KDV magazine

for the Sustainable Pork Value Chain

no. 03.

THEME:
A COMPELLING MESSAGE

Bart and Jodie Jannink:

‘Pig farming is the best thing there is’

The pork market is thriving

Is meat a guilty pleasure?

Honest communication about sustainability

DUURZAAM VARKENSVLEES

Real solutions for real farmers

The Sustainable Pork Value Chain (KDV) advocates sustainable pig farming. We are a 100% Dutch chain with over 250 affiliated farms, meat processors, butchers, and retailers. By sustainable, we mean: continuous improvements in animal welfare and the environment. We take an integrated approach, which distinguishes us from single-issue initiatives. To ensure a sustainable future for pig farming, we focus on eight themes:

1 **Healthy pigs**
We have stringent requirements regarding issues such as antibiotic use, salmonella, and slaughter findings.

2 **Care for mother and piglet**
Our piglets stay with their mothers for longer, and sows are given nesting materials around the time the piglets are born.

3 **The pig's living environment**
Daily manure removal improves conditions in the sty. Enrichment materials, such as lucerne, are also provided.

4 **Mineral cycle**
We extract the minerals from manure, return them to the cycle, and reduce mineral loss by improving their absorption by the animals.

5 **Biodiversity and soil**
We strive to reduce the disruption caused to soil life by manure as much as possible by minimising the use of antibiotics and the amounts of copper and zinc in feed.

6 **Carbon footprint**
We aim to make the chain energy-neutral through energy-saving measures, daily manure removal, immediate manure processing, and digestate processing.

7 **Food safety and quality**
We produce high-quality food. Our participants may only give their pigs feed that complies with the KDV Raw Materials List. Any soya used in pig feed must be RTRS certified. KDV is certified by an independent certification body.

8 **Smart Farming**
We have achieved the ultimate track and trace system through the innovative use of electronic ear tags. Our piglets are given an ear tag with an RFID chip at birth. This registers the entire history of each individual animal.

DUURZAAM VARKENSVLEES

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A compelling message with KDV

Welcome to the third edition of the KDV magazine. This magazine explains in detail what we do, why we do it, and where we see opportunities for development. We are excited to tell you about our vision, the choices we make, the latest developments, and the opportunities in the market.

Because we have an integrated approach, it is impossible to encapsulate our message in a single sentence. Our focus is broad, yet it is still possible to tell consumers a compelling story about what we do.

In this edition, our aim is to make the story a simple one with no complicated technical details or complex KPIs. We wanted to give you tools that would make it easy to share our message with consumers. We think we've succeeded.

Inside, you'll find 'elevator pitches' about our methods and principles, answers to frequently asked questions, the dos and don'ts of communicating about meat, and even a cutting-out sheet for creating your own miniature sty. And, of course, this edition is packed with stories from our dedicated and passionate farmers and colleagues.

I hope you enjoy reading this magazine and that it inspires you to proudly share our wonderful message.

Jaap de Wit Jr.
Chairman of the Sustainable Pork Value Chain Foundation

'We have an integrated approach to sustainability, and we want to be able to explain that in a single sentence'

Record, analyse and improve

Gertjan van der Doelen operates a breeding farm in the Dutch municipality of Bernheze. His income mainly comes from breeding, but he also raises meat pigs. Gertjan has been a Smart Farmer since 2018. Every piglet born on his farm is given an RFID ear tag. 'I can track every animal. We record every sickness and mortality, and I can see that data immediately on my dashboard and respond to it,' Gertjan explains. For him, Smart Farming is clearly the way forward.

Of course, Gertjan observes the pigs himself when he's in the sty. 'But the information you get on your phone or computer gives you more insight, especially when you see it over a longer period,' Gertjan tells us. The Smart Farmer can record each piglet's father, mother, mating date, birth date, and gender in the app. Gertjan's customers also use the app, and the information about each pig can be shared easily. It's a closed system with numerous benefits; it dramatically reduces the risk of errors and improves efficiency. 'I can deliver pigs without slaughter tags, which removes one step in the process,' Gertjan confirms. The farmer is enthusiastic about using the app, although he admits that the initial setup requires a time investment. 'You need to ensure the system is correctly set up before you start, for example, by creating enough RFID ear tags in advance,' says Gertjan. I was one of the first to use it, so I had to figure things out together with Westfort. Now, there are farm coaches, and you make quick progress with their help because the basics are easy to pick up. Once you've got the hang of it, it goes very smoothly. If you can use a phone, you can use the app.'

Over time, the availability of hard data has become increasingly important for Gertjan. 'I really like working with data,' he says with a smile. It provides him with valuable insights. Gertjan explains, 'We started making accurate records of which pen a piglet was born in and which sections it was moved to afterwards. We discovered a correlation between mortality rates on our farm and the ventilation levels in each section, which we could then adjust. You start by keeping records, and then you can analyse the results and make improvements.'

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'A healthy pig is our top priority'

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Sustainable pork.

How do you explain that?

Meat and sustainability aren't seen as a good match. Plant-based foods have a much better image. But is that fair? And can you generalise all meat in the same way? In terms of carbon emissions, pork and chicken score better than other types of meat. After all, the pig has always been a circular animal. They convert by-products that are unsuitable for human consumption into high-quality protein. In other words, the pig is a champion in the fight against food waste! We must improve how we explain this to our customers. And we must do it honestly so that people can make informed decisions about the sustainable choices that feel right for them.

A few months ago, we started to season, package, and distribute fresh meat at our new pre-packaging location in Oudewater. Rob de Bruin is the site's retail contact. Rob is a butcher who has worked for various supermarket chains, including Jumbo, Coöp, and Jan Linders. We asked him about the information that customers need. According to Rob, sustainability has become something of a catch-all term. 'One consumer thinks it means buying locally, another thinks it's about carbon footprints, while another might think it's about animal welfare. But the beauty of KDV is that every aspect of sustainability is included in the concept.'

This is the Sustainable Pork Value Chain (KDV):

100% DUTCH PIGS

The KDV initiative began on the Verhoeven family farm in Valkenswaard in 1997. Farmer Hans Verhoeven was convinced that pig farming could be made more sustainable if the entire system was overhauled. So he built a sty that prioritised pig health and enabled him to convert manure into energy and valuable agricultural resources. Inspired by his success, other farmers joined the chain. Today, over 220 predominantly family-owned farms participate in the KDV concept. We are a 100% Dutch chain, and we know our farmers personally.

HEALTHY PIGS

Our approach starts with ensuring healthy animals. Healthy animals are happy animals, and that leads to better growth. Good health starts with care for the mother and her piglets. That's why we ensure piglets stay with their mothers for at least four weeks to develop robust health and immunity. We have very strict requirements regarding antibiotic use and living conditions, and many of our farms meet the criteria for the 1-star Better Life label.

FLAVOURFUL MEAT

KDV meat is a premium-quality product. We have supplied butchers in the Netherlands for many years. However, our reputation for excellence attracts customers from all over the world. Every step in the chain contributes to the exceptional quality of our meat, beginning at the start of the chain with healthy animals. But the end of the chain is just as important. That's why we oversee every aspect of production to guarantee the fresh meat we offer has consistently superior quality, structure and flavour that really shines through when it is prepared.

