

By Denmark

WHITE PAPERS

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ORGANIC

A VISION AND A MINDSET
IN THE DANISH FOOD CLUSTER

INSIDE THIS WHITE PAPER:

- An organic revolution powered by cooperation
- Scaling up production in an innovative universe
- State checks and labels are the consumers' guarantee



Solutions of tomorrow
By Denmark

Organic

A vision and a mindset in the Danish food cluster

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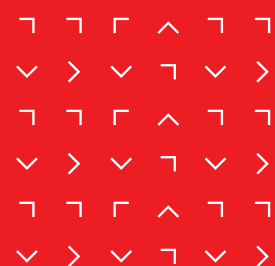
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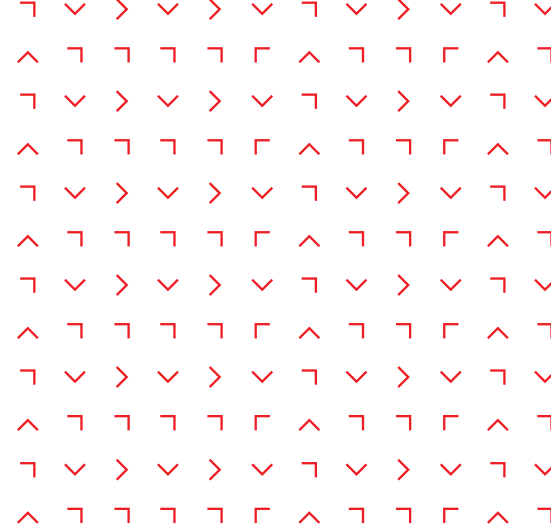
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EXECUTIVE SUMMARY



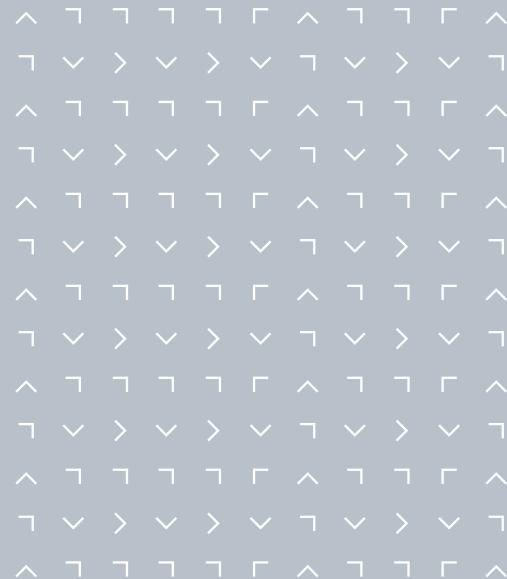
At a time when organic food products are increasingly in demand, Danish strengths within the organic food sector have come into their own. Around the world, Denmark has earned a reputation as the leading nation for organic food production and know-how.

This white paper provides insights into the organic vision that started with a handful of dairy farmers and rapidly gained the support of a nation. Over three decades, the Danish government has created the optimum conditions for nurturing organic innovation and growth. Today, organic food products in Denmark have a bigger share of the retail market than anywhere else in the world, including sales in online stores.

Strong and trusting collaboration across the public and private sector has provided a solid foundation for this growth adventure. Legislation, regular controls and organic labels set the standards that food producers take pride in attaining.

Strong and trusting collaboration across the public and private sector has provided a solid foundation for the organic adventure

The organic mindset is at the root of the high consumer trust in Danish organic foods – and is among the guiding principles of New Nordic Cuisine. Altogether, that makes Denmark a strong base for international organic growth.



INDEX

Foreword

Chapter 1 An organic revolution powered by cooperation
The cross-sector commitment to a common journey

Chapter 2 Sustainable ambitions start on the farm
Danish organic farmers take pride in being the best

Chapter 3 Scaling up production in an innovative universe
A reliable brand creates strong consumer trust

Chapter 4 State checks and labels are the consumers' guarantee
Compliance with EU regulations – and way beyond

Chapter 5 A culinary journey with organic roots
The sustainable mindset behind New Nordic Cuisine

Chapter 6 The national plan for rolling innovation
Collaborative projects put knowledge into action

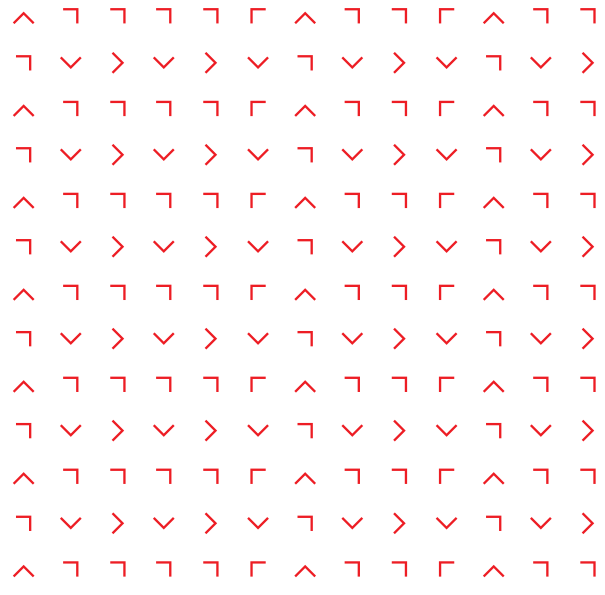
Chapter 7 An organic front-runner built on a vision
Learn more about the Danish food cluster and its strongholds at Food Nation



Supporting the SDGs – how does Denmark contribute?

The UN's 17 sustainable development goals (SDGs) have become an important topic for companies, organisations and stakeholders within the Danish food cluster. Organic farming and production are one way to support the SDGs.

Many have pinpointed how they actively support the goals. At national level, we see the SDGs as a guiding light for establishing best food production practices, prioritising research and development efforts and identifying innovation targets that will drive us towards a sustainable future.



FOREWORD

Danish organic food and know-how are in high demand around the globe. The organic growth adventure in Denmark is the story of a business culture of cooperation and a political willingness to take the lead.

Denmark is a leading organic food nation. In 1987, Denmark introduced the world's first regulations for organic production, just as we were the first in the world to introduce national organic standards and an organic label. By doing so, Denmark provided the conditions that have turned an organic mindset into a thriving business area, which is both trusted and well-known for its high standards of food safety, traceability, quality and sustainability. Three decades after the organic movement took off, Danish organic food and know-how are in high demand around the globe.

One of the reasons for Denmark's organic success is that it has always been a common political priority across the political spectrum. Another reason is a long and

trustbased cooperation between agricultural organisations, retailers, the food industry, research institutions and the public sector.

In 2017 more than 13% of total food retail sales in Denmark were organic. This is a world record

This cooperation has turned the Danish organic sector into a growth adventure that only seems to continue growing both in Denmark and in export markets. In 2017 more than 13% of total food retail sales were organic. This is a world record, and today the national organic 'Ø-label' is recognised by nearly all Danish consumers.

There is also a growing demand for organic food when Danes eat out. In response, Danish authorities introduced an organic labelling scheme for professional kitchens in the public and private sector in 2009. And today more than 2,700 professional kitchens in Denmark, including restaurants, hotels and canteens, have the official Danish Organic Cuisine Label, which shows that they have an organic share between 30% and 100%.

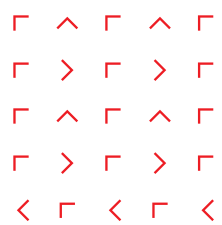
This white paper provides insight into the mindset, the conditions and the value chain behind the success of organic farming and production in Denmark - the strengths that have made our nation an organic front-runner.

