

# RESULTS 2017

SEGES Danish Pig Research Centre

## FEED TESTING

SELECTION MADE EASIER

## NEW STANDARDS

FOLLOWING RECOMMENDATIONS  
MAKES FINANCIAL SENSE

## BREEDING ADVANCES

BEST EVER RESULTS

## THE LABORATORY

HEALTH, EFFICIENCY  
AND THE BOTTOM LINE

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## WELCOME TO 2017 RESULTS

The latest knowledge, current topics and interesting stories from farms across Denmark - everything that is important to you and other Danish pig producers is presented here.

This report also provides an overview of the work of SEGES Danish Pig Research Centre – breeding, health, finance, exports, and so on.

We hope you will be inspired in your daily work by reading about some of the projects we are involved in. As always, our aim is to disseminate knowledge and solutions to enable Danish pig producers run their businesses more profitably.

If you would like more in-depth information, you can find all our reports and publications at [svineproduktion.dk](http://svineproduktion.dk). You can also sign up here for our newsletter, which will keep you up updated on the latest knowledge. **We hope you enjoy reading this report.**



# WE WORK FOR YOU

**The most important task of the sector board of the Danish Agriculture and Food Council, Pig Production is to make your life as a pig producer in Denmark easier. Together with SEGES Danish Pig Research Centre we are involved in research and development that strengthens Danish pig production. Moreover, we disseminate knowledge and solutions, which impact on financial results.**

The sector board of the Danish Agriculture and Food Council, Pig Production prioritises, orders and approves the pig-related work that is undertaken by SEGES Danish Pig Research Centre – including how fees for genetic products are allocated and which projects require funding through the Pig Levy Fund.

We set the breeding targets and we set the direction for the work that SEGES Danish Pig Research Centre undertakes. At the same time, our role is to ensure that farmers' wishes are heard so that the professional knowledge

that results from SEGES' work is as practical and directed as possible. In other words, it is all about ensuring that all development and innovation activities create value for the individual farmer.

#### **WE KNOW THE INDUSTRY**

The board is made up of pig producers and there is obviously a reason for that. We understand the industry's potential and challenges and we are always focused on finding new solutions that have a positive financial impact on Danish pig producers. We also work to ensure that we comply with

legislation and that we provide the keenest professional knowledge that can be used in political debates in order that they take place on an informed basis.

#### **MONEY AND PROJECTS IN 2017**

On page 7 you can see where funds are directed and on page 39 you can see how our innovation activities will be prioritised over the coming year.

**We look forward to continuing our relationship in 2018.**

# SEGES DANISH PIG RESEARCH CENTRE **SEEKS TO IMPROVE YOUR BUSINESS**

**SEGES Danish Pig Research Centre has one clear and simple objective – to strengthen the businesses of Danish pig producers. Professional research, support for political initiatives, services and communication are some of the ways to pursue this objective.**

At SEGES Danish Pig Research Centre we are involved in a wide range of research projects as well as the development of concepts and tools. We have two main objectives: to deliver new knowledge that can be used directly at the farm and to enhance profitability. We also support political initiatives by contributing professional insight for use in political debate. Moreover, we operate a full range of services that help to support the quality

SEGES DANISH PIG RESEARCH CENTRE HAS ONE CLEAR AND SIMPLE OBJECTIVE – TO STRENGTHEN THE BUSINESSES OF DANISH PIG PRODUCERS.

and development of Danish pig production so that we can retain our place among the leading international players. In this respect, the SPF system and the DANISH scheme are good examples that help to maintain a high level of security and quality.

## **SIGNIFICANT INCOME FROM GENE FEES**

Gene fees from the sale of DanAvl genetics abroad are the primary source of revenue and account for 39%. Danish gene fees account for around a quarter of revenue and are therefore an important factor in funding the work of Danish pig production. The same goes for the revenue SEGES Danish Pig Research Centre generates through user-payment on commercial terms, e.g. revenue generated at the SEGES laboratory.

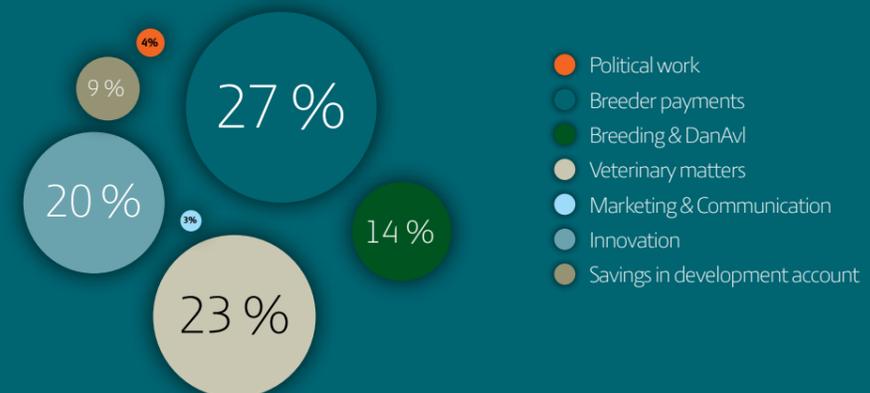
## **INVESTMENT IN BREEDING WORK GENERATES GENE FEES**

As far as expenditure is concerned, the most significant item in the budget is accounted for by the payments to the breeders who

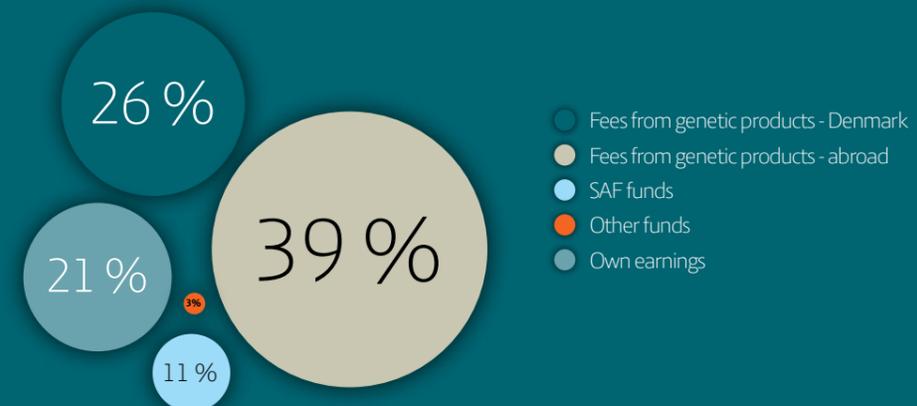
conduct the practical breeding work, i.e. 27% of the budget. This is followed by the veterinary conditions that cover washing depots, the DANISH scheme, the SPF system and the laboratory. 23% is invested in the SPF system and the laboratory, which also accounts for most of the revenue generated by SEGES Danish Pig Research Centre as a whole, since both the laboratory and health control are run on a commercial basis.

Innovation work, which is partly funded by the Pig Levy Fund, accounts for around 20% of the SEGES Danish Pig Research Centre's budget. The smallest item in the budget relates to marketing and communication, which is responsible for the Pig Congress, various seminars and meetings, the website, social media, videos, podcasts and any other means of communicating knowledge and news that originates from SEGES Danish Pig Research Centre.

## OUTFLOW OF EXPENSES:



## INFLOW OF REVENUE:





# EAT SOME MORE RYE

**More rye in the feed offers a number of benefits – costs are reduced and satiated sows are calmer.**

It is cheaper and has no negative impact on the sows' productivity. These are some of the conclusions from a SEGES Danish Pig Research Centre study where a large portion of rye was added to the feed of pregnant and nursing sows.

