

# In shape for feed analysis



*Leading Danish feed producer jumps straight into the quality control driving seat with ready-to-use near infrared analysis backed by internet support.*

Aarhusegnens Andel is a corn and feedstock provider producing a range of feed products from five plants, including the newest one in Denmark. The company is innovative and quick to adjust to market demands helping the business to cope well with the current difficult conditions. A recent example is a new feed product that the company developed for improving the digestion of piglets that was called the year's most important feed news at the Agromek 2009 trade show. Aarhusegnens Andel also supplies ecological malt barley to a growing demand from a number of breweries.

All analysis is performed at the company headquarters in Denmark, including all raw materials. Laboratory manager Lise Andersen explains the company's approach to quality control with near infrared (NIR) and how it has become simpler and more flexible with the availability of a new total solution for feed analysis.

## The right type of NIR

Mergers and acquisitions are increasingly common in the feed business, not least among farmers as they merge and run their businesses together. The economy of scale approach also applies to Aarhusegnens Andel. "If we look at ourselves, we are for instance, buying whole ship loads of soya directly from South America," says Andersen.

With a large and dynamic business to support, Andersen needs her laboratory operations to be quick and responsive. Especially important is the ability to check what happens when a change is made in a recipe.

"My biggest challenge is to have a NIR to be precise and in shape," she says. "We want to verify that we are in line with the targets we are aiming for. The results should be right, but if something sticks out from what is normal we would like to investigate why it is not meeting our expectations."

To meet the need, an InfraXact NIR analyser from FOSS was recently purchased for use in the company laboratory. It is used mainly to control finished products and in some cases samples from the process. For most of the testing the analyser measures pelleted compound feed and occasionally ground samples when necessary. For instance, some feed mixtures for pigs containing trace colors/markers in the feed require grinding. Likewise, con-

centrates and all ingredients such as Lucerne pellets, soya and corn are ground.

## Business advantages

The NIR test results can be used in disputes and as evidence in front of customers. The quality control coordinator uses the results for handling questions, pulling out the results as required and if necessary, collecting the production sample and running an analysis on that.

On the ingredients side, the ability to test quickly and reliably has the potential to really pay, especially when used in combination with a state-of-the-art optimization software system.

The ingredients are tested and then the optimization software takes over, regulating all types of mixtures.



“We can check for example, soy meal which could fluctuate and which is so expensive that it makes sense to control it,” says Andersen. “We can check the meal and if it is say, a half percent (protein) higher than last time, we type this in and the software makes a correction. We can then check the ingredient to ensure that it is within our tolerances. Clearly, this can lead to cost savings, but we have not done any calculations yet.”

### Agile operations based on Remote Internet Analysis (RINA)

Since it was installed in the lab, the InfraXact has made a good impression. “It looks good and works well,” says Andersen. “We can type in our own lab identity into the software and we are learning more and more about the possibilities as we continue to use it.”

So far, the instrument has been used just as it was originally set up, but the laboratory is discovering new possibilities all the time such as the ability to type in wet chemistry data into the software. The overall results are good, although the ash calibration and the starch calibration need to be updated with the laboratory’s own data.

This consideration about updating calibrations is typical for any feed producer contemplating the use of NIR analysis, but it was effectively taken care of when Aarhusegnens Andel made the decision to update their NIR analysis operations and go with the InfraXact. The analyser is provided as part of a ‘Total Feed Solution’ including full support in running the instrument and updating with new calibrations. Andersen says: “We chose FOSS due to the technical background and the fact that more people are there to support us. There are more people in the FOSS organization and if someone should not be there one day, we know there are others to fall in. There is a great competence and big back office to support us.”

The support can be provided online from a remote centre using a revolutionary software system called Remote Internet Analysis (RINA). NIR experts at the centre can monitor the instrument and update calibrations, leaving the laboratory free to get on with their work and without the need for an onsite expert in NIR analysis technology.

A key aspect of the RINA system is peace of mind. Andersen describes how the set up can deliver new calibrations

quickly if, for instance, they get new ingredients in feed mixtures. “We like that you can get your calibration adjusted more quickly,” she says. “That I can sit here in the office and see the results online from another computer is fantastic.”

The calibrations will also be reliable. “We have learned they are precise”, says Andersen. “In the past we have not had the trust in the calibrations in the same way, also that we could get the calibrations adjusted to fit our operation.”

Yet another aspect of the calibrations supplied with the InfraXact analyser is that they are based on artificial neural network calculations - a technique that assimilates a vast amount of data drawn from literally thousands of feed samples. So, for instance, if you are testing soya for protein you can be sure that the measurement is based on a representative set of data. “We have tested it a lot and the fact that it uses neural networks makes it robust and trust worthy,” Andersen concludes. “We compare it with our old NIR we used to have and this one can handle complex feed mixtures better.”

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Aarhusegnens Andel supplies farmers in the whole of Denmark with corn, feedstuffs, fertilizer, vitamins and minerals. The company has five plants for blending of feed, minerals and concentrates including one dedicated to ecological products and the company headquarters in Galten where the laboratory operations are based.

### NIR analysis with RINA

Remote Internet Analysis (RINA) is a networking software that makes it easy for an expert to precisely configure, manage and monitor NIR instruments from a remote location.

RINA gives peace of mind to NIR users. They get a tailor made solution with a constant surveillance. Instead of having to wait a couple of days for someone to visit, they get instant support via RINA.

### Total feed solution

FOSS provides a product offering called the Total Feed Solution providing a full NIR solution with total support allowing the user to focus on their feed busi-

ness rather than on NIR analysis. The Total Feed Solution includes:

- InfraXact™ NIR analyzer
- RINA network communication software
- ANN calibrations with continuous calibration updates and support through RINA
- Instrument support and surveillance through RINA
- Maintenance and technical support
- An optional external laboratory support for validation and calibration development.

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