A detailed still life photograph of various organic food products. In the foreground, there are several pieces of cheese, including a wedge of Swiss cheese and a block of cheese with a dark rind. Next to them are fresh strawberries, a bowl of white eggs, and a piece of cured meat. In the middle ground, there are several carrots, a bunch of leeks, and a loaf of bread. In the background, there are more vegetables like broccoli and cauliflower. On the left, there is a glass pitcher filled with milk and a glass bottle of milk. On the right, there is a glass jar filled with oats. The entire scene is set on a wooden surface, and the lighting is warm and natural, highlighting the textures and colors of the food.

CHAPTER 1

AN ORGANIC REVOLUTION POWERED BY COOPERATION

THE CROSS-SECTOR COMMITMENT
TO A COMMON JOURNEY



From producers to researchers, organisations and national policy-makers, strong cross-sector support has characterised Denmark's organic movement since the beginning – and driven its success.

Visitors to Denmark are often struck by the degree of interaction between organic farmers, food companies, organisations and the government. It is collaboration of this kind that underpins the Danish food cluster – and not least the growth of a strong organic sector.

Stakeholders from across the value chain, from farmer to consumer, have all helped to develop a market-driven sector where nature, animal welfare and sustainability are prime considerations. A strong research focus has contributed to this development. Through the collaborative meeting of minds, many mutual interests and challenges are uncovered and the wheels of innovation set in motion.

Back in 1987, Denmark became the first country in the world to introduce regulations for organic production

Government policy with an impact

Danish government policy has made a huge impact on the organic movement from the beginning. Back in 1987, Denmark became the first country in the world to introduce regulations for organic production, based on the agricultural and food legislation already in place. At the same time, the government introduced a range of subsidies aimed at motivating Danish farmers to make the switch to organic farming.

Today, organic production is an integrated part of the Danish food industry, which is known around the world for its high standards of food safety, traceability, quality and sustainability.

A movement driven by many

Organic food production in Denmark is driven by innovative companies – international as well as national. All with strong organic credentials and a focus on innovation. Just as the farmer-owned cooperative movement played a major role in the development of Danish agriculture from 1882, it has also catalysed progress within organic production.

The organic revolution began in the cooperative dairies. While some of the largest cooperative dairies have focused on a mix of conventional and organic dairy products, others have based their business exclusively on innovative organic dairy products for consumers at home and abroad. As a result, Denmark is now the home of the world's largest organic dairy, Arla, and several other Danish dairies rank among the leaders in major organic export markets. In China, for example, dairy products from Denmark were among the first organic imports to be approved due to the high trust in Danish food production.

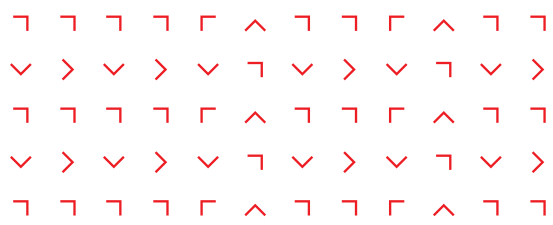
Organic produce in global markets

Danish companies are also active in the global market for organic meat, eggs, grain and vegetables, such as potatoes, root vegetables and lettuce. Here Danish farmers have expanded their production and, today, raise organic poultry, beef and pork for consumers in Europe and Asia. Friland, for example – Europe's largest organic meat company – sends 44% of its exports to France. And Danish eggs are particularly popular in the Middle East.

In recent years, a growing number of companies have entered the market for organic food and beverage products. The fruits of their successful efforts are clearly visible in Danish stores and supermarkets – and in export markets near and far.



Photo: Det Grønne Museum and Rasmus Christiansen



FROM ORGANIC NICHE TO DAIRY MAINSTREAM



Organic milk held less than a 1% share of the Danish market in 1988, when eight farmers came together and founded Thise dairy. In those days, organic food production was seen as less efficient, expensive and very much niche.

So few were surprised when sales of the first organic products from the dairy cooperative were weak. But the dairy was determined not to give up.

The perseverance paid off. In 1993, the Danish cooperative retail chain COOP placed a big order at Thise dairy. Almost from one day to the next, organic milk became widely available to consumers all over the country.

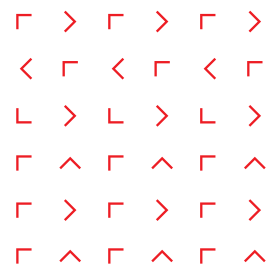
The organic market has grown considerably since, and so has Thise's business. These days, the dairy is one of the largest organic companies in Denmark, with more than 300 products and over 200 employees. More than 30% of production is exported.

Organic milk now holds a major share of the Danish market and is supplied by several organic dairies.

Organic milk holds a major share of the Danish market and is supplied by several organic dairies

Case by Thise

THE ORGANIC ROUNDTABLE – WHERE BEST PRACTICES ARE MADE



Denmark's Organic Food Advisory Council was established in 1987 to develop the organic sector in the best possible way. That same year, Denmark introduced the world's first regulation for organic food production.

Since then, stakeholders representing organic agriculture and food production, retailers, consumers, researchers, nature conservation, control systems and the Danish government have worked together to develop good organic practices in all parts of the supply chain.

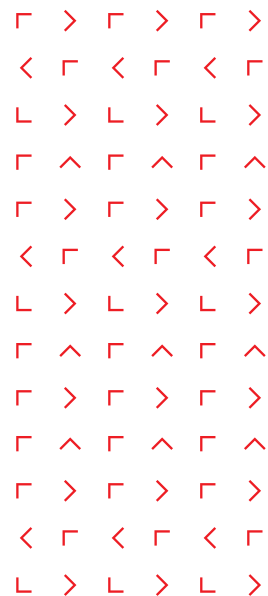
The council fostered the first ambitious national organic action plan in 1995, followed by new dynamic plans over the years. No matter which government is in power, the plans always have strong political support.

After more than 30 years, the results of the Danish way – with dialogue, a bottom-up approach and consensus – speak for themselves. In 2018, Denmark received the UN's Future Policy Award for an effective and innovative organic policy that contributes to the transition to sustainable food and agriculture systems.

**Case by Danish Veterinary
and Food Administration**



In 2018, Denmark received the UN's Future Policy Award for an effective and innovative organic policy

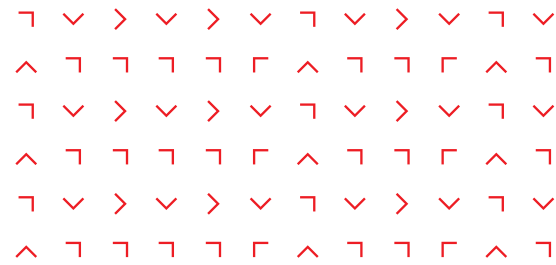


A green tractor is pulling a red implement, likely a harrow or similar agricultural machine, across a green field. In the background, a large white wind turbine stands against a clear blue sky. The scene is brightly lit, suggesting a sunny day.

CHAPTER 2

SUSTAINABLE AMBITIONS START ON THE FARM

DANISH ORGANIC FARMERS TAKE PRIDE
IN BEING THE BEST



Soil protection, animal welfare and initiatives to minimise environmental impact are fundamental focus areas of organic primary production. The efforts to improve are tireless.

Today, 10% of Danish farmers are organic producers – a figure that is rising year by year. Many are highly specialised, focusing on the production of vegetables, cattle, pigs or poultry. Others produce a diverse range of products for direct sale to consumers through farm shops, online stores or in partnership with local retailers.

The organic farmers' priority is to develop and improve their products and yields by sustainable means

Together, organic farmers cultivate some 10% of Denmark's agricultural land. And, while they vary greatly in size, each farm is guided by organic rules for producing good raw materials with utmost consideration for the environment, biodiversity and animal welfare. Efficiency and sustainability go hand in hand.