*"The results have been very good, and rye has a better effect than other cereals. We can see that the sows eat slower and are satiated for longer, which makes them calmer."*  
**Anton Nielsen, trial host and owner of Nr Brasholt.**



Rye also satisfies the sows for longer because it contains arabinoxylan, a fibre that enables the feed to be absorbed in the intestine at a slower rate.

## CHEAP ALTERNATIVE

Previously, many producers were reluctant to use rye in the feed because of ergot and there remains a need to be alert to the fungus. But the majority of rye today is hybrid rye, which rarely has this problem.

The savings achieved by using rye are also worth considering. With ready mixes, you can save around 5% through using 60% rye for pregnant sows.

"Rye is the ideal feed for sows, but the price of it determines whether it should be part of the mixes. Group fed pregnant sows, in particular, benefit from rye in the feed because the eating time is extended," says Gunner Sørensen, Senior Scientist at SEGES Danish Pig Research Centre.

"I've continued to use rye since the trial because it has proved to have a number of benefits. I don't produce it myself, but if I were to do so, I would probably make even bigger savings," says Anton Nielsen

## IN SUMMARY, THE TRIAL HAS PRODUCED THE FOLLOWING RESULTS BASED ON 5,603 SERVICINGS AND 845 STANDARD LITTERS:

- > It is beneficial to add 60% rye to the feed of pregnant sows and 35% to nursing sows
- > The litter size and the farrowing percentage were not influenced by the addition of rye
- > As the density of the feed with a large proportion of rye was higher, focus should be on the correct adjustment of feed boxes etc
- > The milk yield of the sows was not affected. Consequently, there was no difference in litter gain and the weaning weight of the litter

# A NEW APPROACH TO CONSTRUCTION

At SEGES Danish Pig Research Centre's test farm in Brædstrup, farmers who are planning to build farrowing pens for loose-housed nursing sows have a unique chance to see ten different pen systems in operation. There has been significant interest – both in Denmark and abroad.

You know the scenario...There are many pros and cons that have to be taken into account when undertaking a new building project. Design, space for the sow, hygiene and working conditions to name a few. And then there's the financial aspect and the time scale. Over the past year, SEGES Danish Pig Research Centre has presented an overview of the options by setting up ten different pens for loose-housed sows at a test farm in Brædstrup in Jutland. Here visitors can compare, view, touch and try out the pens and gain an insight into the options that are available when the time comes to build new facilities.

"Usually, farmers planning to build new pen systems will only get to see a couple in operation. In Denmark, we are familiar with just a few systems and for some farmers, the systems they know are not necessarily the best choice," explains Lisbeth Ulrich Hansen, Chief Researcher and responsible for the test facilities.

## BETTER DECISION-MAKING BASIS

The purpose of the project is to increase synergies and progress in the development of robust and competitive farrowing pens for loose-housed sows. SEGES Danish Pig Research Centre has, therefore, tested all the systems.

*"Just like FDM tests cars and the Consumer Council tests toothpaste, we have conducted a major test into pens for loose-housed sows in the hope that this will provide a sound decision-making basis for producers planning to undertake a new building project."*

*Lisbeth Ulrich Hansen, Chief Researcher, SEGES Danish Pig Research Centre.*

## WIDESPREAD INTEREST

Interest in visiting the test farm has been great. Not just from farmers but also from agriculture students, university researchers and manufacturers of pig housing equipment. In addition, there has been huge interest from researchers, veterinarians and farmers from abroad.

"SEGES Danish Pig Research Centre has produced an excellent project," says farmer Franjo Roed Jakobsen, who has visited Brædstrup. "And it's great that there is a farmer who is willing to do this in order that many others can benefit"

Lisbeth Ulrich Hansen is, of course, delighted with the results:

"This is yet another good example of SEGES Danish Pig Research Centre developing concepts and solutions for Danish farmers, which also have reached a global audience."



## FOCUS POINTS DURING THE PRODUCT TESTING

- > Entry and exit conditions in the pen
- > Use of the box
- > Space for the sow in the box/pen
- > Design and use of the creep area
- > Dispersal of feed, water, rooting, nesting and enrichment material
- > Hygiene in the pen
- > Injuries to the sow and pigs
- > Working conditions and safety of personnel



# WE MAKE IT EASIER FOR THE FARMER TO SELECT FEED

**Energy content, nutrients and value for money come under scrutiny in detailed feed tests by SEGES Danish Pig Research Centre.**

"We carry out regular checks of feed mixes and test them against each other

*"It's no secret that we check out the feed companies. We have a very strong and unique concept, which means that we're constantly encouraging feed companies to supply the best feed they possibly can. They simply cannot afford not to measure up, so this is, of course, of enormous benefit to farmers."*

*Jesper Poulsen, Senior Consultant, SEGES Danish Pig Research Centre.*

to determine how the pigs' productivity is affected by different feeds. We do this to ensure quality and to make it easier for the farmer to choose the feed that gives the most value for money," says Jesper Poulsen, Senior Consultant at SEGES Danish Pig Research Centre, who is responsible for last year's tests and controls.

In order to ensure accurate results, the feed companies do not know whether we are conducting a test or which of them is being tested. And to prevent the feed companies from becoming aware of the test, we buy feed samples from farmers, not directly from the feed suppliers.

#### **MOST VALUE FOR MONEY**

In 2016, we tested four mixes in a commercial finisher herd. We also conducted a control survey of ready mixed

feed, and most recently of mineral mixes. The trials are tests on pigs and we look at energy and nutrient content and the overall production value.

"The control surveys involve the taking of samples to be analysed in laboratories so we can see whether the content is the same as listed in the content description," Jesper Poulsen explains.

"In general, the three tests show that the feed companies are very successful at delivering the nutrient content as listed. But when we 'ask' the pigs, so to speak, whether there are differences in mixes, the answer is yes. Because our trials involve many pigs, we're able to catch small differences in productivity between the individual feeds."



## TEST RESULTS:

### **CONTROL SURVEY, MINERALS:**

Control of a total of 60 mineral feed mixes from Nutrimin, Vestjyllands Andel, Vilomix and Vitfoss did not show any statistically significant variation between analysed and declared values.



Read more about the test here:  
[svineproduktion.dk/1108](https://svineproduktion.dk/1108)

### **COMPANY TESTS, FINISHERS:**

A test of feed mixes for finishers from 2016 showed differences in the production value between the mixes. DLG feed had a statistically significant better production value than feed from Vestjyllands Andel, but the production value was not, in statistical-terms, significantly better than feed from ATR or Danish Agro.



Read more about the test here:  
[svineproduktion.dk/1096](https://svineproduktion.dk/1096)

### **CONTROL SURVEY, READY MIXED FEED**

Control of 150 samples of ready mixed feed showed differences in how well the individual feed companies complied with the declared content of energy, raw protein, lysine and methionine. In general, energy, raw protein and lysine complied, but we found a lower content of methionine.



Read more about the test here:  
[svineproduktion.dk/1094](https://svineproduktion.dk/1094)

# THE HUNT TO REPLACE MEDICINAL ZINC

**Hard work and a wide range of tests and activities have not yet resulted in a product with the same properties as zinc. The next three major steps are concept testing international experiences, a major project focusing on alternative combinations of amino acids and protein compositions and a long-term action plan for the phasing out of medicinal zinc for the prevention of diarrhoea in weaned pigs.**

The European Commission has decided that all use of medicinal zinc should be phased out in no more than five years. This is a major challenge as zinc in Denmark has been the preferred way of treating diarrhoea in weaned pigs for almost 20 years. At the same time, there remains strong focus on reducing antibiotic consumption in Danish pig production.

