

A circular business model

| CSR Report 2019/20

LET'S TAKE FOOD FORWARD



“Our vision is to integrate sustainability into everything we do. We are well on our way, but we can go even further. Our report is another way to commit ourselves to achieving the goals we set – and a tool to measure our performance.”

Jesper Burgaard, CEO

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From basic common sense to ambitious circular growth



By utilising all the good properties of the potato, KMC creates an attractive business model that leaves a minimal footprint on the environment and is gentle on nature and humans.

KMC's business model has been circular from the outset. We literally utilise the entire potato – from peel to core. We grow potatoes in the same fields that we did 100 years ago. We do not deplete the soil and we are continuously refining our production methods. In our view, this is common sense.

Potatoes have one of the lowest climate footprints among Danish crops. It provides many calories per hectare with a nutritious and healthy profile. This humble tuber has far more uses than it leads to believe. These are fantastic strengths that we are constantly working to develop further. At our own innovation centre, through collaborations with universities and at political level.

The primary weakness of the potato is its need for protection against aggressive fungal diseases which can destroy an entire field in five days.

What do we mean by sustainability?

To us, sustainability means “producing a product that contributes to solving the world's challenges with hunger, climate change and biodiversity, and that the production is based on the least possible input and thus minimum strain on the earth's resources”.

Therefore, it is also natural for us to continue to focus on reducing our use of plant protection products as much as possible. To reduce our consumption of electricity and gas. And to keep converting residual products into resources. Like the spirals in the Zealand Forest Tower, where each full circle offers new perspectives. Like wastewater that can become bioplastic. Or perhaps even for disease prevention some day.

We want to strengthen our sustainable growth and show how CSR and business can interact beneficially with each other. How we can contribute to reducing our climate footprint by replacing animal ingredients with plant-based ingredients. And by reducing imports of feed protein by making potato protein available for Danish feed production.


A CSR Report that obligates us

Our customers and society in general increasingly have a natural expectation that we, as a responsible business, tell them how we will contribute to improving sustainability.

Our aim with this CSR Report is to show what KMC means by: *Acting responsibly – in everyone's best interests*. Our vision is to integrate sustainability into everything we do. We are well on our way, but there is still room for improvement. Therefore, our report is also a way to commit ourselves to achieving the goals we set – and a tool for measuring our goal performance.



Jesper Burgaard
CEO



"... to reduce our consumption of electricity and gas. And to keep converting residual products into resources. Like the spirals of the Zealand Forest Tower, where each circle offers new perspectives. Like wastewater that becomes bioplastic. Or perhaps even for disease prevention some day."

Jesper Burgaard, CEO

KMC was circular before the concept existed



KMC was established as Kartoffelmelcentralen in 1933. Since then, our potato growers have managed to cultivate the lean soil of Jutland with potatoes which form the basis for increasingly innovative ingredients for the food processing industry.

KMC is a cooperative society, owned by Danish potato growers, which develops, produces and exports potato-based ingredients for food products, feed and other products to more than 80 countries.

It is no secret that Denmark has some of the best soil in Europe for potato growing, and the potato's diversified potential has only become clearer over the years. We are continuously working to strengthen our sustainable growth, and we maintain our strong focus on supporting a circular agenda in everything we do. Because it quite simply makes the most sense.

KMC's mission is to be the natural first choice as a supplier of value-adding potato-based ingredients – both inside and outside Denmark. Our circular business model is, in fact, not just good business. Due to the long growing season and low climate footprint of the potato, it is one of the Danish crops that emits the least CO₂. It is a win-win situation: Both for the economy and for the environment.

Now, we have taken another innovation round in the circles of the Forest Tower and are ready with a new perspective: Launch of protein for use in food products. The high nutritional value of the potato protein opens up for a wide range of new applications that create value for people, the environment and the climate. Precisely how we like to do things at KMC.