Most Danish organic farmers receive three to five years of specialist agricultural training. Supported by a large pool of advisers and researchers, they ensure a high level of professionalism and quality in the production of organic raw materials.

Sustainability high on the agenda

The organic farmers' priority is to develop and improve their products and yields by sustainable means – where the UN sustainable development goals are high on the agenda. These goals are driven by the organic farmers associations and go beyond the requirements of EU regulations for organic production.

To ensure the sustainability of their operations, farmers – both conventional and organic – can choose to follow the RISE (Response-Inducing Sustainability Evaluation) model. In this way, farmers can do even more to improve their performance within ten areas: biodiversity, energy and climate, water use, nutrient flow, animal welfare, soil fertility, management, economy, life quality and labour conditions.

Continuous improvement through voluntary standards

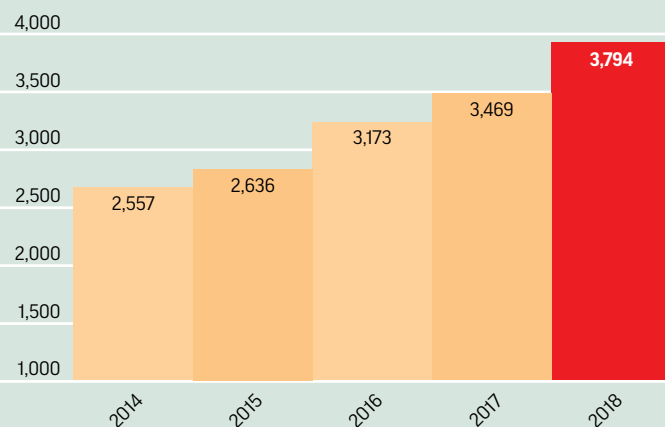
As consumer demands go up and new knowledge and technology become available, the organic sector focuses on continuously optimising its production techniques.

Driven by organic farmer associations, voluntary standards for cattle and pig production, for example, aim to improve animal welfare, ethics and environmental and climate protection – standards that exceed EU regulations and which farmers and food companies support.

Ambitions are high. Organic farmers have set their sights on safeguarding a living and fertile soil, reducing the climate impact of their production, increasing resource efficiency and securing the best welfare for their animals. All to ensure a better tomorrow.



Number of organic farms in Denmark



Total organic farmland in hectares

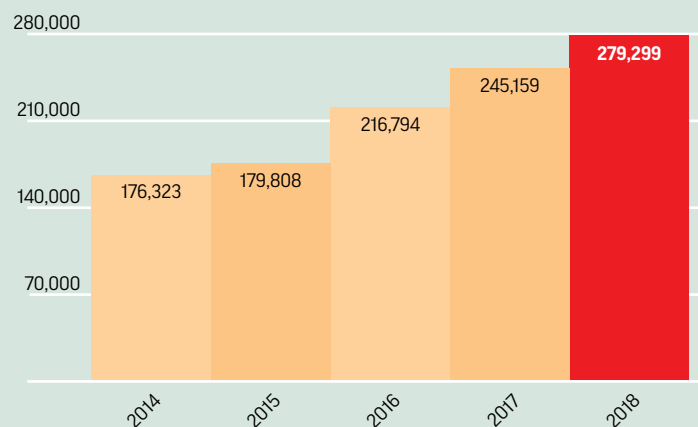




Photo: Organic Denmark

From conventional to organic production

Before products can be certified as organic, farmers must complete a two-year conversion to ensure their production is free of chemical plant protection products and synthetic fertilisers, as required by the EU. Crop rotation keeps the soil fertile and breaks weed and pest cycles, while legumes, crop residues and livestock manures add nutrients. The yield from organic plant production is typically 10% to 30% lower than conventional due to the more extensive production.



Photo: Organic Denmark

Organic beef and dairy cattle

In organic husbandry, animals must be able to express their natural behaviour. This means giving cattle access to pasture from 15 April to 1 November and ensuring freedom of movement in winter housing. Feed must be 100% organic. After calving, cows must remain with their calves for at least 24 hours. If an organic cow receives medical treatment for illness, the quarantine period for milk sales is twice that required for conventional production. This is a regulation set by the EU. In addition, as of 1 January 2019, the Danish food cluster has banned the systematic killing of calves.

Organic pig production

All organic sows in the EU must farrow in an outdoor hut and remain with their piglets until weaning. Free access to mud is essential, as it is natural behaviour for sows to wallow when hot, and feed must be 100% organic. In Denmark, some industry agreements include roughage in the feed, which benefits digestion. If treated with medicine more than once, a pig can no longer be sold as organic and must undergo a renewed conversion period. Systematic tail docking is not allowed, as is the case for all organic farms in Europe.



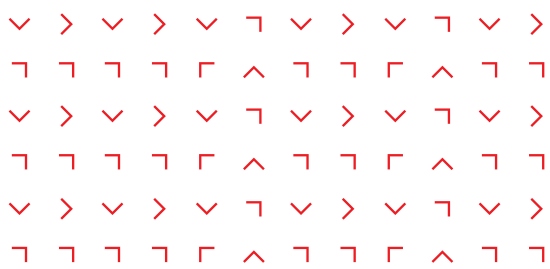
Photo: Henrik Bjerregrav

Organic eggs and poultry

Organic hens and broilers throughout the EU are required to have sufficient indoor and outdoor space, with access to perches, areas for dust bathing and scratching and organic feed. Outdoor areas must be covered with grass, trees and bushes, which can absorb the nutrients from droppings. A Danish organic broiler is about 57 to 60 days old when it reaches its slaughtering weight – compared to 35 to 38 days for a non-organic broiler. Systematic beak trimming is not permitted.



Photo: Organic Denmark



SMART TECH FOR WEED-FREE FIELDS DAY AND NIGHT



Photo: F. Poulsen Engineering APS

Chemical plant protection is a no-go for tackling weeds in organic fields. But, instead of turning to manual labour, organic farmers can thank Danish engineers for smart tools that help them keep weeds efficiently at bay.

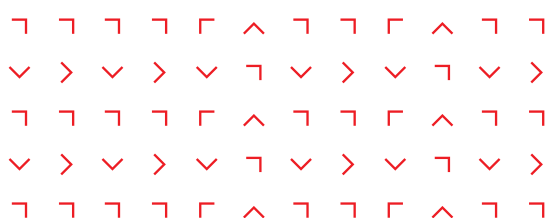
One of them is the Robovator, a weed-removing robot that is simply mounted on a GPS-controlled tractor. Fitted with special plant-detecting cameras, the device is made for precise mechanical or thermal weeding – even in the dark.

Due to its light weight, Robovator protects the soil as it goes. Weeds have never been dealt with faster or more sustainably.

Robot technology is just some of the investments that are helping to upscale certified organic production.

Case by F. Poulsen Engineering APS

Fitted with special plant-detecting cameras, the device is made for precise mechanical or thermal weeding – even in the dark



ORGANIC FARMERS SWITCH TO 100% GREEN ELECTRICITY

Organic milk from Arla is produced with electricity sourced from solar or wind energy

Danish agriculture took another step towards greener primary production on January 1, 2019. This was the date when 300 organic farmers from the Arla dairy cooperative switched to electricity from 100% sustainable sources. The farmers had all agreed on the initiative in an effort to reduce their carbon footprint.

Based on their decision, organic milk from Arla is now produced with electricity sourced from solar or wind energy. It has also been written into Arla's contract with

organic farmers that they must have a green electricity certificate that covers the farm's annual consumption.