HIGH PROTEIN

Pork boasts three times more protein than plant-based alternatives like legumes. It also contains vitamins and minerals that are essential for overall health but are not naturally available in these alternatives, such as easily absorbable vitamin B12 and iron. The more protein a food contains, the higher its carbon footprint. However, when you compare pork's protein-to-carbon ratio to that of plant-based alternatives, it comes out very favourably.

Product	Protein (g) per 100 g prepared product*	kg CO_2 eq. per kg product**
Legumes	8.2	2
Egg	12.3	4
Tofu	12.4	3
Chicken	25.3	5
40% fat cheese	25.5	22
Pork with 10-19 g of fat	28.4	6
Beef with 10 g of fat	30.2	59

3x

Pork contains three times as much protein as plant-based alternatives

GOOD CARBON FOOTPRINT

Pork has a relatively good carbon footprint, especially when considered in relation to the amount of protein it provides. At KDV, we calculate our carbon footprint annually and conduct research within our chain to identify where we can make improvements. Our members must adhere to strict standards that keep energy consumption as low as possible, and we take steps to further reduce the carbon impact of livestock feed, including guaranteeing that the soya we use is deforestation-free.

TRANSPARENCY IN THE SUPPLY CHAIN

KDV farmers are proof that it is possible to combine traditional animal husbandry with the latest technology. An innovative system allows us to follow each animal from birth. We compile a complete passport that details every event in its life, including where it was born, who its mother was, and any illnesses or medicines it has had. Everything is transparent and accessible.

* Source: NEVO table (Dutch Food Composition Database). ** Source: Poore & Nemecek, 2018.

SHARING OUR MESSAGE WITH CUSTOMERS

'We're investigating how we can communicate the KDV concept as simply as possible. Whether it's through packaging, shelf tags, brochures, or our online presence, we want to get that message across succinctly. We're investigating how these ideas are communicated in other countries. But, ultimately, nothing can compare to a personal story told to the customer over a shop counter. So it's essential that retailers can answer customers' questions and confidently explain why they choose KDV.'

THE INCREASING IMPORTANCE OF TRACEABILITY

Rob is convinced that traceability should be an important element in the message you give to customers. 'We may eventually use QR codes on packaging that allow consumers to clearly see which farm the product came from, perhaps even with a live stream of the sty. This level of transparency inspires trust. However, before we invest in this, we want to ensure it will add value.'

> 'It is essential that retailers can confidently explain why they choose KDV.'

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Our 10 most frequently asked questions

KDV gives you the answers you need

DUURZAAM VARKENSVLEES

1 What are the pigs fed?

Around half their feed is made up of by-products, which includes things like wheat bran, stale bread, and misshaped biscuits. It also includes the whey leftover from cheesemaking, which is a good source of protein. And our pigs love it! Pigs turn products that we don't want to eat into good sources of protein, just as they did in the past on traditional farms, where they were fed scraps. Soya accounts for less than 10% of their diet, and rather than being fed whole soybeans, they are given derivatives: soya oil and soya chaff. Soya oil is the world's most consumed vegetable oil, and soya chaff is by far the most popular source of plant-based protein for animal feed.

2 Is the feed you use grown on cleared forest?

Deforestation is primarily an issue with soya production. All soya products in the KDV chain are certified by RTRS (Round Table on Responsible Soy Association). However, we go beyond certification. We've worked with Solidaridad for many years on a project in Mozambique that supports small-scale soya farming. And next year, we will go a step further to guarantee that all our soya is sourced from areas where no deforestation has taken place for at least 20 years.

3 Is KDV the same as the Better Life label?

The Better Life label is awarded by the Dutch Society for the Protection of Animals and focuses solely on animal welfare. KDV originated on a real working farm and developed through practical experience. As well as prioritising animal welfare, KDV focuses on animal health and environmental impact, including energy consumption, carbon footprint, water quality, manure management, and soil health.

The Better Life label is based on a set of criteria about animal welfare. The KDV chain is a dynamic initiative that continuously explores and supports ongoing practical advancements.

However, KDV and the Better Life label also have much in common. The farmers affiliated with KDV operate within a closed chain, and, as with the Better Life label, they are inspected by an independent organisation. Both are well-established: the Better Life label has been in use for 15 years, and KDV has been active for 25 years. We share a common goal of promoting sustainable livestock farming in the Netherlands.

'A healthy pig is our top priority'

4 How are the pigs slaughtered?

KDV is a 100% Dutch chain. This means all our pigs are born, raised, and slaughtered in the Netherlands. This keeps the distance between the farm and the slaughterhouse short (an average of 85 km), which allows us to minimise the stress caused by transport as much as possible.

And stress is an important issue. Firstly, of course, because it impacts the animals' well-being. But it also affects the quality of the meat. Meat from animals that are tired or stressed has an abnormal pH value. We constantly monitor the pH value of our meat so we can guarantee that the animals have experienced minimal stress. After all, animal welfare and meat quality go hand in hand.

We take every measure we can to reduce stress at the slaughterhouse, such as by controlling light and noise levels. Most importantly, we ensure that the pigs are handled calmly. Pigs are stunned with CO_2 before slaughter.

5 Are the pigs allowed to roam outside?

No. In Europe, pigs are usually kept indoors. One of the advantages of this is that it allows us to control the conditions inside the barn. We can also ensure that the area around the farm is impacted as little as possible by things like smells and ammonia. Organic meat is an excellent option for those who prefer pork from pigs that have been allowed to roam freely.

6 How long do piglets stay with their mother?

A sow begins to exhibit nesting behaviour just before she is about to give birth. We encourage this by providing sows with a jute cloth to stimulate their nesting instinct. The piglets stay with their mother for at least four weeks and sometimes even longer. Because they are given plenty of time to drink their mother's milk, they grow well and develop robust immunity. After four weeks, they are moved to larger pens, where they live in groups. Many farmers give the piglets enrichment materials like lucerne. We are currently investigating the effects of extending the time piglets stay with their mothers to five weeks. If this proves to offer health benefits for sows and their piglets, it will be adopted as standard practice.

7 Does the meat contain antibiotics or hormones?

No. A healthy pig is our top priority. The combination of a healthy environment, good-quality feed and water, and rigorous hygiene ensures that the animals are less prone to becoming sick. We have strict requirements regarding the use of antibiotics and prefer that they are not used at all. Of course, when a pig is sick, it is given treatment, including antibiotics if necessary. After a pig receives antibiotic treatment, there is a mandatory waiting period before it can be slaughtered. This ensures that there are no antibiotic residues in the meat. Our pigs are given ear tags at birth that allow us to record all aspects of their life on the farm. Comprehensive information about each pig, including the use of antibiotics, can be read from the chip when it is slaughtered. The use of hormones in farm animals has been prohibited in Europe for many years.

8 Is pork healthy?

Pork can play a role in a balanced diet, according to the nutrition guide developed by the Netherlands Nutrition Centre (Voedingscentrum). Cuts with less than 10 g of fat per 100 g are included in this guide, for example, pork tenderloin, loin, fillet, and chops. But of course, you can also enjoy delicious, fattier cuts of pork, like bacon!

9 Are the pigs confined in cages?

Our pigs spend their entire lives in social groups, from birth to processing. However, sows that are about to give birth are separated from the group and kept in farrowing crates.

