

## CASE STUDY 4

# Tackling food loss and waste

Supporting plant-based foods by extending the shelf life of yogurts by ten days

One-third of food produced is never consumed: this represents 8% of global greenhouse gas emissions (GHG) and a quarter of the water used in agriculture, as well as crop-land the size of China. Strong business, social and environmental drivers to tackle post-harvest loss and food waste include reducing nutritional loss across the key value chain stages from production to consumption, financial savings, resource use

### The context

DuPont is a global innovation business. Its large teams of scientists and engineers are on a mission to make the world safer, healthier and a better place to live – from delivering clean water to enabling smarter, faster electronics.

The company's Nutrition & Biosciences Division is focused on producing food ingredients, including cultures to fermented foods, probiotics, food protection ingredients, plant proteins, emulsifiers and enzymes for a wide range of both food and non-food applications. Many of DuPont's innovations help food manufacturing customers reduce their environmental footprint.

In the early 2000s, well before the appetite for alternative diets began to grow exponentially, the business started investing in solutions for the plant-based foods and animal protein segment of the market.

In Europe, the plant-based yogurt, has grown up to 4% market share versus the dairy yogurt in value in countries such as the France, Germany and UK.<sup>1</sup>

efficiency, higher performance and contribution to climate targets, food availability and better returns on investments for actors involved.

WBCSD is collating this series of case studies to scale private-sector action that tackles post-harvest loss and food waste through fostering more knowledge-sharing and peer-learning.

### Big carbon savings

The company's Danisco® VEGE starter cultures allow manufacturers to develop plant-based yogurt and fresh fermented products with a much lower environmental impact than regular dairy alternatives.

Soy-based drinks have been shown to produce just 0.3 kilograms (kg) of CO<sub>2</sub> equivalents (CO<sub>2</sub>e) per kilogram, compared to 1kg CO<sub>2</sub>e for milk and about 1.3kg CO<sub>2</sub>e for milk-based yogurt.<sup>2</sup>

If just 5% of the total global market of yogurt and fresh fermented dairy products switched to plant-based alternatives, around 1.26 million tonnes of CO<sub>2</sub>e would be saved per year.

Case studies will be made available at [www.wbcscd.org](http://www.wbcscd.org)



### Boosting shelf life

DuPont's latest product, HOLDBAC® YM VEGE, is a formulation of bacteria specifically designed to extend the shelf-life of plant-based fermented food and reduce yeast and mould contamination. In fact, it can extend shelf-life by up to 10 days.

According to the UK's Waste and Resources Action Programme (WRAP), up to 17% of all yogurt goes to waste in the EU. And the majority of this waste (80%) is a result of the use-by date expiring somewhere in the supply chain.

Based on a model developed by WRAP, it can be estimated that extending shelf-life by one week can reduce yogurt waste by up to 30% in Europe.



<sup>1</sup> Source: DuPont / Europanel

<sup>2</sup> Ref. Smedman et al. 2010; Flysjö 2012

## Sustaining a new market

HOLDBAC® YM VEGE, which has been in development for the last 18 months, has the potential to help both the established food manufacturers that are increasingly adding plant-based food products to their offering, as well as the start-up businesses that, while passionate about their mission for plant-based foods, have less knowledge about food processes and efficiency.

There is also a real need to ensure consumers, which have made an environmentally-conscious decision, experience the same quality and taste profile when it comes to plant-based foods. Ensuring a great sensory experience by keeping yeast and mould under control, using natural bacteria rather than chemicals, is of paramount importance in helping to sustain the relatively new market.

## Remaining challenges

For DuPont, creating products to support efficiency and food waste for manufacturers of plant-based foods offers large growth potential, with more dairy customers switching to alternative processes and products.

The challenge for the scientists and engineers is to continue to develop ingredients and formulations that create the right sensory profile for food products. If consumers are to make the switch to plant-based diets – and keep going back – the quality has to be right.

The other potential barrier remains cost, with plant-based foods currently more expensive to produce than traditional ones. DuPont hopes its solutions can alleviate the problem by reducing food waste and creating efficiencies for customers along the supply chain.



**HOLDBAC® YM VEGE can extend the shelf life of plant-based yogurts by ten days, significantly contributing to solving Europe's huge waste problem.**

## ABOUT WBCSD

WBCSD is a global, CEO-led organization of over 200 leading businesses working together to accelerate the transition to a sustainable world.

We help make our member companies more successful and sustainable by focusing on the maximum positive impact for shareholders, the environment and societies. Our member companies come from all business sectors and all major economies, representing a combined revenue of more than USD \$8.5 trillion and with 19 million employees.

Our Global Network of almost 70 national business councils gives our members unparalleled reach across the globe. WBCSD is uniquely positioned to work with member companies along and across value chains to deliver high-impact business solutions to the most challenging sustainability issues.

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