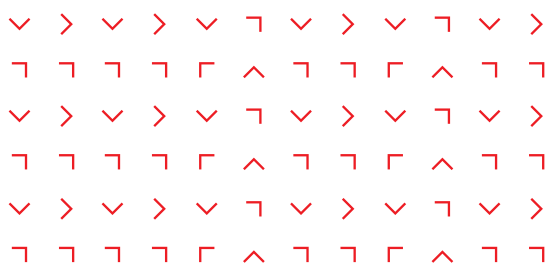
The certificates are purchased from a power company that can guarantee a year's supply of green electricity to each farm.

This is just one example of how the Danish food cluster continues to rethink ways of producing food with consideration for the environment.

Case by Arla Foods



Photo: Organic Denmark



DANISH KNOW-HOW SUPPORTS ORGANIC FARMING IN EASTERN AFRICA



Photo: Organic Denmark

FFLGs are a proven way to support and strengthen organic agriculture in farming communities that face challenges such as climate change

Thousands of East African farmers and their families are benefiting from Danish organic farming expertise, thanks to a knowledge-sharing initiative run by the Danish organic association, Organic Denmark.

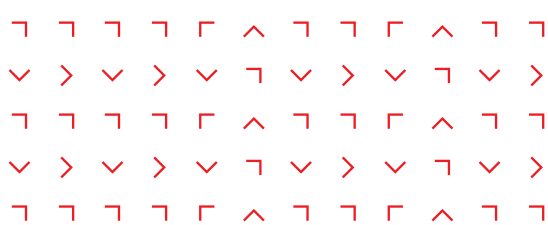
Over the years, Organic Denmark has established professional communities known as Farmer Family Learning Groups (FFLG) in partnership with local farming associations.

FFLGs are a proven way to support and strengthen organic agriculture in farming communities that face challenges such as climate change, food insecurity and unemployment. In this way, they contribute to several of the UN sustainable development goals.

Collaboration with the farmers is initially facilitated by specially trained staff. Once in place, the farmer/advisor relationship becomes a long-term, everyday multi-stakeholder interaction.

Organic Denmark is currently running three FFLG projects in Tanzania, Uganda and Zimbabwe.

Case by Organic Denmark



ORGANIC SEASON FEED GIVES ALL-ROUND BENEFITS

The summer months bring free-range organic sows an extra source of nutrition when protein-rich clover grass shoots up in the fields. And while that is heartily enjoyed by the pigs, it can be an expensive luxury for farmers and the environment.

The reason is that the standard feed, which the animals receive all year round, contains enough protein to keep the sows fit and healthy. With the supplement of protein from clover grass in the summer, the sows eat more protein than they can utilise. The unutilised protein then ends up as nitrogen in their manure, which is bad for the environment.

Now, the Danish feed company DLG – the largest farm supply company in Europe – has taken the challenge in hand and developed a new seasonal feed with a lower protein content for the summer period, where the sows get extra protein from clover grass.

That secures a better outcome for the sows, the environment and the farmer's budget.

Case by DLG



Photo: DLG



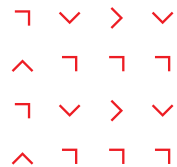
DLG has developed a seasonal feed which takes the sows' need for protein during the year into account

A man wearing a white lab coat and a hairnet is working on a production line. He is looking down at several OKO milk cartons on a conveyor belt. The cartons are brown and white, with the OKO logo and the word 'MÆLK' visible. The background shows industrial machinery and pipes.

CHAPTER 3

SCALING UP PRODUCTION IN AN INNOVATIVE UNIVERSE

A RELIABLE BRAND CREATES STRONG CONSUMER TRUST



Denmark has the best developed organic market in the world. Consumers have high trust in foods produced with an organic mindset and a flair for innovation.

Danish consumers buy more organic food products per capita than consumers anywhere else in the world. Organic food sales are also rising rapidly in hotels and restaurants, canteens, institutions and hospitals. Whether Danes eat at home, at work, on the go or in restaurants, organic food choices matter. This explains why organic food has a larger market share in Denmark than in any other country.

Danish organic food industry has made innovation one of its key virtues

The achievement is all due to the organic mindset of a growing number of Danish producers and retailers and their ability to earn consumer trust and meet demanding expectations. Not just to deliver an organic product, but also to create new and exciting innovations.

Staying authentic with minimum additives

In the production of organic food, manufacturers must follow strict guidelines for the raw materials and processes they may use. The emphasis is on organic ingredients and minimum use of additives. Only food additives on the EU positive list for organic products are allowed – around 13.5% of the 390 additives approved by the EU overall. Artificial colorants, artificial flavourings and sweeteners are not permitted, along with raw materials that are genetically modified or which have been subject to irradiation. Furthermore the use of nitrite is not approved by the Danish authorities in organic production.

Mild processing and careful documentation

With regard to processing, manufacturers employ the mildest possible techniques to maintain the intrinsic natural quality of organic produce. This is why most Danish organic milk, for example, is not homogenised.

While some companies focus exclusively on organic production, others produce a mix of organic and conventional products and must

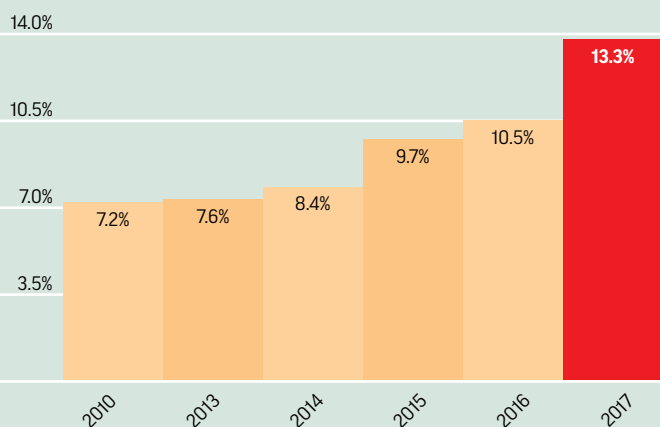
follow strict procedures to maintain the integrity of their organic range. At all times, companies must be able to document their actions to the authorities.

Most sales through mainstream outlets

Today, organic food products are widely available in Danish retail and food service. Wholesalers have a well-assorted range of organic products and, in recent years, organic sales to the food service sector have grown 20% per annum. The vast majority of organic sales, however, takes place through retailers and online trading – with convenient meal boxes becoming more and more popular among busy families.

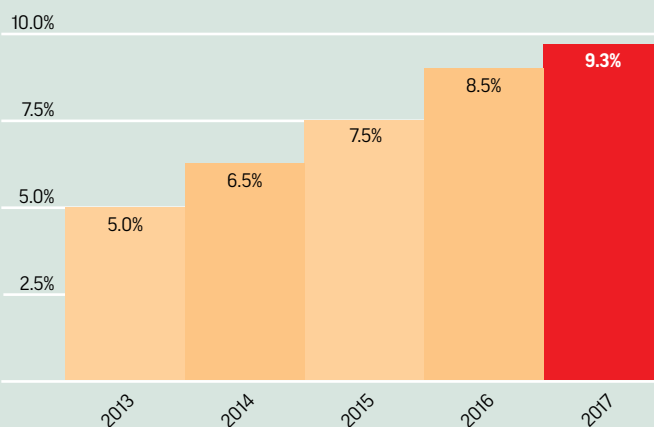
The organic sector has risen to popularity in an era where consumers increasingly demand more convenience. Its success reflects a fine-tuned ability to develop new organic products that meet this need, often against tough competition from conventional food producers. Through understanding and accommodating changing consumer requirements, the Danish organic food industry has made innovation one of its key virtues.