"This is why we need to find solutions to help pig producers when they are no longer able to use medicinal zinc and political pressure continues to be exerted to reduce antibiotic consumption," says Christian Fink Hansen, Sector Director for SEGES Danish Pig Research Centre.

## HOW FAR ARE WE?

In February last year, we launched an action plan containing seven specific initiatives to reduce zinc consumption. All the initiatives are in play and are running as planned.

"Part of the action plan involved testing a number of products – unfortunately with no positive impact on diarrhoea in weaned pigs," explains Chief Consultant, SEGES Danish Pig Research Centre, Niels Jørgen Kjeldsen, who heads up the tests. On the other hand, the tests showed that it is possible to reduce the content of zinc to 1,500 ppm and achieve just as good an effect as with a high dosage of 2,500 ppm.

Another part of the action plan was a study, conducted in collaboration with Denmark's National Veterinary Institute, into the significance of rotavirus in relation to diarrhoea in piglets. The results showed that rotavirus cannot be detected as a reason or a contributory cause of diarrhoea among piglets until three weeks after weaning.

## NEW INITIATIVES

However, efforts to find an alternative to zinc do not stop here, and the hunt for other solutions to zinc will now be intensified and will focus on feed-related solutions.

"We're now ready to run a concept test and we have invited companies from across the world to put forward their suggestions for alternatives. We have received over 20 applications and have selected some that we will test. We hope, of course, that this will inspire us as to what we can do and that we can learn from international experience," says Niels Jørgen Kjeldsen who is particularly focused on putting theory into practice.

## POSITIVE EFFECT FROM ALTERNATIVE FEED COMPOSITIONS?

2018 will also see the start of a major project where we will test alternative compositions of amino acids and protein compositions to see whether these can have a positive effect.

"I have high hopes for this. It's currently expensive – both in terms of direct costs and in loss of productivity. But I believe that this is way to find a sustainable solution," says Niels Jørgen Kjeldsen.

## ADDITIVES

In collaboration with Aarhus University at Foulum, experimental studies have been carried out to determine the effect of purified immunoglobulins. Work is currently being

undertaken to get this into a formulation that is both virus-free and can be handled in practice in a herd. This then needs to be tested in a commercial herd. Moreover, in 2017 – in collaboration with the global bioscience company, Chr. Hansen – tests will be carried out on the effect of two newly developed types of probiotics.

## REARED WITHOUT ANTIBIOTICS AND ZINC

In partnership with Danish Crown and a number of research institutions, we embarked on a major research project in 2017 to provide us with a sound and scientific basis for the future production of OUA pigs (reared without antibiotics). The results from this project will also provide us with valuable insight into how we can rear robust pigs in future, which are able to thrive without the use of zinc and antibiotics – knowledge that can be implemented throughout pig production.

## LONG-TERM STRATEGY ON THE WAY

"We've worked hard on a wide range of solutions and we've learned a lot. But there's still a long way to go, which is why we're looking into a comprehensive and long-term strategy for the phasing out of medicinal zinc," says Christian Fink Hansen, Sector Director for SEGES Danish Pig Research Centre. "We need everyone on board and we have initiated discussions with veterinarians, the medical industry, the food sector and pig producers. It's important we work together towards the goal of finding a solution to phasing out zinc within five years."

*The project is supported by Green Development and Demonstration Programme (GUDP) under no. 34009-14-0830*

## FACTS ABOUT ZINC – AND THE BAN ON ITS USE:

Zinc is an indispensable mineral that all living creatures need to grow. Pigs receive a zinc supplement in feed because they need the mineral in a wide range of physiological processes. Moreover, zinc is used to medicinally treat the diarrhoea that arises when piglets switch from liquid to solid feed.

The challenge of using zinc is that there may be high concentrations of zinc in the soil in certain agricultural areas, which could potentially lead to environmental problems in the future. Moreover, in certain cases, zinc can create resistance in the same way as antibiotics.

In June 2017, the European Commission voted in favour of a ban on the use of zinc within five years.

# THE BEST BREEDING RESULTS EVER



Jørgen Hoberg,  
Manager at Bøgildgård

The results of the breeding work are clearly evident and are reflected in the bottom line. Progress this year has given Danish pig producers a value increase of DKK 14.83 per produced finished pig. Measuring more animals, genomic selection and thorough data and analysis work are the reasons for the great results.

Advances in breeding have never been greater and the measured values have significantly improved. Denmark's pig producers can thus enjoy a record breaking value increase per pig.

"We have measured more animals than we usually do – over 100,000 – and the more animals we've measured, the better the results

we've obtained," says Anders Vernersen, Head of Breeding and Genetics Department at SEGES Danish Pig Research Centre.

### GREAT BREAKTHROUGH

But it's not just the number that makes the difference. In recent years, we have introduced certain methods to add further information to the rest that we collect, including through genomic selection. This gives us a more accurate impression of how two pigs are related, which we can use to better assess the animal's breeding value. "Getting this to work on such a large scale is a significant breakthrough," says Anders Vernersen. "We're still working on our "breeding machine" – that is, constantly refining the technique.

*"Our view is that genomic selection will give a significant uplift to breeding progress of up to 25%."*

*Anders Vernersen, Head of Breeding and Genetics Department at SEGES Danish Pig Research Centre.*

### GREAT PROGRESS

Looking at the measured values more closely, there are plenty of noteworthy results. The survival rate in breeding and multiplier herds is increasing. Litter size has improved and there is also clear progress in finisher traits, such as feed consumption, daily gain and meat percentage. At the same time, trials have shown that breeding work impacts cross-breed herds just as much as animals in the breeding nucleus. In other words, the improvements extend to the units and have an effect.

We have also focused on the sire impact on the litter size in the Duroc breed.

"Indeed, we've focused more on this breeding target and it's good to see that Duroc is now making a significant contribution to productivity improvements in sow herds," says Anders Vernersen.

### GREATEST PROGRESS IN BREEDING WORK EVER

Here are more details about the year's breeding progress

	DD	LL	YY	Average > DLY finisher
Daily weight gain (g/day)	21	12	18	19
Feed conversion ratio	-0.04	0.04	-0.03	-0.036
Lean meat percentage	0.13	0.17	-0.01	0.11
Litter size (pigs/litter)		0.38	0.42	0.40
Conformation	0.01	0.03	0.06	0.03
Piglet growth g/day	3.2	2.1	1.8	3.0
Longevity		-0.01	0.03	0.01
Finisher	-0.03	0	-0.04	-0.03
Sire effect on litter size	0.09			0.09

	DKK per unit	Overall value, DKK
Daily weight gain	0.13	2.47
Feed conversion	-147.00	5.29
Lean meat percentage	9.70	1.07
Litter size (pigs/litter)	19.60/2	3.92
Conformation	12.50	0.38
Piglet growth	0.11	0.33
Longevity	85.00/2	0.43
Finisher	5.10	0.15
Sire effect on litter size	17.60/2	0.79
<b>Average total per year (the latest 3 years)</b>		<b>14.83</b>

# MILK SYSTEM DELIVERS MORE CAPACITY



TESTS WITH MILK CUPS IN THE FARROWING UNIT HAVE SHOWN THAT IT CAN BE PROFITABLE TO USE A MILK REPLACER. WITH EXTRA MILK, THE SOW CAN NURSE MORE THAN 14 PIGLETS, AND WITH THE INCREASED LITTER SIZE THE NUMBER OF NURSING SOWS CAN BE REDUCED. A REALLY GOOD DEAL.