10 Is water added to the meat?

You won't find any added water in our fresh meat. Some meats, like bacon, are preserved by injecting them with a solution of water and salt in a process called brining. Any water content above 5% is clearly labelled on our packaging.

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The **pork** market is thriving

We collaborated with Superunie to survey shoppers who buy pork products. What's important to them? What beliefs influence their decision to buy? And how can we reach them more effectively? According to Paul van Houtepen of research firm Imagro, there is a significant market for pork that offers a wealth of opportunities.

PORK IS PURCHASED MUCH MORE FREQUENTLY THAN BEEF OR CHICKEN

The study surveyed 240 shoppers who buy meat in supermarkets, primarily those belonging to the Dutch supermarket network Superunie. Paul proudly tells us about the results: 'First, we looked at who buys pork. What stood out was that pork is very popular in the Northeast and Southeast of the Netherlands, especially with families. It's significantly less popular in one-person households. According to figures from Statistics Netherlands, pork accounts for 47% of total meat consumption. The market shares of other meats, like chicken and especially beef, are much smaller. Furthermore, shoppers who buy pork are very loyal. Despite a slight decrease in consumption, the number of people who eat pork and the frequency with which they do so are still very high. So pork-based products are very popular.'

OPPORTUNITIES FOR IMPROVING PORK'S IMAGE

The main factor in pork's popularity is that it is easy to prepare. Moreover, it is relatively inexpensive compared to beef and chicken. However, the study also revealed that pork's image is less favourable than that of chicken and beef. Respondents said they associate chicken and beef with better taste and nutritional value than pork. 'Additionally, many shoppers don't consider meat in general to be a sustainable choice. So you really need to reassure them that you are making efforts to be sustainable. The word 'sustainability' is a catch-all term that's not clear enough. Explain what you're doing and make it tangible. Show that pork is rich in high-quality proteins and has a lower carbon footprint than people might think. I would also feature the skill and quality of the butcher in your branding. This instils confidence that a good piece of meat has been selected and correctly handled.'

TELL YOUR STORY

We need to improve how we give shoppers our message. But how do we tell a better story? 'Inspire customers by giving them suggestions on the front of the packaging about what they can make with the product inside. Use attractive, evocative images so that the shopper's mouth starts to water when they see the product on the shelf. Make clear what ingredients they'll need, how many servings there are, and how long it will take to make. You must make it as easy as

‘Make it easy for your shopper’

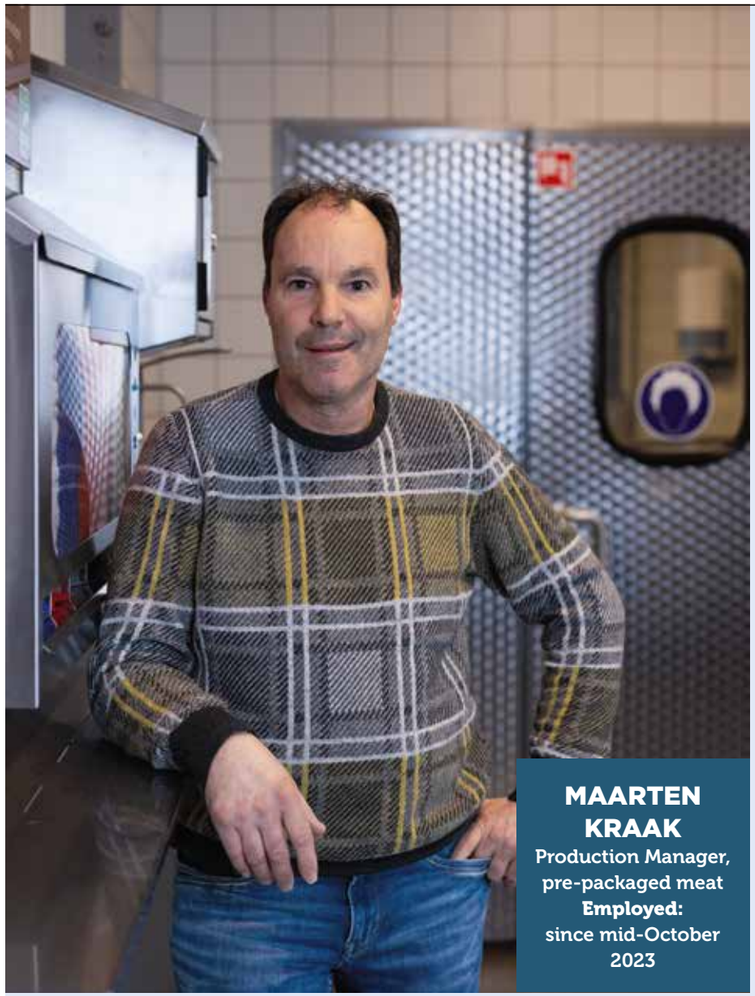
possible and give them confidence that it will be a success. You can see this development clearly on vegan and vegetarian products, where the label covers a large part of the product. In contrast, in the meat section, you'll generally see transparent packaging. But I believe the market is ready for this to gradually change.'

FOCUS ON CONVENIENCE

'When you look at the overall trend, you'll see that convenience products are selling extremely well. People have less time to cook and often haven't been taught how to. You'll rarely see anyone under the age of 50 peeling potatoes or rolling meatballs these days. There's a huge demand for products in smaller portion sizes that are easy to prepare. Dare to innovate. You have to think beyond the meat chiller when you're developing convenience products. Vegetable suppliers have developed prepared salads that can be eaten as a main meal. Cheese suppliers have developed veggie burgers, and coffee suppliers have developed convenience products like coffee pads and cups. And good butchers have started to focus more on delicatessen and gourmet products. Which dishes are so easy that even the least confident cook can make them successfully? Consider things like ready-made pulled pork. The moment the shopper is convinced it will be easy, they're sold.'

What's important to shoppers when buying pork?

Shoppers indicate that their main considerations when choosing products are appearance (such as an attractive colour), taste, and price. The importance attached to certification and quality marks is growing: of meat products sold in the first half of 2023, the share of those with quality marks rose by 58%. Participants were shown various communication concepts. Notably, the concept that focused on preparation, convenience, taste, and inspiration scored well with shoppers in the Randstad (the area that includes the Netherlands' four largest cities). Shoppers in the other towns in the Randstad provinces of Utrecht, Noord-Holland and Zuid-Holland were more interested in the concept that focused on product origin, while in the Northeast and Southeast of the Netherlands, the concept focusing on artisanal quality and flavour performed best.



MAARTEN KRAAK
Production Manager, pre-packaged meat
Employed: since mid-October 2023

What is the main focus of your work?
I had previous experience in the pre-packaging industry, so Westfort asked me to help set up the new pre-packaging unit in Oudewater. The unit makes and packages pork and beef products like burgers, mince, schnitzels, and barbecue packs. I'm involved with product development. Our developers come up with great products, but are they compatible with our production process? Can they be made in compliance with regulations, such as allergen rules? We have to be able to make them in large quantities, and, of course, they need to appeal to retailers. Every customer has unique requirements, and we strive to meet them as much as possible. I also handle the procurement of meat products, manage stock levels with the planner, and collaborate on new recipes.

