

By journalist Jette Beck

When Pig data becomes Big data.

About 15 years ago Jesper Hansen got an idea that grew and grew. Almost seven million registrations describe the production at Stovgaard and they are used every day.

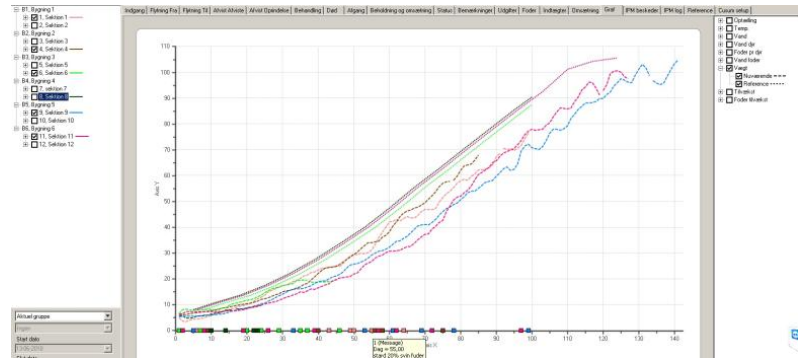
Jesper Hansen found in 2000 that he would weigh all his pigs to follow the growth. An initiative that in itself was not particularly new. What makes his idea of something innovative is that he joined and collected so many registrations that IT companies and researchers are looking for to be allowed to use them.

It has turned into Big data. Data that the companies Skov and AgroSoft have gathered and worked seriously with in order to develop a professional system that can collect all relevant records of pig production

6 stables with 12 sections!

Jesper Hansen installed the first feed weighing scale in each of the 12 sections and began around

2003 to register by hand. How many handwritten pages of weight records it has amounted to over the first years is unknown. Now the pigs weigh themselves. Weight, feed, water and temperature records are automatically sent to the computer, where a program puts the numbers into curves that quickly provide an overview of the production of the 12 sections in the 6 barns that Stovgaard's production represents.



What matters to Jesper Hansen is that all the registrations are in real time!

"We have gone from looking at results from dead pigs in the E control, to look at registrations of live pigs. Now we can do something about the results while the pigs live. It was like driving a car by looking in the rearview mirror, it's outdated. There is potential for following real-time production" says Jesper Hansen, who contacted AgroSoft and Skov himself to have a system developed that automatically logs and collects the registrations.

Two hours without feed gives growth loss!

The graphs and curves on the computer give an idea of where employees should be extra aware of the stables.

For an example, if the pigs sneeze, it does not mean that something needs to be done. But if the curve moves, breaks or stagnates, Stovgaard's employees knows that there is a problem that must be taken of.

"If the Internet or computer is down then I do not feel we are taking proper care of the animals. Just two hours idle with an empty feed silo will show a reduced growth on the graphs, and it can rarely be obtained", says Jesper Hansen. He does not want to be without the overview that the system gives him.



Jesper Hansen på Stovgaard har knap syv millioner registreringer fra stalden. Foto: Jette Beck

The production on the farm is wean to finish (FRATS). So if something goes wrong, it may take five months before a new batch of pigs gets put in and it can be remedied. During that period, much growth may be lost. However, with the monitoring being done today the key figures at Stovgaard look fine. On average, daily growth of 1100 grams is achieved, with feed consumption of 2.5 and 2.6 feed units per kilogram of growth.

Landbruget Stovgaard ved Sønderborg og Padborg

Ni ejendomme indenfor 50 kilometer
 1000 SPF søer i Full-line
 30.000 slagtesvin i FRATS
 11 ansatte heraf 4 driftsledere
 750 hektar jord

Data gives motivation!

It is exciting to follow the animals both on the screen and in the stable. Jesper Hansen says that motivation among the employees is top. At Stovgaard what they have done in the stable today will be seen on the graphs and curves tomorrow.

He does not have to remind the employees of an alarm or a silo that runs out. They log in every day, check the alarms and click through the curves on the 12 units and that takes 3-4 minutes in total. They note on tablet and computer when they medication has been given, changed feed or they notice something abnormal in the animals. The events can be seen on the timeline along with the curves.

"I'm just backup, and have full confidence in the good and skilled people I have. 90 percent of all errors are human. Mistakes always come, but we must learn from them and we only do so if they are registered and the experiences shared," says Jesper Hansen. In the future, he hopes to have more analyzes. Analyzes can show when the curves typically break, so it can take action before it can be felt in the stable.

Millions of registrations each year!

The first system to log all registrations from the barns was first installed in six places in Denmark. However, only Jesper Hansen has been persistent enough to develop, utilize and refine the system. Since the latest version of AgroVision Data Center was installed on computers in 2013, nearly seven million records have been collected about feed, weight, water and temperatures. AgroVision Data Center translates all of the protocols, collects and combines the registrations to make sense with current curves, reference curves and smoothing curves for each section and stall. Stovgaard has very good numbers on where the normals are for the sections and measures the current production against it. AgroVision Data Center is an add-on program for PigVision.