*Jonas Würtz, test host.*

**Tests with milk cups in the farrowing unit have shown that it can be profitable to use a milk replacer. With extra milk, the sow can nurse more than 14 piglets, and with the increased litter size the number of nursing sows can be reduced. A really good deal, says the test host.**

More piglets require more teats and more nursing sows require more farrowing pens, but there may not always be the space or the funds available for this. In order to find a solution to this challenge, SEGES Danish Pig Research Centre has carried out tests with a milk system in the farrowing unit.

"Overall, the tests have shown that the milk cups have a positive effect and enable the sow to nurse more piglets in her own pen," explains test supervisor Marie Louise M. Pedersen, Senior Consultant at SEGES Danish Pig Research Centre.

Piglet mortality can, however, increase and the weaning weight fall.

"With fewer piglets in the litter, than 14, and based on international trials, we expect to achieve a lower piglet mortality rate and a higher weaning weight with milk cups. When we put pressure on sows with more piglets, we achieve many weaned piglets, but their weight is reduced, and there is a risk that more of them will die. Consequently, the size of the litter should be increased gradually and the right number of piglets should be found to achieve a balance," says Marie Louise M. Pedersen.

## THE ADDITIONAL COST IS WORTH IT

The first step was to gather experience from 10 herds where milk cups had been used over an extended period. We asked them about their economy, method and results. This information was used in our calculations, which proved that it costs approximately DKK 12.50 per weaned piglet to use milk cups. 80 to 90% of this cost is for the milk powder.

"It's expensive, but the cost can be recovered in some cases. Some seven out of the 10 herds we spoke to produced a profit. The big gain is being able to reduce the number of nursing sows, and thus increase the number of farrowings per unit," explains Marie Louise.

## THE SOW CAN NURSE MORE PIGLETS

The next step was a trial at pig producer Jonas Würtz's farm, Go-gris, in Skanderborg.

"We put more more piglets to the sows to see how many they could nurse when milk cups were in place. We tested up to 20 piglets per sow, and discovered that the sows can nurse more than 14 piglets, but that the weaning weight falls and mortality increases when more piglets are put to the sow. 20 piglets were far too many. But we know that many of the herds that we've shared experience with have put 16 piglets to a sow using milk cups," says Marie Louise M. Pedersen.

## A VERY PROFITABLE BUSINESS

"Previously, we were far too conservative and put too few piglets to the sows. But things went very well with more piglets during the trial so this has become the norm," explains the trial host, Jonas Würtz, who progressed

from an own weaning of approximately 12.5 to 14 pigs. Go-gris also has 125 more sows in the farrowing unit with same number of farrowing pens.

"With milk cups, we now produce 36,000 pigs in the same unit, whereas before we produced 32,500," says Würtz.

The significant change is also evident from the bottom line: "We've monitored costs meticulously since we purchased the system, and we can see that it has had a significant impact on our results. It's a good investment."

## MORE CALM

Jonas Würtz is also very pleased that the farrowing pens are generally working better and that capacity has been increased.

"We don't move so many pigs around, and it's much calmer – both around the sows, in the litters and with our reproduction.

We have an immunity-stable production and we can see an advantage in this in all stages of our system. We can also see that the piglets find it easier to get used to dry feed. So, all in all, we're very pleased with the investment and the results."

**"Using milk cups costs around DKK 12.50 per weaned pig. 80 – 90% of the cost is for milk powder".**



**Calculate the benefits of using milk cups. Read more here: [svineproduktion.dk/1708](http://svineproduktion.dk/1708)**

## MORE ABOUT THE TRIAL AT JONAS WÜRTZ FARM:

The piglets' use of the cup, which was active and filled with feed all the time, was also monitored intensely – through a video study.

**”** It was surprising to see that 20% of the piglets didn't use the cup, perhaps because they couldn't work out how to use it. There is a great variation between litters, and we believe this is dependent on how much milk the sow provides," says Marie Louise M. Pedersen.

Finally we also looked at the effect of the cup with the smallest piglets.

**”** We could see here that the cup doesn't make any difference. It doesn't save more of the small piglets, and you still have to do extra nursing, keep the litter size low and generally do what is usually done for the smallest piglets."





# PRODUCTION EXPANSION THROUGH ENVIRONMENTAL TECHNOLOGY

**By constantly testing new technology and methods for reducing and measuring odour and ammonia emissions, it will become easier for farmers to comply with environmental requirements and thereby expand their production.**

For a number of years, SEGES Danish Pig Research Centre has been conducting tests into spot extraction, i.e. a cost-effective solution for full air purification. Spot extraction is, in combination with air purification, included in the Danish Environmental Protection Agency's Technology List as a technology that can be used to reduce ammonia and/or odour in the finisher units.

"By extracting air flow equivalent to 10 per cent of the housing unit's ventilation capacity near the animals' lying area, up to 65 per cent of the unit's ammonia emissions and 50 per cent of the unit's odour emissions are collected for subsequent purification," says Anders Leegaard Riis, Environmental

Technology Manager at SEGES Danish Pig Research Centre. Such a large reduction in odour and ammonia concentration not only looks good on paper. It also provides for an improved working environment for farm personnel. Ventilation efficiency is also improved in each pen because the spot extraction ensures that the air is drawn down into the pen.

In addition to testing spot extraction, SEGES Danish Pig Research Centre also tests various air purifiers because these have an impact on the spot extraction. The test results will provide farmers with a number of options for air purification technologies.

**MORE PRECISE ODOUR MEASUREMENT**  
Ammonia and odour reduction is a core area for SEGES Danish Pig Research Centre, which acquired a PTR-MS (Proton Transfer Reaction Mass Spectrometry) system before the summer, an instrument that will make it easier to measure the effects of environmental

technology on Danish farms more accurately. "If a company refines its air purification system and claims that it is 5-10 per cent more efficient than before, we're now able to document this. Until now, the method has been to collect air in a bag and send it to an odour judging panel, which has led to some uncertainty," says Anders Peter Adamsen, Chief Researcher at SEGES Danish Pig Research Centre.

The system will also be used to test other technologies, e.g. trials with additives to, or the acidification of, slurry and see how this affects odour emission.

"Acquiring the system means that we can test the impact of various environmental initiatives and publish the results as we do so. For the farmer, this will provide much more certainty that the effect of environmental measures on the farm can be documented more precisely," says Anders Peter Adamsen.

IF YOU ARE UNDERTAKING A  
BUILDING OR UPGRADING PROJECT,  
IT MAY BE WORTH CONSIDERING  
SPOT EXTRACTION

# NEW STANDARDS FOR AMINO ACIDS PAY OFF FOR LACTATING SOWS

**More milk from sows produces higher returns. There are great benefits to be had from following the new standards for amino acids.**

Once again, new standards for amino acids for lactating sows are in the pipeline in tandem with clear and precise recommendations for Danish pig producers that should be followed.

"If our standards are followed, producers will be able to earn more because sows will produce more milk and their weight loss during the lactating period is reduced. We've also concluded that with the new standards for protein and amino acids for lactating sows there's no reason to worry about diarrhoea in piglets," says Thomas Sønderby Bruun, Senior Specialist at SEGES Danish Pig Research Centre.