What is your perspective on sustainability?
Use the most efficient production methods to minimise waste. We handle large volumes. Sometimes, a customer request leaves us with a lot of unused ground meat mix that would otherwise be wasted. So our team created a variety of recipes using a single base mix. During blind taste tests, retailers readily declared these tasted better than their own products. So the decision was easily made.

What is your favourite pig?
The Dutch landrace pig is ideal for our products. They're quite lean, with only a little fat, which aligns well with the preferences of Dutch consumers.

What are your thoughts on any recent or upcoming innovations?
We use the most up-to-date machine technology. Our vacuum fillers – large meat grinders – have special rotary moulds. These allow us to grind the meat roughly, then mince it and shape it in a single operation. We use advanced packaging technology, which automatically places the products on trays and seals them without the need for manual handling.

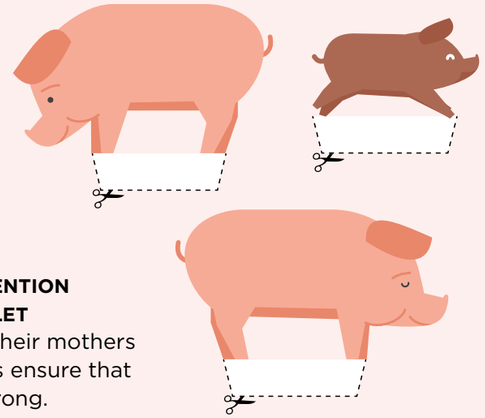
What are you proud of?
Creating the pre-packaging unit from scratch was a huge challenge. Pre-packaging was an entirely new process for Westfort, and our employees had no prior experience of it, either. Figuratively speaking, they couldn't tell a chorizo from a chipolata. But now, it's amazing to see what we've accomplished as a team in such a short time and the huge number of products we can make. It's really an enormous achievement.

Peek inside a KDV sty

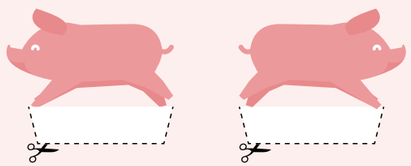
KDV sties must comply with numerous stringent standards. Cut out these images and stick them inside an empty shoebox to create your own KDV diorama and see what the inside of one of our sties looks like.

100% DUTCH
KDV is a cooperative organisation of more than 200 Dutch pig farmers committed to sustainable pork production.

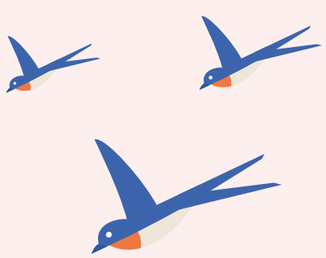
HEALTHY PIGS
Healthy pigs are our top priority. One of the benefits of this focus is a minimal use of antibiotics.

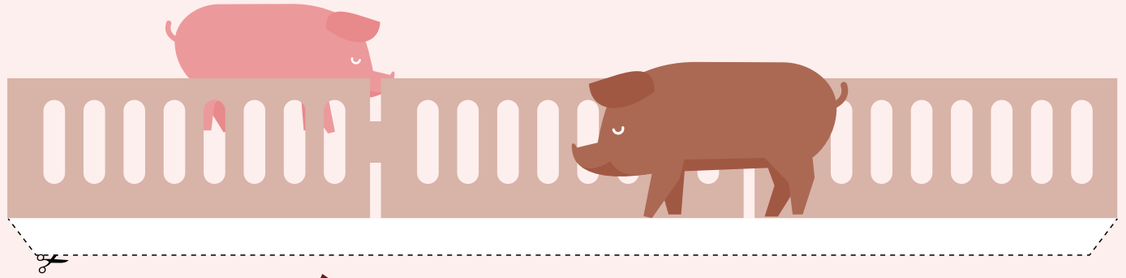


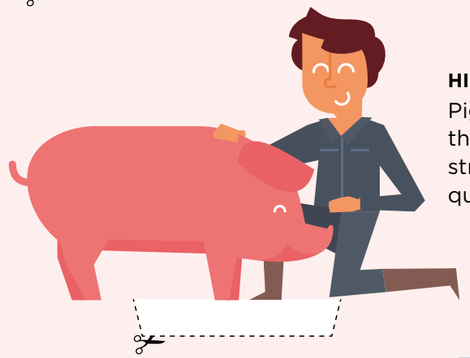
EXTRA CARE AND ATTENTION FOR MOTHER AND PIGLET
Our piglets stay with their mothers for longer, which helps ensure that they're healthy and strong.



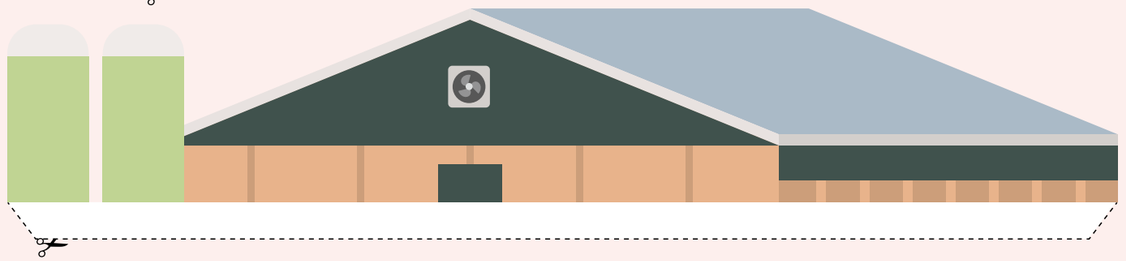
SMART FARMERS = GOOD FARMERS
KDV farmers are smart farmers who set global standards by using the very latest technology. They are independently inspected.



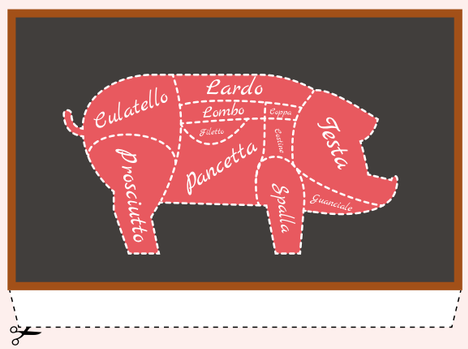




HIGH PROTEIN
Pigs are circular animals that convert residual streams into high-quality proteins.



DELICIOUS AND VERSATILE
We offer a broad range of delicious and affordable products, from fresh meat to a wide variety of speciality items.



BART: You put your heart and soul into caring for them'

'Pig farming is the best thing there is'

Bart and Jodie Jannink run a farm in the Dutch village of Bentelo in Twente. They've both spent their entire lives around pigs, and for them, there's no doubt: pig farming is the best thing there is. And their three-year-old daughter appears to have inherited their passion and enthusiasm. Today, she's wearing bright red wellies and is clearly eager to help take care of the piglets, just as Jodie did for her father when she was a little girl.

How did you meet each other?
'Among the pigs, obviously!' Jodie laughs. 'I did an internship at the company where Bart worked, and he was my supervisor. I'd known I wanted to work in pig farming since I was young. I remember helping my dad check the piglets when I was about four years old. Later, I helped with loading the piglets. Now, my daughter loves helping me. When the young piglets get their ear tags, she puts them in a crate, and I tag them. She loves being around the pigs and petting them. I see a lot of my younger self in her. She watches what we do, and then she copies us. Our youngest is in among the pigs too, asleep in her buggy. It's going to be fun when she's old enough to enjoy helping too. I really enjoy that we can all do this together.'

