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Roland van Asten: “Fermentation is sustainability in action”

Accounting for around 50% of the total, feed is the largest cost item in sow farming. - Piglet producer Roland van Asten successfully relies on fermentation.

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At the van Asten farm six GRP fermenters, each with a capacity of 25 m³, are available for fermenting the feed. (Image source: Arden)

Especially last year, the skyrocketing feed costs hit pig farmers hard. It is true that prices have normalised somewhat in the meantime. In view of the many global crises, however, the situation can change again any time. Climate change also plays a role. The risk of declining yields due to persistent drought is increasing, and, according to weather experts, it seems we will have to expect large-scale crop failures more frequently in the future.

It is therefore worth taking a closer look at the feed and identifying potential savings in your own operation. This is especially true for sow farming. Here, feed is still by far the largest cost item, accounting for around 50% of the costs.



Roland van Asten has 15 years of experience with fermented feed. (Image source: Arden)

Roland van Asten is a person who pays close attention. For 15 years already, he has relied very heavily on the fermentation of pig feed. In the beginning, the farmer learned to his cost. The fermentation process did not work well because he still knew too little about the process. So he got help from professionals. “I looked at fermentation at a yoghurt maker, collected hints and implemented a

lot of them on the farm. I am now 100% convinced of the benefits to the digestibility of feed”, the 47-year-old entrepreneur explains.

7.5% less feed per sow

Roland van Asten leaves no doubt: the investment of a good 50 euros per sow including piglet rearing pays off. A look at the farm data and extensive on-farm trials including control and experimental groups show: van Asten saves 7.5% feed per sow per year – that’s around 100 kg. At current prices, his feed strategy means cost savings of at least 35 euros per sow per year.

His strategy is also paying off in the rearing piglets. On-farm trials show that the feed conversion ratio of weaned piglets decreases when feeding fermented feed. “The saving per animal is 2 euros. The effect is based, among other things, on significantly better feed conversion and higher protein digestibility”, van Asten reports.

However, the economic advantage is only one aspect for the Dutch sow farmer. What he likes about fermentation is that the body condition of the sows is much better during the gestation period. By gestation day 110, sows fed fermented diets in the trials gained almost 10 kg more weight despite less feeding. They built up more back fat and showed a larger muscle area. With an output of 32.4 weaned piglets per sow per year and a suckling period of four weeks, this is an advantage that should not be underestimated. In addition, the litter weights at birth were over 400 g higher, the litter weight on the fifth day of life was 1.1 kg higher.



Roland van Asten and farm manager Jan Derk Oosterveld regularly check the taste and consistency of the fermented feed. (Image source: Arden)

According to farm manager Jan Derk Oosterveld, the increased figures in relation to the suckling piglets are mainly a result of higher milk production. The use of the fermented feed improves the sows' intestinal movement even on the days around birth. This is because the digested feed moves through the digestive tract much more easily and intestinal obstruction occurs less frequently.

Thanks to faster peristalsis, fewer coli infections and inflammations occur. "This results in healthier sows, more milk in the udder, less piglet diarrhea and lower animal losses," Oosterveld explains. Sow losses have decreased by 2.3% to below 5%, suckling piglet losses are currently at 10.7%, and only 2% of piglets are lost during rearing. The data refer to almost 13,000 litters.

Roland van Asten relates the health benefits primarily to the rapid pH value reduction of the fermented feed. "The feed soup has a pH of 3.4 to 3.6. This supports the bacterial defense already in the stomach, which has a positive effect on the rear sections of the intestine," reports the entrepreneur. Furthermore, he observes that the sows and piglets like to eat the slightly acidic feed very much.

Batch process is set

To ensure that the good results last, Roland van Asten is meticulous when preparing the fermentation feed. He relies on the so-called batch process. In this process, each of the six GRP fermenters is freshly filled, the complete feed soup ferments to pH value of 3.4 to 3.6 and is then completely fed out. This is followed by thorough cleaning of the tank with hot water. “We always work on the in-out principle. This is the only way we can be sure that the fermentation process runs safely and that there are no faulty fermentations,” van Asten emphasises.



The fermentation has been successful if the feed is creamy and tastes slightly sour. (Image source: Arden)

The team at the farming location in Neumark, Thuringia, also takes a stringent approach to filling the fermentation tanks. In a separate mixing tank, the feed to be fermented is first mixed together in several steps.

In the first step, approx. 65 °C hot water from the company's own biogas plant is filled in.

Then farm manager Jan Derk Oosterveld fills either a barley-wheat mixture or a combination of soybean meal and wheat into the tank, with mixing ratios in both cases at 50:50. The food is left for about 15 minutes so that the temperature can settle.

Afterwards, cold water is added until the temperature is between 35 and 38 °C. According to Jan Derk Oosterveld, this is ideal for the fermentation



*All components are mixed in the premixing tank before the ferment mixture is pumped over.
(Image source: Asten)*

process.