In collaboration with PhD student, Camilla Kaae Højgaard, he has been involved in determining the new standards:

"A good tip is that there is DKK 15-20 per year sow to be saved if nursing feed is modified to comply with the latest standard. Specifically, it is possible to save around DKK 3 per 100 kg feed but still obtain the same yield if the 2015 standard is replaced with the new one.

**INCREASED PROTEIN DOES NOT RESULT IN MORE PIGLET DIARRHOEA**  
During the year, SEGES Danish Pig Research Centre ran a series of tests and previously carried out a risk factor study to examine what effect increased protein content in the feed would have on the prevalence of piglet diarrhoea.

Earlier this year, we tested seven herds in different ways where we diluted the feed for

lactating sows in the days before and three days after farrowing. We used different feed compositions and varying protein content.

"Regardless of how we diluted the feed for our lactating sows during farrowing, it had no impact on the occurrence of diarrhoea in piglets or on litter growth. The fear about more protein causing diarrhoea proved to be groundless. In the event of a resurgence of diarrhoea, it is unlikely to be because of the feed and you can now use nursing feed with 120 g digestible crude protein per FU sow from the moment of transfer into the farrowing unit," explains Thomas Sønderby Bruun who also points out:

"You can save a little on the feed price by diluting the feed, but this saving will undoubtedly be outweighed by the work involved in manually diluting the feed in each farrowing pen."

## GAIN FOR THE ENVIRONMENT

Thomas Sønderby Bruun also points out another aspect of the new standard. The results showed that the sow needs less protein in the feed when given the amino acids they need. By reducing digestible raw protein by 5 g per FU sow and changing the amino acid profile, there will be less surplus protein. This benefits the environment.

## SIGNIFICANT GAINS WITH INCREASED PROTEIN

Kristina Sonne is one of the seven pig producers who was part of the trial earlier this year. She replaced the 2013 standards with those from 2015 and, as a result, gave more protein-rich feed to her lactating sows. "This resulted in additional feed costs because more protein in the feed is more expensive than grain, but at the same time, it produced



significantly more milk from the lactating sows and the farrowing weight increased significantly. It clearly pays off in the end," says Kristina Sonne.

"Under the old standards, we were worried about getting a lot of piglet diarrhoea, so we were probably rather wary of protein. But following this project, we changed our procedures entirely and have seen many benefits."

## LESS MESS IN THE LITTERS

Another focus area for the Sonne family was standardised litters.

"We've learned not to tinker with the litter too much because a sudden replacement creates

too much unrest," says Kristina Sonne, who is delighted to have 1.5 – 2 more live born per litter than before.

The positive effect is probably due to the fact that the sows lose less weight during the lactating period, which benefits the number of pigs in the next litter. But this is not the only positive effect, says Kristina Sonne:

"We wean the pigs at five weeks and after transferring to the new standard, we can use less weaning feed and switch to liquid feed one week earlier than previously. In fact, we use 30 per cent less weaning feed now," says Kristina Sonne.

SEGES DANISH PIG RESEARCH CENTRE ESTIMATES THAT THERE IS DKK 15-20 PER YEAR SOW TO BE SAVED IF NURSING FEED IS MODIFIED. SPECIFICALLY, IT IS POSSIBLE TO SAVE AROUND DKK 3 PER 100 KG FEED BUT STILL OBTAIN THE SAME YIELD IF THE 2015 STANDARD IS REPLACED WITH THE NEW ONE.



## MAINTAIN EFFICIENCY - USE THESE THREE TOOLS:

- > Supplement the production concept with a production monitoring system. In this way, you'll receive an early warning should there be any errors with the feed, should diseases occur or other issues crop up that could affect productivity
- > Check the efficiency figures on a regular basis using e-control for each batch of finishers. This gives more e-controls every year and consequently more robust statistics because each e-control starts and ends with 0 pigs in the status. Additional e-controls, which are reliable, result in more action points in the units
- > Maintain a logbook of the details for each batch. The logbook should note the temperature of the unit when the pigs enter. It must be 22°C measured on the concrete surface of the pen. The logbook should also note the degree of grinding used for the feed for each batch produced
- > Be systematic – it works

- > The concept began with six pilot farms. The pilot farms are ordinary farms testing the concept and are helping to build up experience for ongoing improvements
- > The concept will be expanded by taking on more pilot farms during the autumn. These will help to test out the concept
- > Five advisors from DLBR and Danish Crown are taking part in the concept testing

# THE FINISHED PIG PRODUCTION CONCEPT DELIVERS GOOD RESULTS

**The aim of the finished pig production concept is clear: the pig producer should earn more per finished pig thus making production more profitable. Creating more jobs is another ambition. The preliminary results from the concept are promising.**

Figures from the production concept's pilot farms across Denmark make welcome reading for Joachim Glerup Andersen who is responsible for the project at SEGES Danish Pig Research Centre.

It is a new approach to monitor feed consumption and daily gain combined with housing temperature and water consumption.

This real time data is one of the explanations for the good results.

*"All the participants have improved their results, and earn an average of DKK 14 more per finished pig. And we've seen one example where a producer earned an incredible DKK 26 more, which is excellent."*  
*Joachim Glerup Andersen, who is responsible for the project at SEGES Danish Pig Research Centre*

"But monitoring is not the only reason of course – it's also important to be proactive.

With real time data, we can react fast and make adjustments if we see something that is not as it should be", Joachim explains.

### ACTION AND FOLLOW-UP MEAN ECONOMIC BENEFITS

The pilot farms have made particular headway in feed consumption and daily gain and have produced higher profits as a result, but an additional effort has been required in all areas.

"We have a list of requirements and actions that the farms must comply with in order to take part; in particular to maintain their efficiency. The list comprises 100 action points, but most farms already follow 80 of these so it is not as difficult as it perhaps sounds,"



Regular monitoring at the farms is another reason for the success. Advisers from either DLBR or Danish Crown are on hand to offer advice or act as a sounding board. A good result is also a motivating factor in itself.

"The pilot farms are highly motivated to progress and become even more successful, which makes it a very good starting point," says Joachim. His view is confirmed by Bjarne Feldthusen, who heads up one of the successful pilot farms.

"The increased focus on what we're doing on a daily basis has a very positive effect. The fact that we can make ongoing adjustments is highly motivating and it makes a difference that we can see that what we're doing has an effect," Joachim says, adding:

"Our participation has meant that we've made positive adjustments to daily gain and feed consumption, so that's a plus for us."

# SUNDHEDSSTYRINGEN'S (SUS) GROUNDBREAKING DISCOVERY



*"We had to tread carefully. We couldn't accuse anybody of something we couldn't prove, but on the other hand, when pigs are under suspicion, it means a lot of cost and inconvenience for pig producers."*

*Bjørn Lorenzen,  
Head of Sundhedsstyringen.*

**Inexplicable blood test results and false positive tests became a minor mystery for Sundhedsstyringen. A vaccine, which was new in the Danish market, turned out to be the cause. But the road to that answer was long and unpredictable – and ended up as groundbreaking news.**

In Denmark, we deliver world-class pig health. As opposed to many other countries, we have been successful in reconciling health and commercial interests. This means that we can sell our pigs to Danish as well as foreign buyers at a higher price. But in order to maintain our high status and goodwill, it is important to be always aware of irregularities in Danish pig herds. When a number of positive blood tests for the lung disease Ap2 started appearing in early 2016, Sundhedsstyringen (SuS) was on the alert. Despite the positive blood test results, the pigs were not ill, and none of them coughed. Sundhedsstyringen, therefore, started investigating possible causes. It turned out that the common denominator for all the

herds was the use of a new vaccine against the disease, Leptospirosis. This was a vaccine that had only been on the market for a short time, and was sold with the interim approval of the DTU Veterinary Institute.