There are two of you in charge here. How does that work?
Jodie laughs. 'We get that question a lot. Getting to know each other made us even more keen to go into business for ourselves. We might have both just stayed working for other people otherwise. We've divided the work on the farm so that I mainly take care of the sows and young piglets, and Bart takes care of the older piglets. The piglets stay on our farm their entire lives, so you want everything to be well organised from beginning to end. The more time you invest in the mothers and their young piglets, the better the piglets do when they're older. I start every day by checking the maternity pen. How are the mothers and piglets doing? Have any new piglets been born? Do they have enough fresh water? While I'm doing that, Bart checks the older piglets. We spread sawdust and lucerne around the sty for them to play with. In the afternoon, we get on with other jobs, like weaning, moving piglets, and cleaning the sties. We always do those jobs together.'

'They all have their own personalities,' says Jodie. 'Sometimes I give them names. I pet those ones a bit more often.'

Why did you choose KDV?
For Bart, the deciding factor was the freedom that comes with running your own business. 'I like being able to choose which aspects of the farm I can – and want to – make sustainable. For me, the most important thing is the pigs' health. If you take good care of them, they're less likely to get sick, so you don't need to use antibiotics as often. We've chosen a breed that's gentle and caring, and we keep the piglets with their mothers for five weeks. That's longer than average, but you can really see the effect in how resilient the piglets are. They're much stronger, and it also gives the mother more time to recover. I had to get used to recording everything for KDV at first, but now we're seeing the benefits of that. The system makes everything completely transparent. You can see detailed information about each piglet, for example, who the mother is, how old it is and what treatments it's had. It's also given us a very good understanding of how much energy and feed we use on our farm. By working with the KDV farm coaches, we've been able to use it to significantly reduce our carbon emissions.'

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Is meat a **guilty pleasure?**

If we're to believe the marketing for vegetarian products, meat is disastrous for the climate. Marketers are keen to compare the climate impact of meat against meat alternatives. For instance, IKEA recently advertised that their Swedish plant balls are 25 times better for the climate than the meat version. 25 times! That's quite a big difference. But is it true?

CHERRY-PICKED DATA

Such claims set off alarm bells for Geesje Rotgers. Geesje is an investigative journalist for the Dutch Agrifacts Foundation (STAF) and campaigns for honest communication. 'When you're making comparisons, you can't compare apples with oranges. What sometimes happens is that data is cherry picked to fit a claim. For example, when the impact of plant-based options is calculated, processing, transport, and storage might not be included in the data. But they are for meat. In response to our research, IKEA eventually withdrew their claims.'

FAIR COMPARISONS

Here's another example: The Dutch national 'Week Without Meat' challenges customers to avoid eating meat for seven days. To reinforce their message, they've quantified the benefits to the environment in terms of carbon emissions and water use. The results look fantastic, but the calculations are based on the condition that you don't replace meat with plant-based products.

'I don't think that's a fair comparison,' says Geesje. 'When you're comparing products, you need to make sure you adjust for nutritional value, like protein content. If you compare a kilo of meat with a kilo of chickpeas, then obviously, the carbon emissions from chickpeas will be lower. But chickpeas have three times less protein than meat. You have to eat a lot more of them to get enough nutrients. When you factor that in, you get very different results. Comparisons are almost never made on the basis of nutritional value, and that is a political choice. Almost every government report compares products on a kilo-for-kilo basis. And that concerns me.'

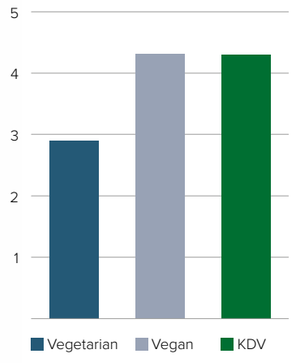
> ‘We're critical, but we're also straightforward’

Research on smoked sausages

KDV commissioned the renowned independent market research bureau Blonk Consultants to calculate the carbon footprint of our pork. Blonk compared various types of smoked sausage: pork, beef, chicken, vegetarian, and vegan. The results were surprising! The CO_2 impact of KDV smoked pork sausage was lower than that of the vegetarian and vegan sausage.

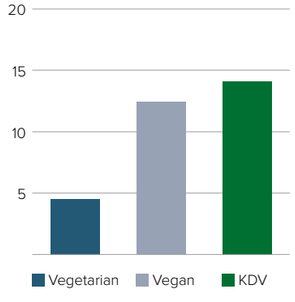
KILO FOR KILO, WE ARE COMPARABLE WITH VEGAN SMOKED SAUSAGE
Carbon footprint by weight

In kg CO_2 eq. / kg smoked sausage



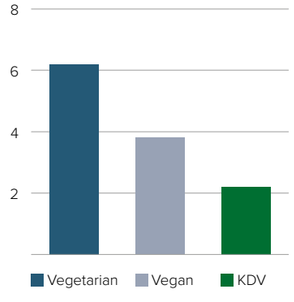
BUT VEGETARIAN AND VEGAN SMOKED SAUSAGES CONTAIN LESS PROTEIN
Protein content per unit of weight

in g / 100 g smoked sausage



PER KILOGRAMME OF PROTEIN, KDV SMOKED SAUSAGE HAS THE LOWEST CO_2-FOOTPRINT
Carbon Footprint by protein content

In kg CO_2 eq. / 100 g protein



The research data is from a 2019 study entitled 'Doe Maar Lekker Vegetarisch', carried out by Blonk Consultants and commissioned by the Nationale Postcode Loterij, Albert Heijn and Unilever.

‘You have to make fair comparisons between products’

INDEPENDENT RESEARCH BUREAU

'We started STAF five years ago to investigate whether government policies were being based on accurate information. We also fund scientists who want to look into under-researched subjects. For example, a study is currently being conducted on climate models and the data used to build them. Science is often used to support policy, but we do it the other way around. We're working on matters that are highly politically charged, like phosphorus, nitrogen, and water management. Very few journalists are willing to touch these issues. We're funded entirely by donations, voluntary contributions and sponsorships, which allows us to guarantee our independence and ability to conduct unbiased research. If you'd like to learn more about our research, visit our website: www.stichtingagrifacts.nl. All our articles are openly available.'

Asparagus à la Flamande

Serves 4 – Preparation time: 45 minutes

- 1 kg **white asparagus**, peeled and woody ends trimmed
- 6 hard-boiled **eggs**
- 10 g **curly leaf parsley**, roughly chopped
- 1 tbsp **capers**, roughly chopped
- 125 g **butter**
- 8 slices of **ham**
- **salt** and ground **pepper**

1. Cook the asparagus for about 8 minutes in a large pot of salted water until al dente. Remove from heat and allow the asparagus to continue cooking for 5 to 8 minutes. Ensure that they do not overcook.
2. Roughly mash the eggs. Melt the butter in a small saucepan over low heat. Add the eggs, parsley, and capers. Season with salt and pepper to taste.
3. Drain the asparagus and divide over four plates with the egg mixture. Arrange the ham into rosettes alongside the asparagus and eggs.

