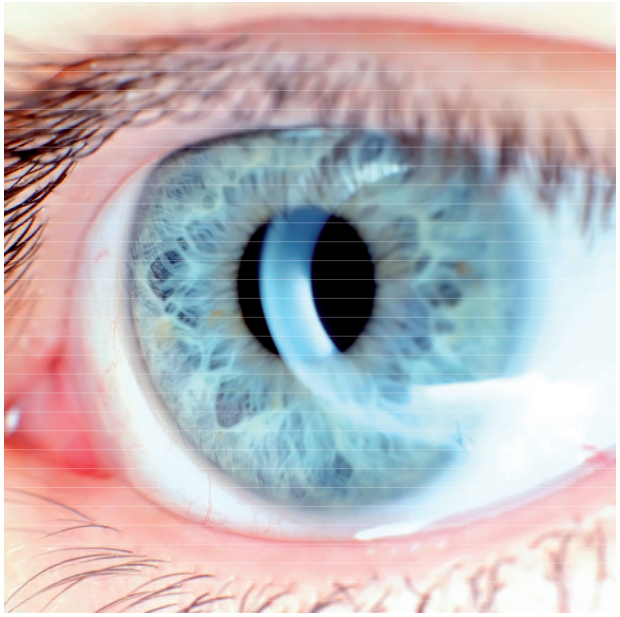
Robust and low maintenance operation

The ProFoss system keeps on running to ensure high uptime and minimal impact on daily production. Once calibrated, there is no need for constant adjustments caused by drift or other weaknesses. The high stability of the High Resolution technology ensures the same accuracy day in and day out without hidden operational costs.

Intelligent calibration tool – ISIcal™

Calibration is done either through WinISI™ or by using the new intelligent calibration tool, ISIcal™. ISIcal requires a minimum of user experience. Each time a reference sample is collected from the process, a button is pressed on the analyser to synchronise the scan with the collected sample. Reference data is added and a calibration is automatically developed (or an existing calibration expanded with the new data). The new ISIcal tool automatically optimises the calibration algorithms by selecting the most reliable model for future use.





High Resolution NIR technology gives you a clearer picture of your process. A high number of pixels (diode sensors) in the spectrum secures a more detailed (accurate) and uniform (repeatable) analysis result.
High Resolution also enables manufacturing of "identical" (standardised) analysers which stay the same over time (no drift).

The value of a standardised High Resolution analyser

A standardised analyser with transferable calibrations significantly reduces the implementation and maintenance costs.

Transferability is the solid foundation required for rapid implementation of an analyser into a complex process environment. Furthermore, once a calibration has been developed, it can be reused on other analysers

The key to achieving this is the resolution of the analysers wavelength scale. The FOSS High Resolution technology has one sensor for each nm measured, securing 100% stability of the wavelength scale.

FOSS support plans

FossCare™ is a partnership, where FOSS helps customers with preventative maintenance, remote instrument monitoring, consultancy, training programs and breakdown support. FOSS technicians work directly with the customer to solve any problem that they encounter, leading to maximum uptime and increased yield.

By participating in a Preventative Maintenance program, focus is moved from "fix it when it breaks" to a predictable and proactive approach, reducing the cost of unplanned downtime and emergency repairs and increasing the equipment reliability and availability.

Remote Monitoring and diagnostics

RINA is a remote instrument monitoring, and diagnostics software that makes it easy for an internal or external expert to precisely configure, monitor and diagnose FOSS instruments from a remote location. Calibration updates and bias corrections are easily handled through the network and the system can be monitored on a daily basis, allowing you to focus on optimising your production.

Ground meat standardisation solutions from FOSS

FoodScan™

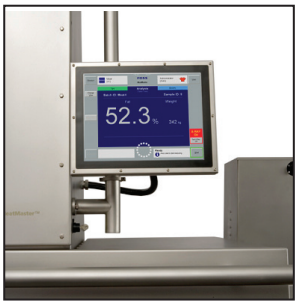
FoodScan™ is placed at-line. It delivers results within 50 seconds from a sample of 180-200 gr. Based on these results, you can decide whether possible adjustment of the batch is needed. FoodScan can also be used for final product control.

Parameters:
Fat, Protein, Moisture, Collagen, Salt

ProFoss™

Installed in-line, the ProFoss™ gives a continuous flow of 'real time' results from scanning the surface of the ground meat coming from the coarse grinder. Based on the results, the operator is guided to optimise the batch content. This semi-automatic solution has a small foot-print. It can be relevant for any type of manufacturers of ground meat based products.

Parameters:
Fat (Protein and Moisture)



MeatMaster™

Using X-ray technology, MeatMaster™ gives continuous 'real time' results based on scanning 100% of the meat passing through the MeatMaster. Any type of raw meat can be scanned by the solution. Automatic standardisation of a batch is possible. MeatMaster is the optimal solution for medium and large size operations of ground meat based products.

Parameters:
Fat, Weight, Foreign objects (Metal and Bone)

FOSS

FOSS
Slangerupgade 69
DK-3400 Hilleroed
Denmark

Tel.: +45 7010 3370
Fax: +45 7010 3371

info@foss.dk
www.foss.dk

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