Danish organic market share in retail, including online sales



Source: FIBL-AMO, 2019

Organic share of sales to food service



Source: Statistic Denmark, 2018

HELPING PATIENTS RECOVER WITH ICE CREAM ON PRESCRIPTION



Photo: Modpol

A small appetite can be a barrier to recovery when people are ill or simply have trouble eating as they get older. In Denmark, doctors can prescribe special nutrition to boost patients' strength. Organic ice cream from Skee Is is one available option.

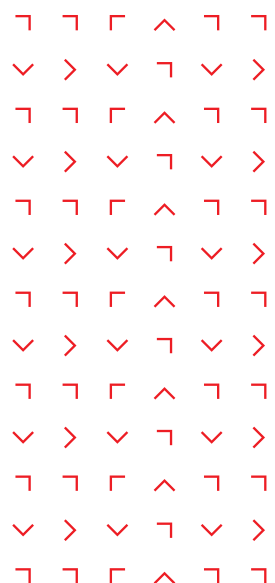
With just three members of staff, the small ice cream company produces a protein-rich ice cream that makes an important difference to elderly or ill people at risk of under-nutrition.

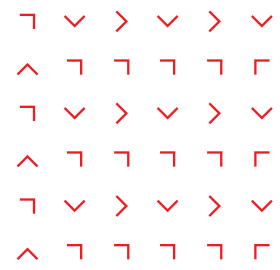
Doctors can prescribe special nutrition to boost patients' strength. Organic ice cream from Skee Is is one available option

The Danish Health Authority approved the ice cream products in 2014, making them the first in Denmark to be available on prescription.

All the company's ice cream products are made with organic, Fairtrade ingredients and are free of additives. Skee Is also exports to Norway and Sweden.

Case by Skee Is





THE LOVE OF THE FRENCH FOR FRILAND ORGANIC HAM

The story of Friland started in 1992 with a group of farmers who wanted to create an organic alternative to intensive pig production. The piglets were to be born in huts on free range pasture and raised with a strong focus on animal welfare and consideration for the pigs' natural behaviour.

From early on, Friland cooperated with Animal Protection Denmark to develop the best framework for organic farming and conduct an annual audit of each farm. This is why, for over two decades now, all product labels have carried the statement 'Recommended by Animal Protection Denmark'.

Today, Friland is Europe's biggest organic meat company where responsibility, integrity and safety are still the driving values.

Friland's organic pigs are exported all over the world. However, the population of one food-loving, European country has a particular fondness for them – that's France, where Friland sends 44% of its exports.

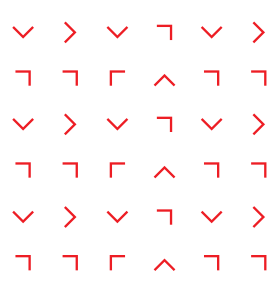
The ham is especially popular among French consumers because of the high, state-controlled organic standard, the professionalism of the farmers and the reliable, uniform quality deliveries.

Case by Friland

From early on, Friland cooperated with Animal Protection Denmark to develop the best framework for organic farming and conduct an annual audit of each farm



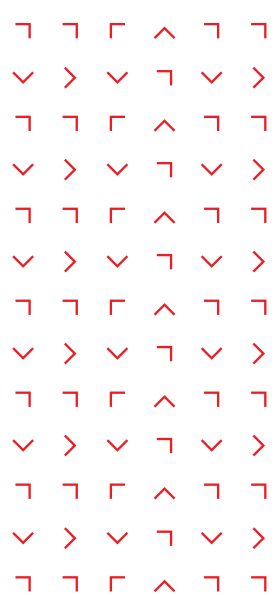
Photo: Friland



BRINGING ORGANIC THINKING TO THE CONVENIENCE MARKET



Photo: Easyfood



Convenience foods with an organic label were not top of mind when the Danish government started to encourage the use of organic products in hospitals, schools and other institutions. Here the focus was on producing meals from scratch with organic raw materials.

Several Danish food companies have a strong focus on organic convenience foods

Easyfood recognised a gap in the market for organic convenience products. Today, the Danish bakery company is helping to fill it with organic products that meet the growing demand for more convenience in the kitchen.

Several Danish food companies have a strong focus on organic convenience foods. As a result, organic foods for on-the-go consumption are on the rise, including bake-off products for international markets.

Case by Easyfood

INNOVATIVE PRODUCTION IN SMALL-SCALE BREWERIES

One of the remarkable things about the growth in Danish organic consumption is the role of the many small-scale breweries in Denmark's country villages. From very early on, these breweries set up organic production and became some of the first organic suppliers to the Danish population.

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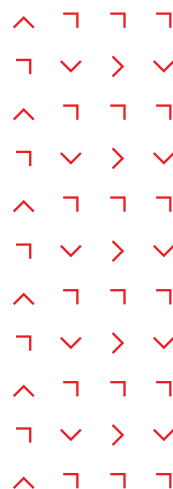
One of them is Thisted Bryghus in north-west Jutland, which launched the very first organic pilsner in Denmark in 1995. Since then, as excitement with organic beer has grown, the brewery has launched a wide range, including some special brews.

Today, breweries like Thisted Bryghus continue to be ambassadors of innovative, organic production - and are a source of inspiration for larger breweries as well.

Case by Thisted Bryghus



Photo: Thisted Bryghus

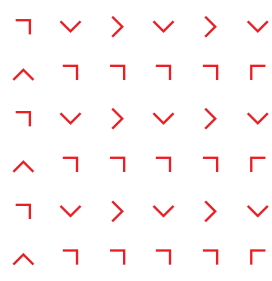




CHAPTER 4

STATE CHECKS AND LABELS ARE THE CONSUMERS' GUARANTEE

COMPLIANCE WITH EU REGULATIONS - AND WAY BEYOND



The Danish government passed the world's first organic legislation in 1987. This was when the first state-controlled organic label - the 'Ø-label' - was introduced.

Farm-to-fork checks and inspections are key to the high consumer trust in Danish organic products

Denmark was the first country in the world to introduce a state-run programme for organic control. That was in 1987, and today it is still the consumers' guarantee that all stakeholders from farm to fork comply with organic regulations. All organic farms, suppliers and organic food companies are subject to government inspections at least once a year as an add-on to other regulatory inspections.

This ensures that organic food is produced in compliance with the EU's organic regulations.

In addition to living up to organic regulations, organic farmers and feed and food companies must comply with the legislation that applies to food production in general - in respect of the environment, nature, animal welfare, traceability, hygiene and food safety.

Earning consumer trust is a long-term effort with a strong focus on compliance with organic regulations. One example of this is the random cross-checks regularly practiced by the authorities. This ensures, that company records concerning purchases of organic raw materials are consistent with supplier sales records.

Organic farmers and companies also welcome farm-to-fork checks and inspections, which help maintain the credibility of organic production. This is key to the high consumer trust in Danish organic products.

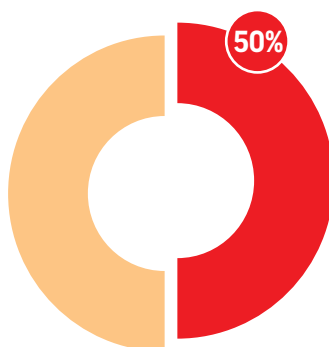
High consumer trust in organic labels

Organic products sold in Denmark are often labelled with both the EU's green leaf logo and the Danish red 'Ø'. Created in 1987, the state-controlled 'Ø-label' confirms that the Danish authorities have ensured compliance with organic regulations. Almost all Danish consumers are familiar with the national label and the state control behind. Such labels play an important role in maintaining a high level of consumer trust in organic food.