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New production facility running at **full capacity**

We've been supplying retailers directly from our new production site in Oudewater since January. This is a big step for KDV that brings us much closer to the consumer. Previously, we only supplied whole cuts of meat, which were seasoned, cut, and packaged by processors or retailers. Now, we can supply finished products directly to stores, from burgers to BBQ packs. We really can do it all.

It's Friday, March 1st, and Westfort sales manager Rob de Bruin breathes a sigh of relief. 'We've just had our final call with Spar. Over the past few weeks, we've had daily morning calls with them to streamline operations at Oudewater. When we started, our service level was 80%. Given that these were our first consumer packs for retail, that's understandable. We also had a new production site, new staff, new products, and 900 new customers. But, of course, we wanted to do better. After five weeks of hard work, we reached a service level of more than 99% this week. I'm enormously proud of what we've achieved together in such a short time.'

COMPLETE METAMORPHOSIS

An entirely new production facility has been realised on the site that, until just a few months ago, housed bacon production. When Rob joined Westfort, construction was in full swing.
'The outside of the building might look unchanged, but inside, everything was stripped out: hanging equipment, cutting lines, tiles, floors, lights – it all had to go. In just a few months, we created a totally new production facility with new machines for cutting, breading, marinating, weighing and packing, as well as new refrigerators and pricing lines.'

SHORT LEAD TIMES

'Those pricing lines are what impresses me most. They're what we use to label the products. We now have about 100 different products, and on top of that, every retailer has its own label. The unique thing about this production facility is that the orders are prepared separately for each individual store. That means working on small quantities of a huge number of different products. Because we have the latest machines, we're able to do this in a cost-effective way. The orders come in from the stores in the morning. Then we plan the total production for that day to ensure goods reach the distribution centres by evening and are in stores by

the following morning. This makes lead times incredibly short so we can guarantee that the products are as fresh as possible.'

THE BIG BANG

'When I see what we've achieved, I feel proud. Things are really going very well. Starting up without detailed historical product data or a fully tuned software system was quite challenging, but now we've got it all under control. Employees have learned a lot from each other, and they work together like a well-oiled machine. Naturally, we took time to get up to speed, starting with some trial product runs in December and a small range of packaged products in January. But January 27th was the Big Bang. That's when the orders for the complete range for 900 stores all came in at once. We were quite nervous about whether we could pull it off, but everyone worked hard. Now we've made a competitive sport out of dispatching the last package so we can achieve that 100% service level.'

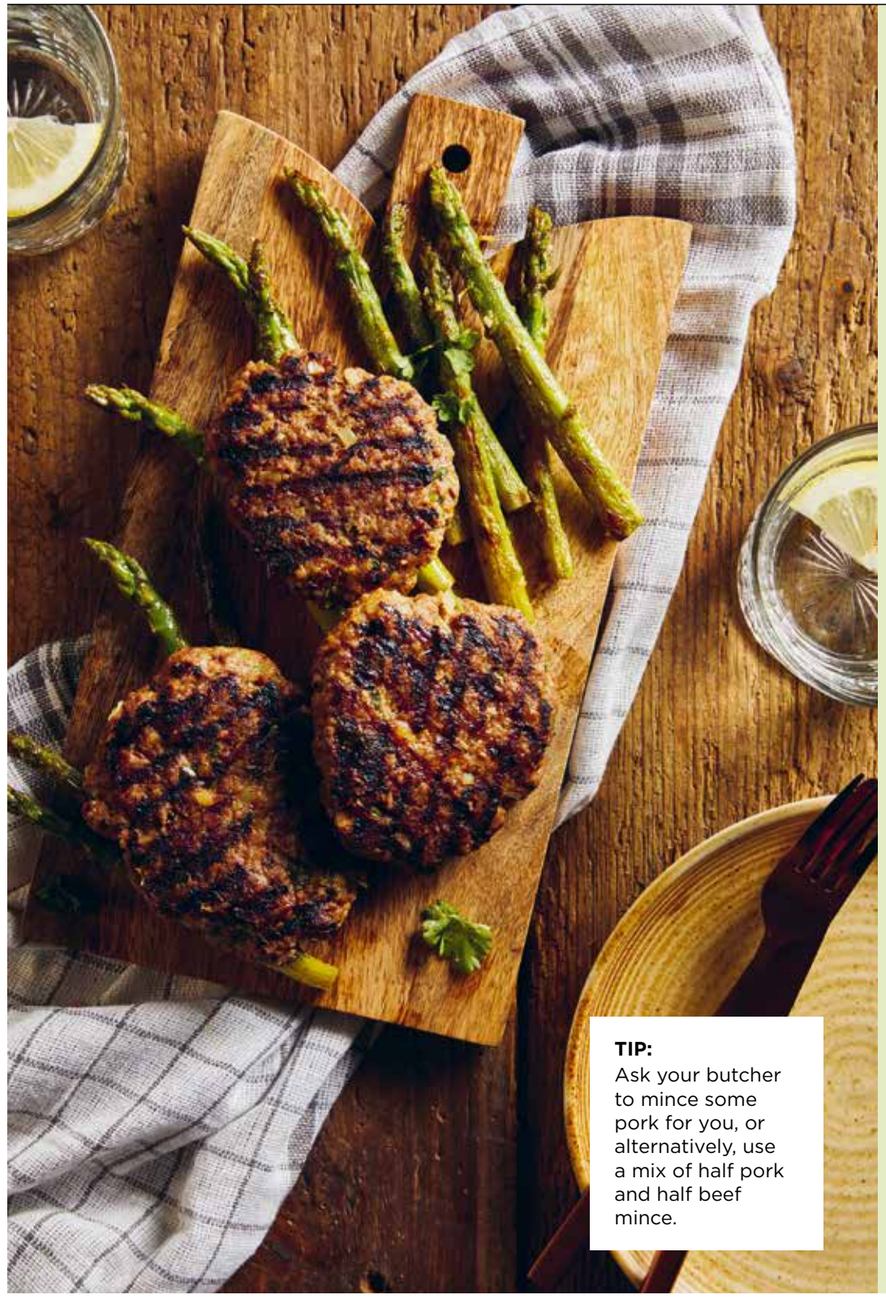
> ‘The unique thing about this production facility is that the orders are prepared separately for each individual store’

A WHOLE NEW BALL GAME

'It's extraordinary that Westfort secured a contract with Superunie without having agreed a product or price. That's down to the trust that we've earned through consistently reliable delivery performance in IJsselstein. I knew Egbert already from my time at Coöp. If you compare where the company was then and where it is now, it's clear that huge strides have been made in professionalisation. And that's essential if you want to supply to retail. Your organisation needs a service-oriented approach, good performance, portfolio analyses, proposals for new products, and a category captain who can jointly take the lead with the retailer. We have everything we need to go full steam ahead.'