"We had already suspected the Leptospirosis vaccine, Isovac Lepto 3, of producing a false test reaction, but this idea was rejected by the producer of the vaccine, so we had to continue working and find our own explanation," said Bjørn Lorenzen, Head of Sundhedsstyringen.

But the mystery did not end there. The tests turned out to be positive using one test method and negative with another.

Additionally, only the sows tested positive, their offspring did not, which is quite unusual with an infectious disease like Ap2.

"We could certainly identify a pattern, but we just couldn't explain it," adds Bjørn Lorenzen.

#### **BALANCING ACT WITHOUT PROOF**

During the first half year, Sundhedsstyringen asked the veterinarians to avoid testing the sows that had received the suspect vaccine. "We couldn't prove anything so while we worked on finding an answer, we had to control everything closely, and help the herds out of the conditional status required by the test results," explains Bjørn Lorenzen, who was

forced to walk a tightrope with his colleagues while the uncertainty continued.

#### **A LIST GAVE A USEABLE TRAIL**

In September 2016, Sundhedsstyringen received information as to which herds had bought the suspected Leptospirosis vaccine. This enabled Sundhedsstyringen to prove two things: the herds where the vaccine had been used had a far greater risk of getting positive Ap2 blood tests. The same turned out to be the case for Mycoplasma, where seven sow herds had changed to a positive status over the past year. Also in these cases, only the sows tested positive – and without showing any other symptoms at all.

"We discovered the first inexplicable aspect with the reaction to Ap2, but that there could be one more, and that the pigs would actually react to two additional diseases that they were not vaccinated against, we hadn't foreseen at all – not even in our wildest dreams," says Bjørn Lorenzen.

"We had retained a number of herds in conditional status, and we were able to get these off the list quickly. But we had also made seven herds positive within one year – without them really being infected. This is, of course, extremely frustrating for the producers involved, but we couldn't do otherwise. With any indication of disease, we

have well established procedures that are always followed, and if we had released herds that were really sick, we would have ended up with different and bigger problems," Bjørn Lorenzen explains.

#### **BELT AND PROFESSIONAL BRACES**

Specific considerations such as these are part of the remit of Sundhedsstyringen which likes to use a belt and braces approach, underpinned by professionalism.

"We must always look after the buyer's interests, and our mantra is that everything we do must hold up in a court of law. We must always be able to defend our actions based on professional considerations. But at the same time, there is a reason for the SPF system. It must be easier to sell pigs with a known health status, so we can't just keep pig producers in an iron grip and make it

impossible for them to sell their pigs," says Bjørn Lorenzen.

When the explanation was established, Sundhedsstyringen produced a series of recommendations for veterinarians in order to avoid false positive blood tests.

#### **IMPORTANT FOR DANISH PIG PRODUCERS**

This is the first time for anyone ever to detect a pattern – as Sundhedsstyringen did in this case.

"Of course, we're proud that we found the reason so quickly so that the fewest possible herds were affected. It was exciting to be part of this groundbreaking discovery and important for Danish pig producers above all. It could have been very costly for them if we hadn't made our discovery," says Bjørn Lorenzen.

#### **FACTS ABOUT SUNDHEDSSTYRINGEN:**

Ensures that all SPF-approved herds have the correct health status, and that all SPF-transporters comply with all the regulations pertaining to the transport of SPF pigs.

- > There are currently approximately 2,850 herds with SPF health status
- > 78% of all pigs born in Denmark and 100% of all marketed breeding stock have a SPF status.
- > The herds participating in the system receive, depending on the type of herd, regular visits from SEGES' department

# PIGS WITH SYMBOLIC HEARTS, STRAW RACKS AND FULL TAILS

**A new trial shows that hanging tails can be a sign of an imminent case of tail biting. The way forward is a quick response and increased surveillance. This experience has been put to good use by Niels Aage Arve, the first participant in the government-backed "1 heart" scheme. Intact tails are proving to be good business for him.**

At Niels Aage Arve's farm in Hjortshøj, outside Aarhus, his sows are loose-housed throughout the production cycle—which means that straw, enrichment material, intense surveillance and intact tails are taken as a given.

"It's very satisfying, there's no doubt about that. They look very sweet with their long tails and most importantly of all, they seem to be thriving. It's good to see," says pig producer Niels Aage Arve.

Niels Aage Arve made the transition in 2012 when he built a new unit, and decided that his sows should be loose-housed, including in the farrowing unit.

*"Everyone was calling for higher welfare standards and I was convinced that there was a market for loose-housed sows. It meant that we would have a point of difference."*  
Niels Aage Arve, Pig Producer.

## GOOD BUSINESS

Demand was slow in coming, but when the heart scheme arrived this year, Niels Aage was ready. He was the first to join the 1 heart pig scheme because the requirement for loose-housed sows had already been met.

"We negotiated a decent premium and we delivered the first pigs with intact tails for slaughter in the Spring," says Niels Aage. His figures prove that the initiative has paid off.

"Because it's all gone well with fewer challenges than I expected, I feel very positive about it all."

## LOTS OF STRAW, ENRICHMENT MATERIAL AND SURVEILLANCE

Producing 1-heart pigs has not been an easy ride for Niels Aage. The stocking rate has been reduced by 15%, as the concept requires. Moreover, there is now straw for all livestock groups in all units, and it is quite a task to fill the 1,000 or so straw racks on the farm. Intensive surveillance has proved to be the way forward.

"If you detect tail biting early, you can distract the pigs and find the ones that bite. There should always be enough straw and the pigs should be stimulated by toys and rope," says Niels Aage, who also recommends remaining alert.

"If there are any problems at all with ventilation, feed composition or a feed stoppage, this can quickly cause problems such as tail biting.

"The most important thing is that we have the right conditions in place so that the pigs can grow with intact tails and without being bitten. And I think that we can give ourselves a pat on the back because we can make this work. But it's not something that you should do for the money alone because it requires extra work. You must find it interesting and your staff should also find it interesting, too," he says.

## HANGING TAILS ARE A SIGN

Apart from the fact that full tails are a requirement for the heart label, it is also a political objective to reduce the number of tail dockings in Denmark. SEGES Danish Pig Research Centre has, therefore, been running a number of trials and tests over the past year, which have focused on pen design and automated alarm tools in order to see

whether it is possible to identify cases of tail biting before they occur. The trials have shown that one of the clear indications that biting is imminent is hanging tails.

A trial using video surveillance in the pen carried out at Niels Aage Arve's farm showed that the number of hanging tails in piglet pens where an outbreak of tail biting was imminent was 30% while it was 15% in pens without an outbreak in the same section – i.e. twice as many hanging tails. The trial also showed a linear relationship between the percentage of hanging tails and tail-bitten pigs. That means the more tail-bitten pigs in the pen, the more hanging tails, explains project manager and PhD student Helle Pelant Lahrmann.

The results are supported by data collected from individual cases the day before a tail biting outbreak occurs. Video recordings showed that tail-directed behaviour before visible tail damage also affected the tail posture, which became more defensive after a pig had been exposed to tail directed behaviour.

"Tail posture could, for example, change from curling to hanging after a pig had been subjected to tail sucking or tail biting," says Helle Pelant Lahrmann.

## SOME ADVICE

Overall, the results indicate that changes in tail posture are a means by which imminent tail biting pens can be identified days before the event.