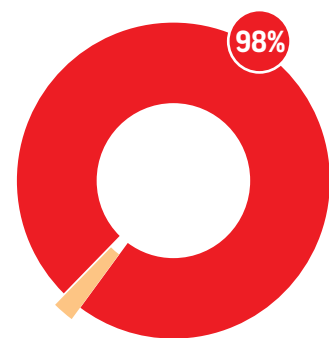
As demand for organic food has gone up, Danish consumers have shown increasing interest in the organic farms that produce it. One day of the year stands out in particular - Organic Day, when organic cows leave their winter barn and return to grass pastures. Public participation in this annual event continues to rise.



80% of Danes purchase organic products

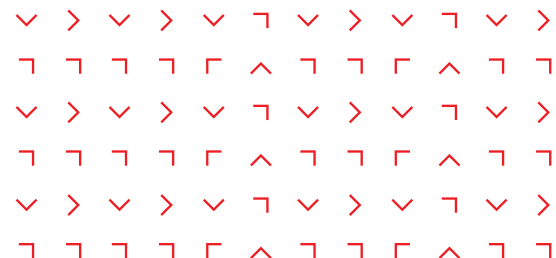


More than 50% buy organic food every week



98% recognise the Danish organic logo - the red Ø

Source: Organic Denmark, 2018



SPRING STARTS WHEN THE COWS COME OUT TO DANCE



Photo: Organic Denmark

Organic Day was held for the first time in 2005 with 10,000 visitors. Now around 250,000 people turn up for the event each year

Every year, on a special Sunday in spring, Danish families flock to the countryside. The occasion is Organic Day, when organic cows 'dance' out of the barn and on to the fresh spring grass after a long winter spent indoors.

It is not just the cows that Danes come to see. For many, this big national organic event is a celebration of spring. It is also an opportunity to experience the value of organic farming to animals and the environment at close hand.

Organic Day was held for the first time in 2005 with 10,000 visitors. Now around 250,000 people turn out for the event each year.

The event is arranged by the Organic Farmers Association and is a great way to engage consumers and create a bridge between city and countryside.

Case by Organic Denmark

STRICT ORGANIC CONTROLS ENSURE FULL COMPLIANCE

Danish primary producers are renowned for their ability to produce organic products in compliance with national as well as international standards. This is also approved by the high degree of control by Danish authorities in which farmers are confirmed that their production fulfills the standards.

According to EU law, national control authorities must conduct at least one annual control visit to ensure full compliance with the rules.

State-employed inspectors carry out the organic controls, which are coordinated by a central authority to ensure uniform control throughout the country. If the authorities discover any infringements of the organic regulations, a number of actions can be taken, depending on the extent of the breach.

The organic controls have been in place since Denmark adopted its first organic laws back in 1987. They have been carried out by authorities under the Ministry of Food and Agriculture ever since.

Case by The Danish Agricultural Agency

State-employed inspectors carry out the organic controls



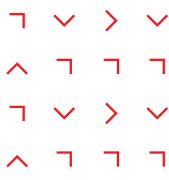
Photo: The Danish Agricultural Agency

A top-down photograph of various fresh ingredients. In the top left, a yellow ceramic dish is filled with bright red raspberries. To the right, a green ceramic tray holds a bunch of fresh green herbs with small yellow flowers. Below the raspberries, two large red and yellow apples are visible. In the bottom left, a green ceramic tray contains several hazelnuts, some with their husks. To the right of the hazelnuts, another green ceramic tray is filled with vibrant orange chanterelle mushrooms. The background is a dark blue textured surface.

CHAPTER 5

A CULINARY JOURNEY WITH ORGANIC ROOTS

THE SUSTAINABLE MINDSET BEHIND
NEW NORDIC CUISINE



Denmark has earned international respect for its high gastronomic standards. Organic food and drink plays an important role.

New Nordic Cuisine has put Denmark on the gastronomic world map in recent years. Organic food has played an important role in the culinary journey towards international recognition.

It all began in 2004 when a group of visionary chefs joined forces to create a new Nordic food culture. The founding idea was to use natural, locally sourced and seasonal raw materials in an innovative and creative way. Since then, their manifesto has spread throughout the Danish culinary world, where many talented chefs now develop new and exciting dishes based on the philosophy of New Nordic Cuisine.

Michelin stars are the reward

These high culinary ambitions have brought rewards and an international reputation. The number of Danish restaurants that have been singled out for a coveted Michelin star has grown by leaps and bounds. Simplicity, sustainability and innovation are all part of the successful mix – along with organic raw materials, produced in Denmark.

A number of the farmers who supply raw materials to Michelin-starred restaurants are organic producers. Their special focus on animal welfare and the environment reflects the spirit of New Nordic Cuisine. As a result, many of the sublime dishes created in Denmark's prestigious restaurants have an organic source.

Kitchens and canteens in the public sector were the initial drivers of the organic movement

Organic growth within food service

Throughout the Danish food service sector, around 10% of raw material purchases are now organic, with further growth expected in the years ahead. Kitchens and canteens in the public sector were the initial drivers of the organic movement, which came later to hotels and restaurants. Today, however, hotels and caterers account for half the food service sector's consumption of organic food.



Photo: Per-Anders Jörgensen

SPARKLING ORGANIC TEA IS AN INSTANT MICHELIN HIT



Photo: Copenhagen Sparkling Tea

Two Danish entrepreneurs successfully tapped into the organic and low-alcohol trends when they developed a whole new beverage category to match a restaurant dessert. The result is the beverage company Copenhagen Sparkling Tea, which after just two years on the market exports to more than 15 countries.

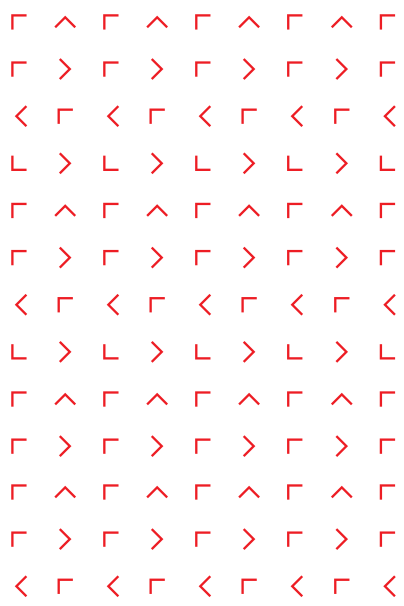
The idea came up when a Danish award-winning sommelier discovered there was no wine to complement the dessert at the restaurant where he worked. After a few experiments, he discovered an unexplored potential in various blends of tea.

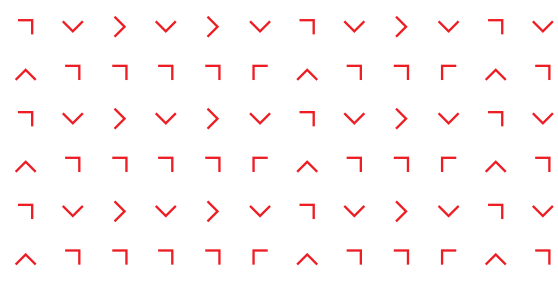
Up to 13 teas go into each bottle in the Sparkling Tea range, which quickly found its way onto the menu of several international Michelin restaurants.

The beverages have also achieved international acclaim with several awards, including Best Organic Product at both the world's largest organic fair, BIOFACH, in 2018 and the LOHAS international organic fair in Hong Kong in 2019.

Up to 13 teas go into each bottle in the Sparkling Tea range, which quickly found its way onto the menu of several international Michelin restaurants

Case by Copenhagen Sparkling Tea





SHORT JOURNEY FROM FARM TO FORK ENSURES THE HIGHEST QUALITY

More restaurants with solely organic menu cards are emerging in Copenhagen. At restaurant BÆST, they have taken it a step further. When you visit their restaurant in Copenhagen, the journey from primary production to the food on your plate is particularly short.