In the last step, the bacteria are added to initiate the fermentation process. Roland van Asten sets clear priorities here. He does not use inoculated raw materials and instead prefers bacteria that are delivered dry in granulate form

and then activated on the farm. To do this, liquid is added to the granules. “Since the fermentation process starts faster and harmful environmental germs don’t stand a chance, the procedure is much better,” van Asten cites the advantages.

Finally, the finished fermentation mixture is pumped into one of the six 25 m³ fermenters. After about 18 hours, the mixture is fully fermented and can be fed to the sows and piglets.

North
Rhine-
Westphalia

Lower
Saxony

Saxony-
Anhalt

Thuringia

Hesse

Neumark

Farming of Roland van Asten

Animal population (Neumark site):

5,000 sows (Topigs TN 70), 24,000 piglets,
2,500 gilt rearing places

Staff: 21 employees (full time) in the
stable

Further information: ITW standard in sow
and piglet area, 800 kW biogas plant, 1.8
megawatt PV system

Fermented protein feed

In addition to the fermentation of the classic grain components, improving the digestibility of protein feeds is now also part of the routine. At present, only soybean meal is fermented. “It is important to use the right bacteria. We experimented for a long time and about two years ago our supplier Ronald Schölten found suitable bacterial strains. These digest the protein feed very well and quickly producing only very few acetic acid. Too much acetic acid causes the pigs to stop eating the feed,” explains Roland van Asten.

The result speaks for itself: He was able to reduce the crude protein content by 2% to 3% in all four piglet-rearing diets. This relieves the nutrient balance of the farm enormously.

Roland van Asten and his team have now reached the point where they no longer shy away from high ferment content in sow and piglet feed. The mixing ratios of the protein ferment (soy plus wheat) and the barley-wheat ferment are shown in Overview 1.

[1] Ferment proportions in the rations

	Soy-wheat ferment, % ¹⁾	Barley-wheat ferment, % ¹⁾
Pregnant	2	30
Lactating 1	14.5	16.5
Lactating 2	27.8	6
Gilts 1	22.4	5.6
Gilts 2	12	7
Piglets 1	15	0
Piglets 2	16	8.5
Piglets 3	16	15
Piglets 4	16	17

1) Mixing ratio 50:50 Source: van Asten

The van Asten farm feeds fermented feed in all barn areas. Fermented soybean meal is included in every ration. (Image source: Asten)

The feed for pregnant and lactating sows currently consists of over 30% fermented components.

“Our experience is that we can even increase the ferment content to 40%. This



The condition of the lactating sows is very good thanks to the higher weight gain during the gestation period. (Image source: Asten)

depends above all on which other components are contained in the rations. Pre-fermented by-products, for example, limit the amount of fermented feed we can use,” reports van Asten.

For gilts, the mixing ratios are therefore lower. This is because liquid by-products are used here that have previously undergone a fermentation process themselves. Roland van Asten emphasises: “It is important that part of the feed is always not pre-fermented and is digested by the pigs themselves in the large bowel. Only then do the bacteria there get enough to eat.”

In piglet rearing, van Asten starts with 15% fermented components in the mix and ends at 33%.

For the past four years, the suckling piglets have also been fed ferment feed. From the first to the seventh day of life, all animals receive starter ferment and dextrose via the suckling piglet supplementary feeding system. “This way we

promote the intestinal health of the young piglets and give them energy at the same time,” says van Asten. From the seventh day onwards, Prestarter with 7.5% soy-wheat ferment is fed.

Production costs 18 euros per sow

As part of the farm fermentation trials, the sow farmer recorded the costs in detail. In addition to the above-mentioned investment costs, there are running costs for hot water preparation, bacterial cultures, labour, etc. The individual cost items are listed in Overview 2.

[2] Costs of feed fermentation

	Hot water ¹⁾	Starter cultures	Labour	Total
Sows	11.20	4.80	2.25	18.25
Finishing	1.30	0.55	0.20	2.05

1) Hot water preparation with oil

Image source: Asten

It costs the van Asten farm at least 18 euros to produce the fermented feed. (Image source: Asten)

Accordingly, the production of fermented feed costs at least 18 euros per sow and 2 euros per finisher.

“For me, despite the costs, forage fermentation is the way forward. The animals are healthier, I need less medication, the use of nutrients is reduced, the climate is protected and biological performance increases. All this makes my business more sustainable. And that will play an increasingly important role in marketing in the future,” Roland van Asten emphasises.

Conclusions

- Roland van Asten ferments the sow and piglet feed.
- The production of the fermented feed costs the farmer 18 euros per sow including piglet rearing.
- However, this saves him around 100 kg of sow feed. This corresponds to a cost advantage of 35 euros per sow.
- Further advantages are: better animal health, reduced use of medication, lower nutrient requirements and increased biological performance.