Solutions hide in the system!

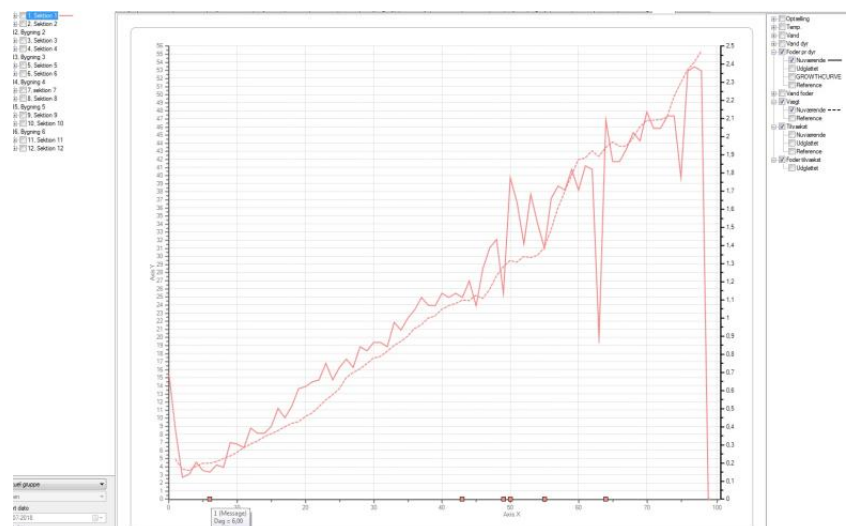
Jesper has developed the system together with AgroSoft and Skov, a collaboration that started already in 2003. Until today, the registrations and data collection have been on the agenda. But now, Jesper Hansen believes that the industry is ready for Big data.

"Now we can show the potential of the system. AgroVision Data Center allows us to know exactly how things are going in our 12 section we have on the farm. It only takes 3-4 minutes per day to see if something is beginning to happen, so that we can do a quick response. Over time, we have made different actions when a batch has had problems. With the historical data we can find the cause and possibly a solution by comparing numbers and remarks in the system.

Low tech at high level

Paul Said Fredsted is IT specialist at AgroSoft and regularly visits Stovgaard to improve and develop the system.

"Jesper pushed the right buttons. He is a good example of stubbornness paying off. Now we are working on making a standard product that can be used worldwide. It's really pretty low



tech. At EuroTier and Nutrifair we present the latest version of AgroVision Data Center, which transfers data directly through an IP address and MAC addresses into the management system. With this software, we take the gap to the future. Time is up to Big data”, says Paul Said Fredsted explaining that AgroVision Data Center can communicate with all equipment that can deliver data in an electronic form and can exchange information with a local network or the Internet
 With almost seven million registrations from Stovgaard, it provides some material to work with. Not only for farmers but also for researchers, Paul Said Fredsted concludes.

Bemærkninger			
Lokation			
Dato	Kode	Beskrivelse	
08-10-18	4	alarm silo	
08-10-18	6	10% ung foder	
08-10-18	8	10% smågris foder	
09-10-18	5	lawsonia vaccine	
10-10-18	6	prss vaccine volmir	
Totalt: 5			

Big data can save resources!

AgroSoft and Skov have been joined by PhD student Jakob Raffn from Aarhus University at Foulum to project Big Data to big business. "There is no other person in Denmark who has so many specific data from pig production as Jesper Hansen at Stovgaard. Jesper has really been innovative and driven the development of registrations to here where research can use them”, says Jakob Raffn. He explains that the goal of the project is to make financial systems that can predict how much resources are used and how much can be recycled. A kind of borrow and return system for the earth's resources. He hopes that more companies will come along and already have sensors at Seges and Skiold.

The systems should talk together!

“We are now ready to develop a method that allows computer systems to talk together also externally. I hope Skiold and Seges will join the project as Agrosoft and Skov do right now. If we can develop methods that can predict the consumption of resources, then we have something big”, explains Jakob Raffn. It is primarily measurements of water consumption and temperatures the researcher will use. He is working on the fact that all the automatic records of water consumption Skov can deliver, is compiled with data from AgroVision Data Center at Stovgaard. It can provide important information on the consumption and utilization of the water and help shape algorithms that can predict the amount and consumption of natural resources.

Your data is worth gold!

Jakob Raffn believes that if the industry and the food industry in Denmark collaborate and act quickly on Big Data, we are sovereignly strong at world level.

“ For our sake, we must not sell our data abroad, such as IBM Watson, Google, Amazon, Microsoft, and so on. The type of companies utilizes business models that make you a product, through your data”, says Jakob Raffn. He points out that the data is the company's own private registrations but that the algorithms developed on the basis of data become public and can make Denmark's export markets bigger.