Grilled hamburgers with asparagus

Serves 4 – Preparation time: 45 minutes



- 500 g **pork mince**
- 1 tsp **paprika**
- ½ tsp **curry powder**
- 2 cloves of **garlic**, crushed
- 1 **shallot**, finely chopped
- 5 g **parsley**, roughly chopped
- 1 **egg**
- 30 g **breadcrumbs**
- 800 g **green asparagus**, woody ends trimmed
- 2 tbsp **sunflower oil**
- **salt** and ground **pepper**

1. In a large bowl, combine the mince, paprika, curry powder, garlic, shallot, egg, parsley, and breadcrumbs and knead well. Season generously with salt and pepper. Shape into four burgers, cover with cling film and refrigerate for about 30 minutes.
2. Heat a grill pan over high heat or prepare the BBQ. Brush the burgers with 1 tbsp of the sunflower oil and grill for about 5 minutes on each side until golden brown and cooked through.
3. Toss the asparagus in 1 tbsp of sunflower oil seasoned with salt and pepper. Cook in the same pan as the burgers (or alongside the burgers on the BBQ) for 3 to 5 minutes.

TIP:
Ask your butcher to mince some pork for you, or alternatively, use a mix of half pork and half beef mince.

JASMIJN AND PIETER VAN DER ZON

‘He has enormous compassion for animals’

Television viewers in the Netherlands may remember Pieter (56) and his daughter Jasmijn (24) van der Zon from the RTL5 series 'Bij ons op de boerderij' (On Our Farm). The Van der Zons are a hardworking, cheerful, close-knit family. And that's a good thing – because all the family members who are involved in the business live together on the farm. Pieter and his wife live with their son, Pieter Jr., in the main house, and Jasmijn, her partner Thijs (25) and their baby, Gijs (11 months), live right next door.

'My great-grandfather started the farm, but it was my dad who really made it what it is today. He built new sties in 2014, and now we have 3000 piglets, 400 pigs, and 85 dairy cows.' The farm is where Jasmijn's future lies, although she didn't see it that way ten years ago. 'We had to help out on the farm, and my dad had an annoying way of explaining everything in precise detail. But I still decided to study dairy farming at MBO level when I was 16, and that's when I realised this was what I wanted to do. After that, I met Thijs. He absolutely loved it, and he doesn't even come from a farming family! Now he's doing a degree in livestock farming.'

The young couple, Pieter Jr., and Pieter Sr. now all run the farm together as equal partners. Will her father be stepping back? 'Oh no! The farm is his life, his passion. And I love working alongside him, listening to music as we take care of the pigs together. I rely on his advice; he has so much experience. He's a great example to me, especially in his enormous compassion for animals. Our pigs have toys and plenty of space. I'm proud that he's part of KDV. We're certified by the Better Life label, and we're committed to the Antibiotic-free Life Guarantee.'

Jasmijn spends at least seven hours a day among the pigs and sometimes brings baby Gijs along with her. 'That's what I love about this work – being your own boss. And of course, the animals and working outdoors. We're a maternity farm for pigs. Seeing all those newborn piglets is the most beautiful thing in the world!'

Carbon footprint tool

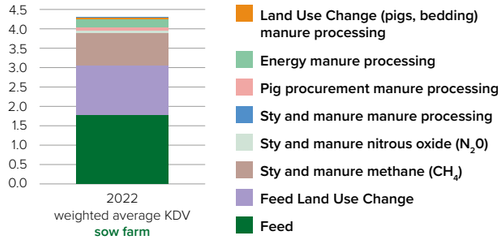
This is the first year that the carbon footprint has been calculated for all KDV businesses. The data shared last year was based on a pilot group of 30 companies.

SOW FARM

In the figure below, the weighted average KDV carbon footprint of delivered piglets (at the point of departure from the sow farm) is presented in kg CO_2 eq. per kg live weight. The weighted average of the reference group of KDV farms is calculated using all inputted sow farms and closed facilities that supply piglets (externally and/or internally) within this group.

Carbon footprint

kg CO_2 eq. per kg live weight pig



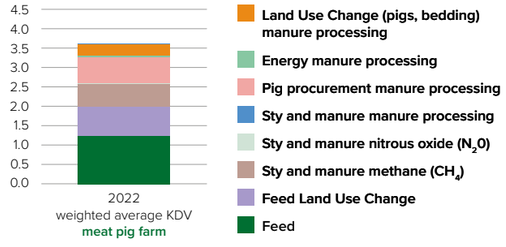
		weighted avg. KDV 2022
Feed	mix	1.78
	loose raw materials	0.00
	wet by-products	0.00
	Land Use Change	1.27
Sty and manure	methane (CH_4)	0.84
	nitrous oxide (N_2O)	0.06
	manure processing	0.00
Purchase of pigs		0.07
Energy		0.21
Land Use Change (pigs, bedding)		0.03
Other		0.01
Total (incl. LUC)		**4.27**
Total (excl. LUC)		**2.97**

MEAT PIG FARM

The graph below shows the weighted average KDV carbon footprint of meat pigs delivered by the reference group of 30 KDV farms in 2022.

Carbon footprint

kg CO_2 eq. per kg live weight meat pig



		weighted avg. KDV 2022
Feed	mix	1.23
	loose raw materials	0.00
	wet by-products	0.02
	Land Use Change	0.73
Sty and manure	methane (CH_4)	0.59
	nitrous oxide (N_2O)	0.03
	manure processing	0.00
Purchase of pigs		0.66
Energy		0.04
Land Use Change (pigs, bedding)		0.28
Other		0.00
Total (incl. LUC)		**3.58**
Total (excl. LUC)		**2.57**

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The annual figures

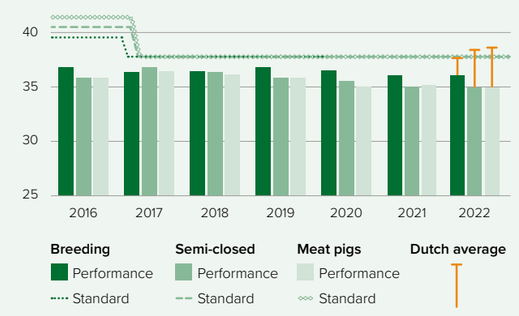
are based on 2022

MINERALS

Nitrogen and phosphate are essential minerals in the dietary requirements of pigs. However, an excess of nitrogen and phosphorus in the feed is harmful. The surplus of these valuable minerals is excreted and enters the soil, disrupting the mineral cycle. Since it was established in 1997, KDV has been working to prevent this by striving to achieve an optimal balance between sufficient nutrients for pigs and minimised emissions for the surrounding environment. By doing so, we close the mineral cycle.

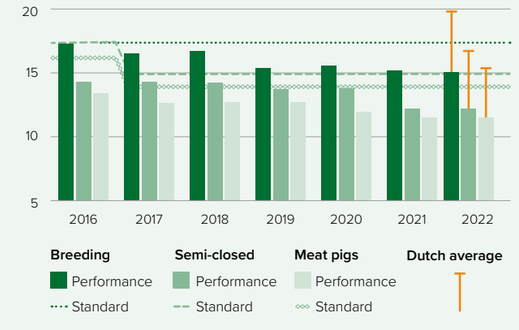
Nitrogen

Excretions per 1000 kg of growth



Phosphate

Excretions per 1000 kg of growth



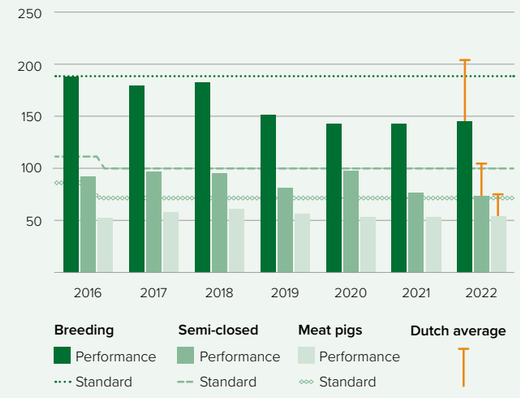
No standards had been set for KDV breeders in 2012. 2018 see note in energy tab.