The restaurant is part of the 'Farm of Ideas' project – a 30-hectare farm that is a melting pot for innovation, gastronomy, community and organic agriculture.

Unlike traditional organic farming that practices ploughing, Farm of Ideas grows vegetables in permanent beds to disturb the soil as little as possible. The inspiration is from the urban market-gardening movement.

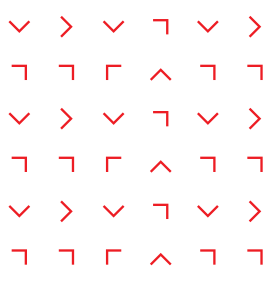
It means the restaurant is able to offer a high-quality organic experience at a low price. That makes BÆST a great example of how Danish restaurants are embracing the organic movement.

Case by BÆST



Photo: BÆST

The restaurant is part of the 'Farm of Ideas' project – a 30-hectare farm that is a melting pot for innovation, gastronomy, community and organic agriculture



PROFESSIONAL KITCHENS TAKE PRIDE IN AN ORGANIC LABEL



Photo: Robin Skoldborg

Kitchens can qualify for a Bronze, Silver or Gold label depending on whether they use 30-60%, 60-90% or 90-100% organic raw materials respectively



The Danish authorities have closely followed the growing consumer demand for organic food. In 2009, they decided the time had come to give consumers an organic choice when eating out – whether in a restaurant or canteen.

The solution was the Organic Cuisine Label. Launched by the Danish Veterinary and Food Administration, the state-controlled labelling scheme allows public and private professional kitchens to brand themselves based on how much organic produce they use.

The idea is simple. Kitchens can qualify for a Bronze, Silver or Gold label depending on whether they use 30-60%, 60-90% or 90-100% organic raw materials respectively.

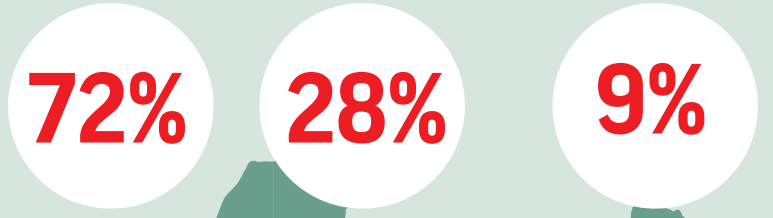
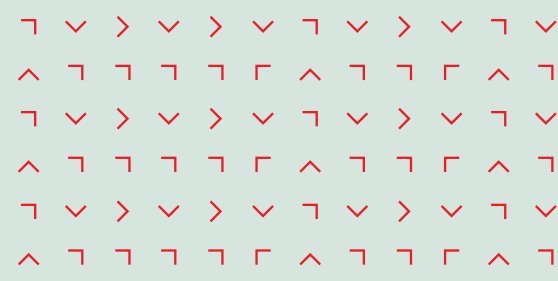
Once introduced, the Organic Cuisine Label quickly caught on. The scheme now numbers more than 2,700 restaurants, cafeterias, catering firms, staff canteens, nursing homes, schools, kindergartens, prisons and hospitals – causing the organic food market to grow even bigger.

In other words, organic food is accessible everywhere in Denmark and in all phases of life. Even a large public hospital has managed to attain the Gold label for 90-100% organic produce in the kitchen.

Most importantly, consumers can enjoy organic food just as much when eating out as when they are at home. And, if they are not sure where to go, they can download an app to their smartphone to find restaurants with organic food on the menu all over Denmark.

Case by The Danish Veterinary and Food Administration

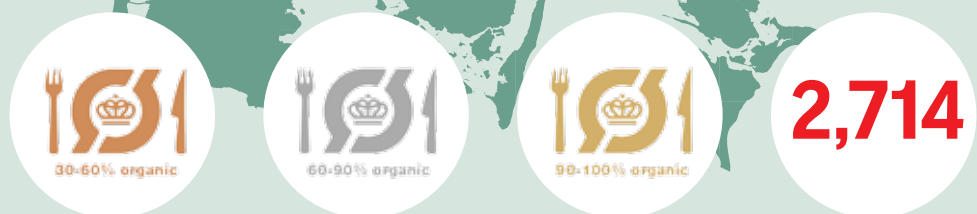
THE ORGANIC CUISINE LABELS IN DENMARK



are in public kitchens are in private kitchens are in HORECA kitchens*

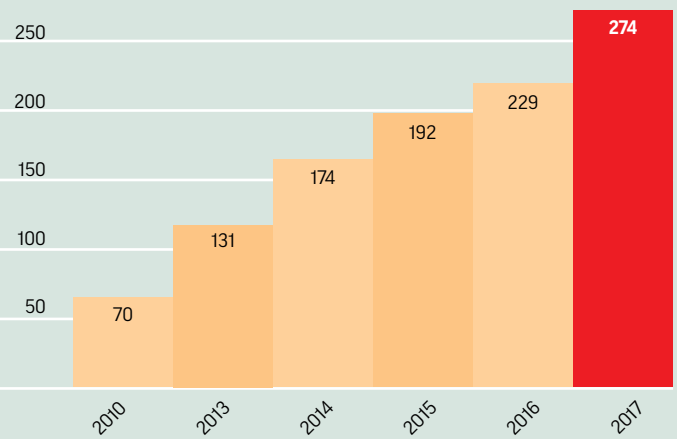


The Danish Ministry of Environment and Food has supported the organic conversion of kitchens in 36 municipalities



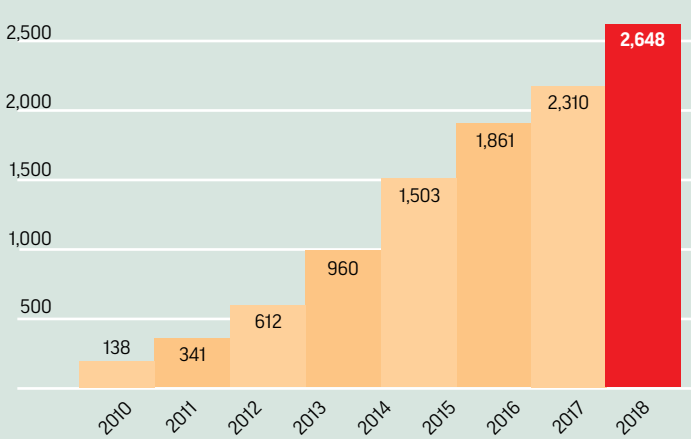
1,108 **1,112** **494** **Organic cuisine labels, March 2019**

Organic sales in food service (million EUR)



Source: Statistics Denmark, 2018

Organic cuisine labels 2012 - 2018



Source: www.oekologisk-spisemaerke.dk/horeca-en

*hotels, restaurants and catering



CHAPTER 6

THE NATIONAL PLAN FOR ROLLING INNOVATION

COLLABORATIVE PROJECTS PUT KNOWLEDGE
INTO ACTION

Organic research and innovation are a national priority. It is the reason why Danish farmers and food producers have come such a long way – and continue to improve.

Government-backed research and innovation have supported the development of Denmark's market-driven organic sector for more than two decades. Following the initial Organic Action Plan launched in 1995, the Danish Ministry of Environment and Food introduced the first national research programme for organic farming and food production just a year later – a four-year initiative involving 11 Danish research institutions.

These successful, ongoing research programmes are the foundation on which Denmark has built its international reputation as a leader in organic farming. The International Centre for Research into Organic Farming and Food Systems (ICROFS) is the coordinating research centre, collaborating with farmers, companies, universities, knowledge institutions etc.

Organic research supports the development of new solutions throughout the supply chain

Becoming a global reference

The vision of ICROFS is that organic principles should become a global reference for sustainability in agriculture and food production. For the last 15 years, ICROFS also coordinates the European research network CORE-Organic (Coordination of European Transnational Research in Organic Food and Farming Systems).