The project manager's advice is: "If you see hanging tails in a pen, then check the pigs one extra time, and react if any pigs have injuries on their tails. The earlier the tail biting is discovered and stopped, the greater the chance that severe tail damage, leading to a need for antibiotic treatment and a move to a hospital pen, can be avoided."



THE LABEL HAS BEEN DEVELOPED BY DENMARK'S MINISTRY FOR THE ENVIRONMENT AND FOOD IN CO-OPERATION WITH STAKEHOLDERS FROM THE ENTIRE FOOD-CHAIN, INCLUDING THE DANISH AGRICULTURE AND FOOD COUNCIL.



**BETTER WELFARE**

- > Curly tails
- > More straw
- > More space
- > Loose-housed sows
- > Max. 8 hours transport

**BETTER WELFARE**

- > Curly tails
- > Even more straw
- > Even more space
- > Loose-housed sows
- > Max. 8 hours transport

**BETTER WELFARE**

- > Curly tails
- > Much more straw
- > Much more space
- > Loose-housed sows (outdoor)
- > Outdoor area
- > Piglets and sows outdoors
- > Max. 8 hours transport

# THE LABORATORY PROVIDES THE ANSWER

At the Laboratory for Pig Diseases, a strong team of laboratory assistants, technicians and veterinarians are continuously engaged in ensuring existing analysis methods and developing new ones to benefit health, efficiency and profitability.



Every year, the Laboratory for Pig Diseases in Kjellerup conducts around 250,000 analyses of blood samples from Danish pig farms. The majority of these blood samples derive from SPF herds and ensure that the pigs can be sold with a recognised SPF status.

"The serological analysis helps to ensure that the pigs can be sold with a known SPF status. Therefore, the quality and efficiency of the analysis is important for everybody in the team," explains Anne-Grete Hassing-Hvolgaard, who heads up the laboratory.

## DISEASES WITH AN UNKNOWN CAUSE

Autopsies are another of the laboratory's services. They are important when a disease with an unknown cause breaks out in a herd. Autopsies can reveal causality and thus ensure that the animal receives the best possible treatment. There are also extended

health checks, whereby a number of animals or organs are examined to ensure a more precise diagnosis.

*"Autopsies are one tool out of many used to produce a correct diagnosis. An autopsy, therefore, which does not determine a cause, can also be a good source of information because we can then start looking for other reasons for the problems."*

*Anne-Grete Hassing-Hvolgaard,  
Manager, Livestock Diagnostic Lab.*

## QUICKLY AND EASILY

The laboratory now also provides a PCR-diarrhoea package, which can check for *Lawsonia intracellularis*, *Brachyspira pillisicoli* and *E. Coli F4* and *F18*.

"We're continuously trying to find new and more economic methods to analyse blood samples, etc.," says Anne-Grete.

The latest step in this direction is Multiplex, an analysis method that builds on the latest technology and which makes it possible to check for several diseases in a single sample.



*The Laboratory for Pig Diseases employs 19 laboratory assistants and technicians and seven veterinarians*



"The laboratory is now able to distinguish between Ap2, Ap6, Ap12 as well as the two PRRS types, which is something that veterinarians and producers have long wanted the Laboratory for Pig Diseases to be able to do. This is a significant improvement which we're very pleased about," says Anne-Grete.

"All in all, through providing secure and fast diagnostics, the laboratory helps the producer to choose the best treatment strategy for his herd so that earnings can be increased and the standard of well-being among the herd increased. Laboratory diagnostics can also help the producer use the correct antibiotics, thus reducing the risk of developing resistance."

## THE LABORATORY FOR PIG DISEASES PERFORMS:

- > Around 500,000 sets of analysis for antibodies from Danish pig herds as well as a long list of other diagnostic tasks.
- > 4,000 pig autopsies
- > Bacteriological studies
- > Semen studies

# IDEAS FOR SOME GENEROUS LIONS

Good ideas for increasing the piglet survival rate are always welcome at SEGES Danish Pig Research Centre. The "Lions' Den" provided an opportunity for people to pitch their ideas and be in with a chance of winning a substantial sum of money.

"Any ideas on how to increase the piglet survival rate? Imagination is your only limit!" This was the challenge set by the lions earlier in the year to pig producers, trainees, advisors, companies, veterinarians and others with an interest in the pig sector. The lions, who comprised two pig producers, a veterinarian and a consumer expert, then assessed the ideas. The owners of the four best ideas received financial awards while one participant has received support to develop his concept.

"The point was to see what good ideas were out there to help us increase piglet survival. We're well aware how inventive and original some people can be and this was a more popular way of tackling the subject," says Project Manager Dorthe Poulsgård Frandsen.

## FROM APP TO PIG ELEVATOR

Among the ideas considered by the lions was a pen that could be raised or lowered. In other words, when the sow stands up, the platform on which she is lying rises and when she lies down, the platform is carefully lowered. This means that the piglets are kept away from the sow and are in no danger of being crushed. The product is known from Holland, but has not been tried and tested in Denmark. The DKK 70,000 from the lions will help towards

testing the product's functionality and practicality.

Another idea that received a roar of approval and a fair chunk of money was from three students from Dalum School of Agriculture. Their idea is an app which will make planning in the farrowing unit more manageable and targeted and help to deliver results for the individual farm and increase piglet survival. The app is controlled from the computer where each employee's duties can be entered in and maintained by the farm manager.

"We've all been to pig farms where we've seen that a lot of time is spent asking about various routine tasks. The app enables you to know what you have to do and how to do it. We've told farmers and our fellow students about



## THE FIVE IDEAS

- > The farrowing pen lift was awarded DKK 70,000
- > The app for work planning received DKK 50,000
- > Heated mats to put behind new born pigs received DKK 60,000
- > A new type of feed mix aimed at reducing outbreaks of diarrhoea was awarded DKK 20,000
- > The Game of Piglets computer game designed to help embed working practices in the pig unit was not awarded any money but will be followed and supported

our app and they're impressed and can clearly see its potential," says Kris Peter Poulsen, one of the inventive students. He was very enthusiastic about the chance to enter the lions' den.

## WE NEED TO TEST TO SEE WHAT WORKS

"There was an innovative mix of ideas. It was quite gutsy to challenge us with the pen lift and we enjoyed the Game of Piglets, which attracted a lot of attention – and is helping to spread awareness of pig production in a different way. And having a young people's view on things is always welcome – as we did with the agricultural students," says Dorthe Poulsgård Frandsen.

"Now we hope to see some fresh thinking or new methods as a result. If nothing else, we will find out whether the idea is feasible or not – and that's important too."

*"It was really exciting to be part of the project and we had a good exchange of ideas. We also got a lot of the lions' feedback because they saw many things that we hadn't thought of. Without money from the lions, we wouldn't have had the chance to get any further."*  
Kris Peter Poulsen.

## THE LIONS:

- > Mette Gammicchia, Head of Department, Sales, Nutrition and Market Development at the Danish Agriculture and Food Council
- > Danni Sørensen, owner of Store Vognsbæk near Frederikshavn with his brother Jonas. Member of the Innovation Council
- > Jesper Tambour, owner of Havmosegaard on Lolland. Mentor on the PattegriseLIV (Piglet Life) project, member of the Innovation Council
- > Jens Strathe, Veterinarian and co-owner of HyoVet, Silkeborg, member of the Innovation Council

# NEW DANAVL PROVIDES A STRONG PLATFORM FOR INTERNATIONAL GROWTH

**After some bumps along the way, work on DanAvl's future strategy is back on track. The new DanAvl company is expected to be launched in the New Year.**

The essential requirement for starting the new breeding company was always to secure the broad backing of breeders, multipliers and Danish pig producers. This is why certain adjustments were made to the first model. The free trade in gilts in Denmark has made a difference to the doubters, says Erik Larsen, Chairman of the Danish Agriculture and Food Council, Pig Production. It increases the likelihood of the new DanAvl company getting off to a good start and delivering results.

