

Software Meets Dairy Management: Solutions to allow for better decisions!

Take a moment to look back and think about what your situation was like 20 years ago. What technology was available at the time and how would you have solved the challenges you face today back then? Fact of the matter is that the technology has been advancing at a rapid speed for decades and dairy farms have found a lot of uses for it. It is a persistent process, and we want to spend some time looking at its development.

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After the turn of the millennium, there were an increasing number of options in the agricultural sector to find information on the world wide web. This opportunity was seized by many companies by creating an online presence and offering clients every chance to make contact and ask for advice. At the time, (almost) no one foresaw that at some point it would be taken for granted that internet access could be carried around in a pocket and a large number of daily tasks would be managed with a mobile phone. It is probably clear to most that this has brought us to a point where it is a blessing and a curse. On one hand, every individual and their personal data is more accessible and it is easy to spend more time than intended on a device. One the other hand, there are huge advantages, whereby we would like to concentrate solely on the uses for dairy farmers. It is, for example, easier to maintain or establish international contacts. In terms of consulting and purchasing products, farmers are no longer bound to local suppliers, but can choose from a wider field. On farms, significantly more data can be collected and analysed. A multitude of apps offer opportunities to manage memos and work routines. Additionally, many farms rely on programs that gather large amounts of data and contribute to business outcomes and allows for farms to work towards specific targets. With simple commands, this data can be analysed by a PC or mobile device and evaluated to allow for better decisions. In this article we sat down with various companies that focus on developing software solutions to make the daily work of dairy farmers easier.

DIVERSE OPPORTUNITIES

Nedap is a Dutch company that was been working on software solutions for the dairy industry for decades. 'Our primary goal is to improve the overall quality of life, both for dairy farmers as well as for the cows,' explains Eveline du Pont, the market solutions manager for Nedap. The main product for Nedap are the sensors for

cow recognition and data collection which are attached to the collar of a cow and can be used for selection or in concentrate feeders. The special thing about the concept of the company is that there are multiple possibilities for the use of the data. One such possibility is to use the technology through a second party. To this end, Nedap has a large number of contract partners that use Nedap's technology for data collection, but not for data analysis. The latter is done through a specific program of the contract partner which uses the data in exactly the areas where it is required. The advantage for these companies, which are primarily milking technology and genetics companies, is that they can customize the data specifically for their services and products. As such, they do not need to make additional efforts and investments in the development of their own reliable technology but are able to capitalise on Nedap's worldwide experience.

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The other option for the evaluation of the collected data is Nedap's own software, Nedap Cow Control. It analyses and collates a large number of parameters, like cow location, eating activity, standing and lying behaviour and heat detection. Every cow is monitored around the clock which gives farms the possibility to quickly react and make decisions. 'The big chal-

lenge for us is to deliver the right information to the right person at the right time. The end users need to be able to use the data for the optimal improvement of their operation, whereby they should not feel overwhelmed,' explains de Pont. She also shares that another step forward is about to be made for heat detection. 'So far, we have assessed heat detection and fertility management on a cow-specific basis, but now we have further optimized the software to better define and implement strategic developments for the whole herd based on the collected data,' explains de Pont.

CLOSE TO THE COW

The company smaXtec has developed a sophisticated health system which has been proven on dairy farms around the world. The basic idea was to get as close to the cow as possible. For this, a bolus was developed which collects data inside the cow and uses a read-out device

to pass the data to the user device. The most important point is the continuous monitoring of temperature with a sensitivity of 0.01°C. This is very helpful, particularly for early detection and treatment of sicknesses like mastitis, milk fever, pneumonia and ketosis. Cases of mastitis can be detected four days earlier through bouts of fever, and early treatment can reduce

costs associated with vet and medication bills, as well as reducing milk and even animal losses. The same is true for milk fever, whereby an alarm is sent at a decrease in body temperature which gives farmers an opportunity to avoid down cows. 'The early detection of disease days before a reduction in rumination is unique. The calving alarm, which is sent on average 15 hours before calving, opens up new doors for handling strategies,' explains Reinhard Schröcker, DACH sales manager at smaXtec. 'The lifetime of the battery is five years. For every bolus there is a cow lifetime guarantee,' adds Schröcker. The technology can offer more than the health alarms, as drinking behaviour and amounts, movement activity and heat stress data is also collected. Another unique feature is smaXtec's measurement of rumination activity, which is collected based on rumen contractions. This insight is particularly useful for feed changes, as smaller changes are more quickly identified. Furthermore, there is option with the special pH bolus to add pH measuring to the aforementioned parameters. Talking with practitioners, it is clear that the system offers different pathways to achieve various targets, from reducing antibiotic use to reducing the calving interval. As such, smaXtec places a lot of value on its support team which serves farms in a goal-oriented manner with as much detail as possible.

FAST AND CONSISTENT

The key to outstanding herd health and high production is not only herd management, but also feed management. Without consistency and high quality components, these goals cannot be achieved on a regular basis. To make this even easier and more precise for farms in the future, the company Si-Ware has developed a solution by the name of NeoSpectra. NeoSpectra is a scanner which is about the size of a flashlight and serves to promptly analyse feed samples with NIR (near infra-red). The time of analysis takes about one minute and the results are transferred to a smartphone via Bluetooth where they can be assessed. 'Farms and feed advisors can both benefit from the advantages. With little work, they can evaluate all components within minutes and document reliable results,' reports Bob Schumann, senior director for product management at Si-Ware. For conventional feed analysis in a lab, it is at least 4 days between collecting the sample and receiving the results. NeoSpectra makes it possible for all users to react more quickly and precisely to changes and thereby achieve more consistent feeding. A further use, which is also interesting for farms is the regular analysis of purchased feed. With just a few hand movements, a farmer can sample every load and recognize whether the delivered quality meets the promised quality. Through the app as well as the cloud, data can be transferred within seconds or downloaded in various formats.

Additionally, there are many possibilities to sort the data in the portal, which makes it possible to compare samples from different years, suppliers or farms. Si-Ware maintains good cooperation with various labs whose models were used to form the basis for the precise NIR analysis. Here, every individual client can select which model they would like to use for their analysis in order to further process the data according to their needs. ●

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