Organic research supports the development of new solutions throughout the supply chain. The goal is to move the Danish or-



ganic sector towards ever greater sustainability, more climate-friendly production, increased productivity and a sound, market-driven business proposition for producers. Research topics include:

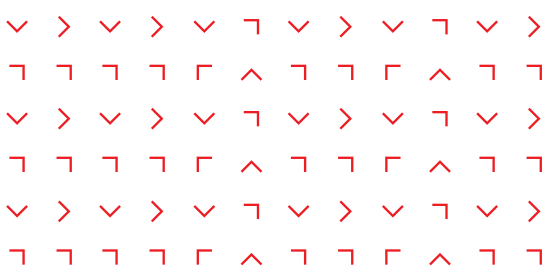
- How to increase yields from organic crops.
- How to extract protein from clover grass for animal feed – and how to produce biogas from the residual product.
- How to bind more carbon in the soil.
- How to increase animal welfare in organic production.

A short route from research to application

All research activities are stakeholder-driven. Scientists, practitioners, advisers and other professionals work together to develop new opportunities that can strengthen organic production. In this way, the route from knowledge development to practical implementation is short.

Working with ICROFS, industry organisations ensure that organic research and development stay on the political agenda and continue to receive funds for solving specific challenges.

Conferences and seminars present the latest knowledge to the representatives of the international organic sector. ICROFS is also behind an international article database – Organic Eprints – which is the world's largest open archive of research in organic agriculture and food, comprising more than 22,000 publications.



NUTRITIOUS PROTEIN FROM THE JUICE OF FRESH CLOVER



Photo: SEGES Danish Agriculture + Food Council

Containing 40% protein and a good amino acid composition, it can easily replace soy cakes in pig and poultry feed

A new biorefining technique that extracts protein from green herbage promises to solve a growing challenge for organic pork and poultry producers, who are short on feed with the right amino acid composition.

The technique has been co-developed by research partners from Denmark's private and public sector. Results from feeding trials show that the protein in clover grass and alfalfa, for example, is high in nutritional value.

When extracting the protein, large amounts of freshly and finely cut green herbage are squeezed in a screw press. The juice is then transferred to an acid tank, heated and fermented using a lactic acid culture.

Concentrated protein is removed from the juice by centrifugation. Containing 40% protein and a good amino acid composition, it can easily replace soy cakes in pig and poultry feed.

Once ready for commercial launch, the green leaf protein will provide organic farmers with an efficient local source of nutrition for their livestock. Residues from production can also be used to feed cows and fuel biogas plants.

Case by SEGES Landbrug & Fødevarer F.m.b.A.r

BIOGAS SOLVES FERTILISER SHORTAGE IN ORGANIC FARMING

A shortage of fertilisers used to make life difficult for organic vegetable farmers who were experiencing growing international demand for their produce – until Nature Energy recognised their need and built a new biogas plant.

In agriculture, the digested biomass is known to be an effective, green fertiliser

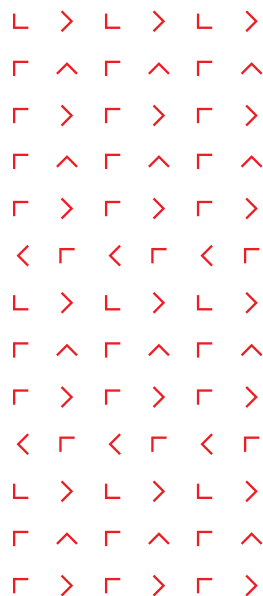
The renewable energy is produced using biodegradable residues from Danish organic farmers and food production. And, in agriculture, the digested biomass is known to be an effective, green fertiliser.

Thanks to the biogas plant, organic vegetable farmers now have a reliable supply of biomass to fertilise their fields – a truly circular success story.

Case by Nature Energy



Photo: Nature Energy



A woman in a red patterned top and dark pants is speaking to a group of people in a hallway. The hallway has a wooden floor and a grey carpet runner. There are posters on the walls, including one that says 'WELCOME TO FOOD NATION'.

CHAPTER 7

AN ORGANIC FRONT-RUNNER BUILT ON A VISION

LEARN MORE ABOUT THE DANISH FOOD CLUSTER
AND IT'S STRONGHOLDS AT FOOD NATION

Denmark has grown into an organic powerhouse over the last 30 years. Today, an entire industry continues to develop innovative opportunities of benefit to our home market and to business partners abroad.

In 1988, organic food producers in Denmark had a market share that was less than 1%. Three decades later, their share has grown to more than 13% – a figure that continues to rise year by year.

The organic adventure all started with a vision to create a new way of producing food. That innovative, collaborative mindset has since put Denmark on the map as an organic frontrunner, where the retail sector sells more organic food than in any other country.

public organisations belong to the extensive, collaborative network. Together, they work hand-in-hand with international partners to maintain and improve food quality and safety along the value chain.

Take an interactive tour

Food Nation's Visitor Centre in central Copenhagen welcomes international delegations, providing them with an introduction to Danish capabilities within food. An inter-

active installation at the centre gives visitors an up-to-date overview of the food value chain based on their individual interests. It is the ideal starting point before visiting Danish food producers and production facilities.

Food Nation is a great place to start learning about how you can benefit from the Danish food cluster. Find out more about our services and arrange a visit to the Food Nation Visitor Centre at foodnationdenmark.dk.

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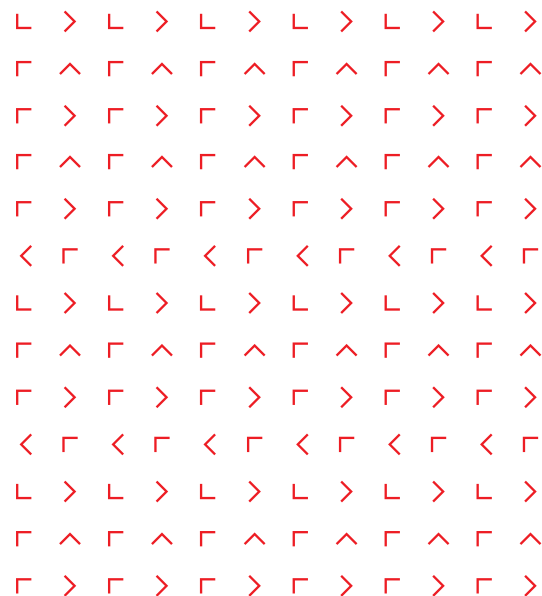
Food Nation Denmark

Food Nation is a non-profit partnership established by the Danish government and leading private organisations and companies. It is your gateway to information about the Danish food cluster and know-how that can accelerate the growth of international businesses through better solutions, innovative products and trusting cooperation.

The Danish food cluster encompasses everything from primary production in agriculture and the fishing industry to the food products consumers buy in stores. Companies, universities, research institutes, local and national authorities and other private and



Photo: Food Nation



**INGREDIENTS
INDUSTRY**

Producers of enzymes,
cultures and other ingredients

**PRIMARY
PRODUCTION**

Agriculture, fishing
& horticulture

**PROCESSING
INDUSTRY**

Producers of food,
beverages & animal feed

The Danish food cluster

Denmark is home to countless large,
medium-sized and small companies,
research institutes and other organisa-
tions that make the country a
European hotspot for innovative food
products, services and technology.

**RESEARCH
& INNOVATION**

Research, education
& counselling institutions

**FOOD
TECHNOLOGY**

Producers of machines,
technology & equipment

**GASTRONOMY
& THE CONSUMER**

Retail, consumers, restaurant,
authorities, tourism & other
related industries

READ MORE

FOODNATIONDENMARK.DK

