



# Sustainable potato production *in Belgium and the Netherlands*



## Food and environmental safety

Implementation of good agricultural practices in growing potatoes to meet even stricter environmental regulations

## Marketability

Meeting a growing global demand for potatoes by optimizing efficiency from field to storage

## Sustainability

Ensuring compliance with crop protection product stewardship measures and risk reduction of soil erosion and run-off

food chain partnership



## What was *the market situation?*

In the past 20 years the global demand for potatoes has increased massively, above all through much higher consumption in China, India, the Middle East and Russia. Key potato-growing countries such as Belgium and the Netherlands are thus playing an even greater role in meeting this demand. Potatoes are a key crop in both countries. Potatoes are grown on almost 100,000ha in Belgium and around 160,000ha in the Netherlands.

However, in both countries the shortage of suitable farmland and the need for crop rotation mean there is little room for increasing the potato-growing acreage. So gains in potato production are only possible through even greater efficiency and precision technology. However, efficiency gains will not come easily since potato production in both countries is already highly developed.





### Challenges:

- Growing global demand for potatoes puts pressure on soil health
- Growing potatoes is becoming even more challenging now due to the changing climate and stricter environmental regulations
- Decreasing societal acceptance and reduced availability of crop protection products in the EU



### Solutions:

- New potato varieties and combination of chemical and biological crop protection products
- Technical solutions to reduce run-off and soil erosion
- Precision agriculture to adapt the input to the needs of the plant while maximizing the output
- Sharing best practices and showing the general public what potato farmers are doing to grow sustainable food



### Benefits:

- Higher-quality produce
- Increased yields of marketable potatoes
- Enhanced sustainability levels on potato farms involved in the project
- Long-term vision for sustainable potato production in both countries
- Fulfilling customer demands for sustainably produced food and restoring trust in modern farming

*“If I try to get as much profit as possible out of my land and in 20–30 years the soil is terrible, it’d be worth nothing.”*

**Jan-Cees van de Maas**, farmer from Numansdorp, the Netherlands



## What were the challenges?

Founded in 1971, Farm Frites is a family business, processing more than 1.5 million mt of potatoes a year from five factories in Belgium, the Netherlands, Poland and Egypt. Now one of the world's largest potato-processing companies, Farm Frites sells its products to professional food service companies, retailers and

fast food chains worldwide. Launched in 2005, Bayer's Food Chain Partnership enables the entire value chain to work together in implementing sustainable agricultural principles to meet customer requirements regarding food quality, safety, and traceability.

## What is our approach?

Since joining forces in 2015, Farm Frites and Bayer have paved the way for sustainable innovations, e.g. research in new potato varieties, integrated pest management solutions, experiments with biodiversity enhancement measures, newly developed technical tools, and biological crop protection products. But all these innovations would be worth very little without testing them on potato farms and engaging with farmers in dialogue. That is why Farm Frites and Bayer have established 12 pilot projects on ambassador farms in Belgium and the Netherlands since 2015.

This Food Chain Partnership has three major goals: first, to further promote good agricultural practices among potato farmers focusing on operator safety and protection of the environment; secondly, to exchange knowledge of innovative solutions that contribute to sustainable potato growing; thirdly, to get stakeholders along the value chain involved in a constructive, sustainability-oriented dialogue. Farm Frites' excellent connections with potato farmers in the two countries have proved a great advantage in reaching out to them. This has also enabled Bayer to step in and engage with these farmers on tailored solutions involving, among other things, fewer chemical-based active ingredients and the latest stewardship measures.



*"I'm a hands-on farmer and very interested in technical innovations like micro-dams to increase the sustainability level on my farm."*

**Willy Ronsmans**, farmer from Bertem, Belgium





## What did *we achieve?*

The Food Chain Partnership initiative has focused on three main activities:

1. Tour de Farm
2. Stakeholder engagement
3. Ambassador farms

The first **Tour de Farm** events took place in Belgium and the Netherlands in 2015 with the aim of establishing a forum for exchanging ideas about sustainable farming and relevant innovations. Since then, each Tour de Farm has attracted numerous potato growers and covered topics such as stewardship in applying crop protection products, challenges in crop protection and knowledge exchange on new crop protection solutions, precision farming, biodiversity through flowering strips, and micro-dam technology to prevent soil erosion and run-off. There were practical demonstrations of innovative developments such as easyFlow, the first closed, contamination-avoiding and self-cleaning transfer system for liquid crop protection products, and Phytobac™, a system developed by Bayer to ensure contaminants cannot get into sewage systems or nearby surface water when spraying equipment is filled or cleaned on a farm. The farmers attending found out more about new potato varieties that cope with today's challenges and are suitable for certain products, e.g. long fries. Farm Frites experts also informed the attendees about topics such as handling seed potatoes, food safety, and potato quality vs. fries quality. The Tour de Farm concept has proved its worth, added value to all partners, and was also extended to Poland in 2017.

**Stakeholder engagement** was addressed in different forms: 1) Farm Frites employee day to explain to internal colleagues what the partnership with Bayer is about and to have an open dialogue on different aspects of modern agriculture, 2) Bayer training sessions on tailored solutions for sustainable potato production for the Farm Frites agricultural team. Over the past four years, the sustainability levels on the participating farms have increased and the farmers have benefited from higher-quality produce and possibilities to increase yields.

The initiatives on **ambassador farms** have demonstrated how sustainable solutions can be implemented through farmers integrating them into their day-to-day business. Two issues of particular concern to potato farmers in Belgium and the Netherlands are the prevention of soil erosion and run-off through micro-dam technology. Besides using easyFlow to reduce point source pollution, the Belgian potato farmer Willy Ronsmans applies micro-dam technology and low till methods to stop soil erosion and help keep surface water cleaner. By keeping the soil on the field, Willy has also increased his yields. Another measure to counter erosion has been the planting of grass buffers and flower strips on the edges of his fields, which has also had the positive side-effect of enhancing biodiversity. Tests conducted on a Bayer ForwardFarm revealed run-off and erosion had been reduced by more than 90% through micro-dam technology. In addition and thanks to Tour de Farm, several farmers have taken proactive action to install a Phytobac™, making a significant investment in a measure to protect surface water as well as the environment and all biological life in it.

A Dutch farmer, Jan-Cees van der Maas, is determined to pass his family farm on to one of his three sons. That is what motivates him to constantly improve sustainability levels on his farm. To avoid surface water contamination Jan does not spray in windy conditions, uses special low-drift nozzles, and takes particular care when cleaning his machines. He is also using biological products from Bayer (e.g. Serenade®) to reduce the chemical load on his fields. Results of the application with Serenade® are that yield and quality levels have increased. In summary, like the other ambassador farmers, Jan is demonstrating that sustainable potato production is both practical and profitable.

# About Food Chain Partnership

Consumers are becoming increasingly conscious of the need for healthy nutrition. Food Chain Partnerships help to supply consumers with high-quality fresh produce, which forms the basis of a healthy diet. But such partnerships can only succeed if they involve every player in the food chain – from the farmer and processor to the exporter or importer and retailer. The Crop Science Division of Bayer has the global experience and cutting-edge expertise to create a successful partnership at every level.



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