Established

1933

Headquarters

Brande, DK

Employees

224

Danish potato growers' ownership share

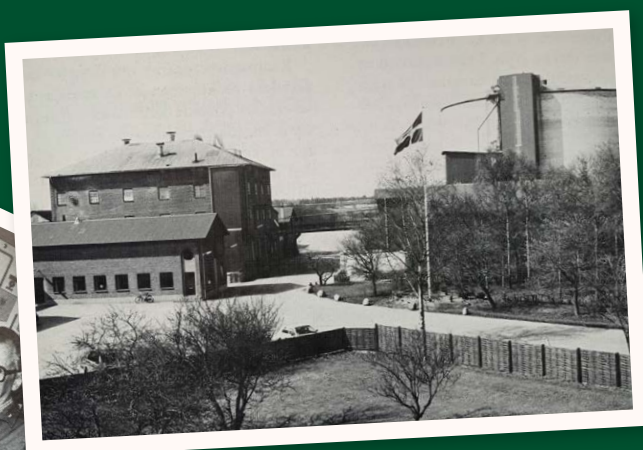
100%

Countries to which the products are exported

86

Export share

94%



How we use the potato

Although it has been more than 80 years since our foundation, our philosophy remains the same: Simple common sense is the basis for sustainable food production for the benefit of all. We are constantly looking for new ways of utilising everything in the potato – right from juice and starch to protein and fibre – in new and increasingly valuable ways.

18-20%

At KMC, we produce conventional **potato starch**, which is used in the food processing industry for products such as pasta, noodles, soups and sauces. Refined potato starch can replace or reduce animal proteins such as casein in cheese, gelatine in wine gums and eggs in mayonnaise.

1-2%

Potato protein has a beneficial amino acid composition and is used for animal feed – but it can now also be used to increase the nutritional value of food products. For example, we expect that the potato protein, with its excellent properties, can help elderly people with little appetite achieve an appropriate diet, help vegetarians and vegans get enough protein and help consumers who practise fitness build up muscle mass.

73-78%


Potato juice – also called prota-mylasse in concentrated form – is potato fruit water used both for biogas and as a fertiliser on agricultural land. This area also holds new opportunities going forward.

1-2%

The **potato fibres** are used in food production as they bind water efficiently and have good digestive properties.







"KMC's business model is anchored in a circular economy based on the potato. A principle which means that we utilise the entire potato as a raw material for an increasing number of valuable products – while reducing the amount of waste and our climate footprint at the same time."

Jesper Burgaard, CEO

Our five CSR goals

With the UN Sustainable Development Goals (SDGs) as a framework, we are working to achieve these five goals by 2024/25. We follow up on the progress annually.

Goal 1: Replace animal ingredients with plant-based ingredients



SDG goal 12: Responsible consumption and production

Ensure sustainable production and consumption patterns.

Long-term goal

We will replace 39,000 tonnes of animal proteins with plant-based alternatives in selected food systems in 2024/25.

Goal status

In 2019/20, we have replaced a total of 23,516 tonnes of animal protein in 60 different countries.

Goal 2: Increase the use of Danish-produced feed protein over imported alternatives



SDG goal 15: Life on land

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Long-term goal

We will implement minimum 10,000 tonnes of potato protein in Danish feed in 2024/25.

Goal status

In 2019/20, we have implemented 5,228 tonnes of potato protein in Danish animal feed.



Goal 3: Less use of plant protection products



SDG goal 15: Life on land

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Short-term goal

We want to minimise the use of plant protection products as much as possible by advising the growers. Depending on the weather, the goal is 10–30% each year.

Goal status

In 2019/20, we recommended reducing the use of plant protection products by 15.3%.

Long-term goal

We will increase the development of new varieties with improved resistance to primarily leaf spot and mould. The goal is minimum 10,000 new hybrids a year by 2024/25.

Goal status

In 2019/20, we created 3,220 new hybrids with focus on higher disease resistance.

Goal 4: Well-being, safety and diversity



SDG goal 8: Decent work and economic growth

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

Long-term goal

In 2024/25, we have the following goal:

- 16% women on KMC's Board of Directors
- 25% women on KMC's International Management Committee
- 40/60% gender distribution (f/m)
- Max. 15% staff turnover
- Max. 2% rate of sickness absence.

Goal status

In 2019/20, the status was:

- 0% women on KMC's Board of Directors
- 12.5% women on KMC's International Management Committee
- 42/58% gender distribution (f/m)
- 12.9% staff turnover
- 2.29% rate of sickness absence.

Goal 5: Reduce resource consumption and increase wastewater treatment



SDG goal 12: Responsible consumption and production

Ensure sustainable production and consumption patterns.

Long-term goal 1

The goal is to reduce energy consumption per tonne of processed starch by 10% in 2024/25 relative to the reference year 2017/18.