Pig producers around the world continue to make ever higher demands on genetics. And so do we, which is why we have a very com-

petitive breeding programme. We're seeing an increasing demand for Danish breeding pigs across the world even before the new company has got off the ground.

And there is every reason to get started as soon as possible because there are even more opportunities ahead. The new DanAvl will enable us to strengthen our market building, marketing and offer greater support to our customers.

## **HIGH EXPECTATIONS**

The new DanAvl company is expected to be launched at the beginning of 2018 and one of the first steps will be to examine the market potential outside Europe. The plans for DanAvl are ambitious and there is good reason to look forward to a significantly strengthened position in the international market: a dou-

bling of exports over the next five to six years is not unrealistic. The objective is clear: to generate higher earnings for Danish pig production to help fund future breeding work and make Danish pig producers more profitable.

It is important that Danish pig producers have access to world class genetics, which is why DanAvl should be able to hold its own against competition from other breeding companies.

However, we must invest significant resources in order to remain at the forefront and to develop. Technological development creates many new opportunities. Our DNA analysis and genomic selection of all breeding stock is well on the way to providing a boost to our breeding programme.



THOMAS MUURMANN HENRIKSEN IS THE NEW DIRECTOR OF DANAVL. HE WAS PREVIOUSLY CEO OF DANBRED INTERNATIONAL. ANDREAS LUNDBY IS CHAIRMAN. HE IS THE FORMER VICE CEO OF ARLA FOODS AMBA.

# EFFECTIVE DISEASE MONITORING MAINTAINS HIGH LEVEL OF SECURITY

## Constant monitoring and rapid reaction ensure maximum security at Danish pig farms.

African Swine Fever, Classical Swine Fever and Foot and Mouth Disease are all serious viral diseases that can bring a sudden and immediate halt to Danish exports of live pigs and pig meat.

Denmark has been free from these diseases for decades and we will do everything we can to maintain the status quo. We can only maintain our rising exports of live pigs, now around 13.5 million pigs per year, if we keep protecting Denmark against them.

"Apart from the serious international diseases, a disease such as PED can quickly change a foreign customer's desire to buy Danish pigs. PED is not subject to official monitoring in the EU and there is no requirement to combat it in legislation. Consequently, it is particularly important that everyone in the industry takes the current challenges in relation to infection protection very seriously," says Bent Nielsen, a veterinarian and director, Veterinary Business at SEGES Veterinary & Quality Services.

## MONITORING OF SERIOUS PIG DISEASES

At SEGES Danish Pig Research Centre, we follow the development of African Swine Fever and PED very closely and we actively monitor both diseases. Unfortunately, African Swine Fever has spread to the Czech Republic, Ukraine and Moldova and cases arise in these countries almost on a weekly basis.

At the Laboratory for Pig Diseases in Kjellerup, we extract material from dead pigs that have been sent for an autopsy. The laboratory performs around 4,000 autopsies per year. Every week, veterinarians examine the organs from pigs that have shown symptoms of African Swine Fever or PED. Every month, the laboratory examines 24 pigs for African Swine Fever and 15 for PED. Swine Fever and PED analyses are then conducted at the DTU Veterinary Institute, which is EU approved for carrying out these examinations. Fortunately, all samples have proved negative so far.

## NEW VIRUS ALERT

We have an ongoing collaboration with the DTU Veterinary Institute with regard to the monitoring of a new virus that can impact Danish pigs.

"We do this so that Danish pig producers can be secure in the knowledge that we constantly remain updated. We detect whether a new virus has arrived in the country and quickly send out an alert about its status and severity. In this way, pig producers have one less thing to worry about," says Charlotte Sonne Kristensen, who is a veterinarian and head of department at SEGES Danish Pig Research Centre.

In late summer, we saw the latest example of a virus, which was discovered through our monitoring procedure.

We registered a new virus, PCV3, and alerted slaughterhouses and veterinarians and published the news on our website.

"In Denmark, we found the virus in both well-functioning herds and herds with certain challenges. Our message was that Danish farms probably don't need to worry too much about this virus. However, if anyone has an issue with his/her herd, then we are willing to help to solve it," says Charlotte Sonne Kristensen.

## ADVICE ON INFECTION PROTECTION:

- > Remember to check your washing certificate – you can use tjekvogn.dk or the app TjekVogn
- > Comply with all the quarantine regulations – if you or your employees have travelled outside Denmark
- > Leave the hunting trophies behind – if you have shot a wild boar in an area with African Swine Fever, do NOT bring it back to Denmark
- > Contact your veterinarian as quickly as possible if you suspect there is any disease in your herd

### N.B:

**It is always the individual herd owner's responsibility to ensure that infection protection is maintained by everyone involved with the herd.**





# EXCITING NEW PROJECTS IN 2018

Every year, SEGES Danish Pig Research Centre undertakes a number of tests and analyses and generates new professional knowledge – all of which is based on a comprehensive innovation programme. The objective of our work is to strengthen Danish pig producers' expertise and competitiveness in the global market.

## WE ARE WHERE YOU ARE

You can always find the most up-to-date knowledge at [svineproduktion.dk](http://svineproduktion.dk) where we publish all our results. The site has been relaunched with the aim of making it even easier for you to find the information you are looking for. Everything you need is always at hand – via your computer, tablet or smartphone.

One of the major changes is the structure of the Knowledge section. There are now three main groupings where you will find all the information you need for your work in the housing units and the office. There are also

manuals and instructions giving details of work procedures.

The results of our research are still available under Publications.

You can also sign up to our weekly newsletter, which will enable you to remain updated on the latest news from SEGES Danish Pig Research Centre. You can do so via [svineproduktion.dk](http://svineproduktion.dk)

We also invite you to visit us on Facebook ([facebook.com/altomsvineproduktion](https://facebook.com/altomsvineproduktion)) where you will find news, inspiration and interesting

discussions. We also share the results of our research and offer specific advice that you can use on your farm. **We're looking forward to your visit and to hearing from you via one of our many platforms.**



See the list of all the projects here: [svineproduktion.dk/projekt2018](http://svineproduktion.dk/projekt2018)

IN 2017, WE RAN MORE THAN 100 PROJECTS AND A SELECTION OF THEM ARE COVERED IN THIS MAGAZINE. THERE ARE ALSO MANY EXCITING TOPICS ON THE LIST FOR 2018. SOME ARE LISTED BELOW:

- > Climate and environment improvements
- > Better housing systems
- > Hyper-prolific sows
- > Feed4Life – more viable piglets at farrowing
- > High weaning weight and healthy pigs from 7 to 30 kg
- > More efficient feeding of pigs
- > More company trials and control rounds
- > Broad beans for sows
- > Production of non-castrated entire males
- > Immuno castration
- > Entire males without boar taint
- > The impact of feed on our environment
- > Phosphorus phase feeding for finishers
- > Amino acid profile for lactating sows (environmental norm)
- > Better pig health
- > Antibiotic-free production (GUDP project)
- > Alternatives to medicinal zinc
- > Production of organic pigs and improved feed consumption
- > Management and leadership
- > Digitalisation in pig production
- > Establishment of analysis database for automatic data collection



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