BIODIVERSITY AND SOIL

Copper and zinc are micro-nutrients that animals (and humans) need in small quantities to maintain essential processes in the body, such as growth and immunity. When pigs ingest too much copper or zinc, it is excreted in the manure and ends up in the fields and pastures. This has a direct impact on soil life and biodiversity. KDV therefore limits the amount of copper and zinc that pigs ingest through their feed and subsequently release into the environment.

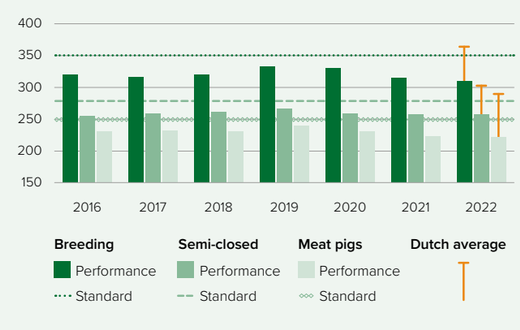
Copper

Supply per 1000 kg of growth



Zinc

Supply per 1000 kg of growth



No standards had been set for KDV breeders in 2012. 2018 see note in energy tab.

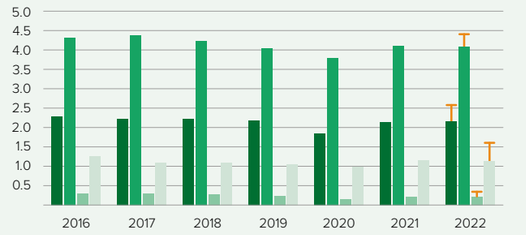
The annual figures
are based on 2022

AMMONIA

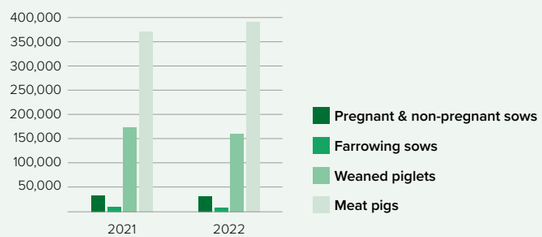
Ammonia is a naturally occurring chemical that is released from manure. In high concentrations, ammonia can be harmful to animals, people, and the environment. The level of ammonia emissions is determined by the chosen sty system.

Ammonia

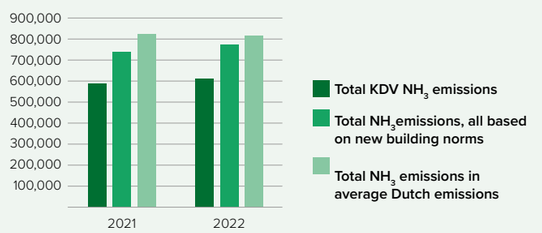
Kg NH_3 per animal quarter per year



Number of quarters per animal category



Kg NH_3



KDV performance in 2022 compared to new building norms: **29% better**.
KDV performance in 2022 compared to Dutch average: **25% better**.

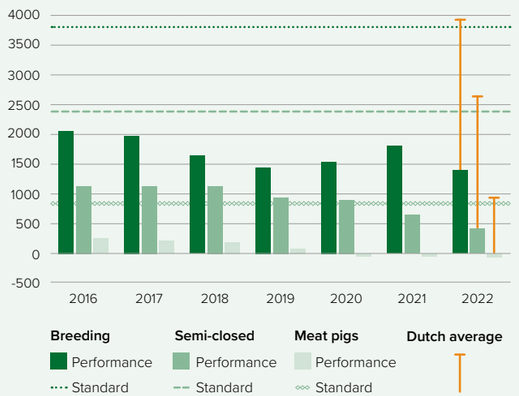
The last table shows NH3 emissions in kg from all the farms in the Sustainable Pork Value Chain (KDV) in 2020. The second row shows the total amount of NH3 that those same farms would emit if all their sties were constructed according to the new building norms. The third row shows NH3 emissions of those same farms if their facilities were based on the Dutch average.

ENERGY

KDV aims to achieve energy-neutral pig farming. We are moving ever closer to that goal: a number of pig farmers in the chain are already net energy producers. Over the past 25 years, we have worked hard to develop a solution to make this possible. The latest innovation was daily manure removal in combination with monofermenting: fresh manure is moved into a fermentation system and converted into biogas, which is used to produce heat and electricity.

Energy consumption

MJ/1000 kg of growth



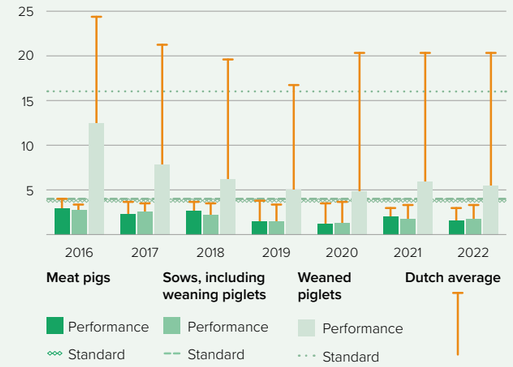
A slightly different calculation method used from 2016 resulted in gas being slightly more heavily weighted. Figures for 2016 are 7%, 4% and 2% higher for breeders, closed farms, and meat pig farmers compared to the old calculation method.
In 2018, the figures were based on fewer farms than in other years due to errors made in the auditing of the data.

ANIMAL HEALTH

Animal health has a beneficial effect on animal welfare and operating results. KDV aims to ensure that our animals are as healthy as possible. The success of our methods is evidenced by the minimal use of antibiotics in KDV pigs. The number of KDV pigs guaranteed never to have been treated with antibiotics is also increasing rapidly. They are selected for our Antibiotic-free Life Guarantee.

DDD

Animal daily dosages



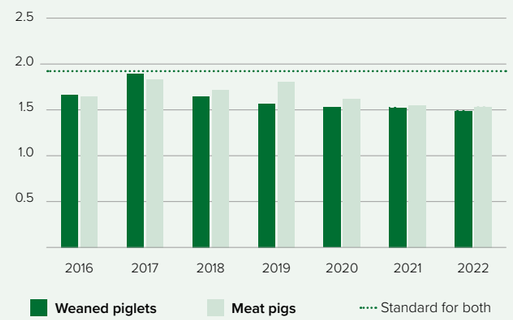
In 2015, the registration of antibiotics according to animal categories was changed throughout the Netherlands. The animal category of 'sows' was divided into sows with weaning piglets and sows with weaned piglets. 2018 see note in energy tab.

MORTALITY

Another key indicator of animal health is the mortality rate among weaned piglets and meat pigs.

Mortality

Percentage



Bring KDV's knowledge into the sty

ALWAYS INFORMED

KDV farmers who join our Smart Farming initiative receive the best information about their own companies and have the option to compare their performance to other participating farms. Our dedicated apps give farmers real-time insight into key indicators, ensuring they are always informed about their performance.