Goal status

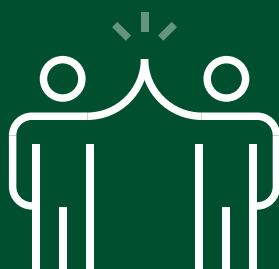
In 2019/20, we have reduced energy consumption per tonne of processed starch by 7.4% relative to 2017/18.

Long-term goal 2

The goal is to treat 100% of the wastewater at our own facility to a degree of purity that allows the wastewater to be discharged directly to the recipient in 2024/25.

Goal status

In 2019/20, we treated 97% of the wastewater at our own facility to a degree of purity that allows the wastewater to be discharged directly to the recipient.



Responsibility towards the climate promotes plant-based food products

Consumption of plant-based food products has increased significantly in recent years, and it has gradually evolved into a megatrend in the Western world. Some have gone *all in* on veganism. Others have introduced a weekly meat-free day. And yet others are flexi, pesci or vegetarians.

They all have in common that they orient themselves towards new types of meals and principles, and climate responsibility is a central issue for most of them. At KMC, we believe that our ingredients can help support this focus. We develop food ingredients and offer demo kits to our customers with the aim of replacing as many animal ingredients as possible with potato-based ingredients – which by definition are plant-based.

In wine gums, we replace animal gelatine with modified starch. We develop cheese recipes where we reduce milk protein – as well as mayonnaise, where we replace egg yolk. All with ingredients from our potatoes.

39,000

KMC will replace 39,000 tonnes of animal ingredients with potato-based ingredients in 2025.

The end-user does not need to compromise

Our primary task is to ensure that the consumer does not notice any difference in whether animal or potato-based ingredients have been used in the product. Therefore, we work with texture and bite, among other elements, so we meet both the customers' and the end-user's expectations for the appearance, feel and taste of the wine gum.

Increased focus on CO₂ emissions from raw material to end-use product

At KMC, our expectation for the near future is that there will be requirements for greater transparency in relation to ingredients and climate footprint.

Sustainability and the environment will only become increasingly important. It is possible that both we and our customers must account for how much the individual food product has impacted CO₂ emissions from raw material to end-use product.

Here, we believe that we can make a positive difference for our customers. By 2025, we will increase the proportion of potato-based ingredients that can replace animal ingredients to 39,000 tonnes. In this way, our customers will increasingly be able to replace animal ingredients with potato-based alternatives.

| Financial year | 17/18 | 18/19 | 19/20 | 24/25 |
|---|--------|--------|--------|--------|
| Tonnes of potato-based ingredients replacing animal ingredients | 18,514 | 19,779 | 23,516 | 39,000 |

Danish crops are associated with sustainability

Danish crops are not only a guarantee of high quality. They are increasingly associated with sustainability.

According to the public-private partnership Food Nation and its insight analysis from 2020, quality, sustainability and food safety are among the qualities that foreign decision-makers associate with Danish crops.

But according to the CEO of Food Nation, Lise Walbom, there is a great untapped potential for food producers to do more to use sustainability as a strategic selling point. Especially on export markets:

"The focus on climate change and the UN Sustainable Development Goals has increased, and if we're to meet the requirement to reduce the carbon footprint from food production, we need to examine how we can balance the quantity of animal ingredients. There are many food companies with a long history of sustainable food production – but they take it for granted and could easily do more to communicate this focus."

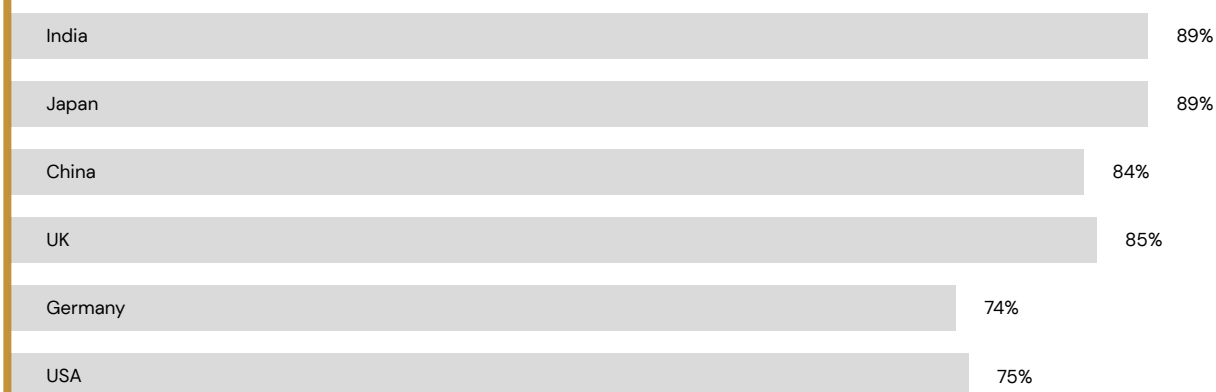
The insight analysis also shows that, on average, 83% of the international respondents surveyed believe that sustainability will play a greater role for their businesses in the coming years (see the figure below). Many Danish food producers thus have an obvious opportunity to increase the narrative about how they make a positive difference to the green agenda:

"KMC offers a range of innovative solutions that can accelerate innovation on the plant-based market. Both they and their customers have huge knowledge and experience that strengthen their position on their export markets. They should definitely not hold back on this," says Lise Walbom, and concludes:

"There's no doubt that we'll see many new and exciting alternatives to animal products in the coming years. And here, KMC can play a big role."

83%

of the respondents believe that sustainability will play a greater role in the future.



Source: Insight report on Denmark as a food nation 2020



Did you know that:

potato starch is the ideal plant-based alternative to animal gelatine, which is conventionally used in wine gum? At KMC, we have employees who work exclusively with the development of wine gums based on potato starch so that it achieves the right consistency and mouth-filling properties.

KMC goal 2:

Increase the use of Danish-produced feed protein over imported alternatives

15 LIFE
ON LAND

Locally grown potato protein in Danish feed – the sustainable choice

To reduce the need for imported feed protein, KMC will deliver 10,000 tonnes of potato protein to the Danish agricultural sector by 2024/25 – and we are well on our way.

Did you know that:

The potato protein is extracted from a side stream from our existing potato starch production? That way, we extract Danish-produced protein from the same land and with the same environmental impact.



“We have set ourselves the goal of delivering 10,000 tonnes of potato protein to the Danish agricultural sector by 2024/25. This way, farmers can use the resources that are already here, rather than importing protein sources from abroad. We have allocated new resources to the project and expect a positive process.”

Jesper Burgaard, CEO

Feed for piglets and other animals consists of a wide range of different nutrients and protein sources. Protein is typically a major ingredient in feed mixtures and has often been imported from abroad. Potato protein can play a positive role here, as the potato is grown in Denmark with a modest climate footprint.

The potato protein is extracted from a side stream from our existing potato starch production. That way, we extract Danish-produced protein from the same land and with the same environmental impact. Many Danish farmers grow potatoes themselves in the field and receive the potato protein back in the feed for their livestock. Added to this is the potato's wide range of good properties which contribute to optimal feeding of the livestock.

At KMC, we are therefore working to increase the share of potato protein in feed for Danish piglets. We are also working on how potato protein can be included in the feed for other animal groups.

Danish and competitive

Potato protein is not a new raw material, and it has been used extensively in feed mixtures in the past 30 years. Until now, a limited quantity of potato protein has been used in Danish piglet feed, but with new knowledge about potato protein it is now possible to increase the quantity with positive results.

The limited use of potato protein to date is connected with the fact that there have not previously been enough potatoes available. However, since the removal of the EU quotas in 2011, twice as many potatoes have been produced and produced more effectively. Potato protein is now fully competitive with other protein sources.

The potato as Danish food protein

Nutritionally, potato protein has a better amino acid profile than most other plant-based protein sources, which means that animals digest the protein optimally. In this way, less nitrogen is also emitted with the manure used as fertiliser in Danish fields.

Piglets may have digestive problems immediately after they are weaned from the sow, which requires medicine in the most difficult cases. At KMC, we are therefore examining how we can supply raw materials for feed mixtures that can better meet these challenges for a wide range of animals.

5,228

KMC sold 5,228 tonnes of potato protein to the Danish agricultural sector this year.

Development in sales of feed protein

| Financial year | 17/18 | 18/19 | 19/20 | 24/25 |
|---|-------|-------|-------|--------|
| Tonnes of potato protein sold to the Danish agricultural sector | 5,846 | 4,856 | 5,228 | 10,000 |

Reduced spraying requires good connections

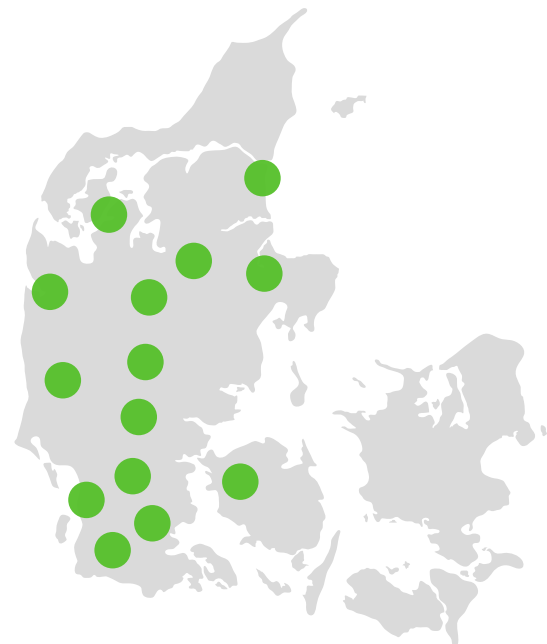
The potato covers two per cent of the Danish agricultural area. It is both climate-friendly and versatile, but vulnerable to diseases.

This is mainly because potatoes – and vegetables in general – are more sensitive to diseases than other types of crops.

Fungal diseases such as mould and leaf spot are very weather dependent – dry, hot summers are bad news for the diseases, while humid weather with temperatures between 18–22 °C gives them good conditions to spread. During a season, there is a need to spray regularly – especially against fungal diseases, which can potentially destroy a field completely in only five days.

We all have an interest in reducing consumption to a minimum. And how can we do that? It requires good connections to predict the weather. But also to the Internet and EU legislators.

▼ Each of the green circles marks an adjusted spray recommendation based on local weather data.





10,000+

The goal is to arrive at minimum 10,000 new hybrids a year in 2024/25.

Did you know that:

KMC conducts its own tests in several locations in Jutland each year? The tests include testing of new varieties, optimal control of diseases, testing of new techniques and technology etc. In 2020, we have tested more than 400 different new hybrids and varieties.

Effort 2: New varieties

We can also reduce the need for spraying by developing new varieties that are more resistant to diseases. It is a method that has existed for as long as we have grown potatoes. The challenge is that it takes up to 12 years to achieve the goal – without any guarantee that the more fungal-resistant potato variety also delivers on other necessary parameters such as starch content. KMC is working determinedly to get a new resistant potato variety available. The time frame is 5–7 years.

| Financial year | Number of hybrids |
|----------------|-------------------|
| 2018/19 | 2,450 |
| 2019/20 | 3,220 |
| 2020/21 | approx. 3,500 |
| Goal 2024/25 | 10,000 |

New possibilities with CRISPR technology

One way of preserving the positive qualities of a specific variety – and merely add resistance – is to use the CRISPR technology. Here, for example, a bacterium can be used to create mutations in the DNA of the plant that are more disease resistant. Just like a vaccine that improves our immune system.

This way, only the specific property is added to the known variety. If the manoeuvre is successful, it can cut the consumption of plant protection products by up to 50% – and reduce the time needed to develop a new variety by 3–6 years.

Today, the technology can only be used in European laboratories – and not in fields – because of the EU's GMO regulation. CRISPR is, however, in full operation in, for example, the United States and Canada. At KMC, we work together with Aalborg University and the University of Copenhagen. This will enable us to start immediately when the EU hopefully approves the technology.


Effort 1: Mould warning

During the growing season 1 June to 15 September, KMC Agro advises potato growers twice a week based on local weather information. That way, the growers constantly have updated knowledge about the exact amount to spray to avoid mould. The website has 20,000 visits during the season.

In the hot, dry summer of 2018, KMC Agro recommended reducing the consumption of plant protection products by just under a third, while, in more normal, humid summers, the recommendations can reduce consumption by 10–15%.

Reduction of plant protection products based on recommendations from KMC Agro.


| | |
|------|-------|
| 2020 | 15.3% |
| 2019 | 10.3% |
| 2018 | 32.6% |



KMC is a good place to be. It is the heart of our business. Thriving employees are a prerequisite for us. This way, our employees have the energy and commitment needed to conduct business and constantly innovate.

Sustainability is part of our DNA. We were born that way, and we will forever strive to become more circular, more resource efficient, more climate-friendly.

But we also know that we cannot manage this task on our own. We will therefore continue to seek new opportunities, greater collaborations and innovative employees.



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