

HOW ROYAL DSM IS USING SCIENCE TO FIGHT FOOD LOSS AND WASTE

“Bright Science. Brighter Living.” is the motto of Royal DSM. Since 2016, DSM’s CEO has been a member of the [Champions 12.3](#) coalition of executives committed to being vocal advocates within their own operations and on the global stage for addressing food loss and waste. The United Nations’ call to halve food loss and waste worldwide by 2030 (Sustainable Development Goal Target 12.3) is one of the key drivers of the company’s ‘Purpose-led, performance-driven’ strategy

TACKLING FOOD LOSS AND WASTE ACROSS THE VALUE CHAINS

With over €9 billion in annual sales and 23,000 employees around the globe, DSM is among the world’s leading life sciences companies. As food loss and waste has emerged as a global priority (Figure 1), DSM has been at the forefront of putting its resources and brightest minds to work innovating new solutions and technologies to ensure more good food makes it to people’s plates – not left rotting in fields or landfills.

ALONG THE VALUE CHAIN

DSM’s food loss and waste solutions work across the value chain (Figure 2), from improved animal feed and bio-preservatives to antioxidants and packaging.

PRODUCTION

Hy-D® is a vitamin D3 metabolite that provides animals with a fast track to a strong skeleton – a key component of longevity and production. By adding Hy-D to feed, chicken and egg farmers can ensure fewer eggs break thanks to stronger eggshells and healthier chickens. This helps reduce food loss by making production more efficient.

PROCESSING & MANUFACTURING

Rapidase® is a processing enzyme that enables higher fruit yields and better texture, firmness, and color. This helps farmers ensure more of their fruit is attractive to retailers and that less goes to waste.

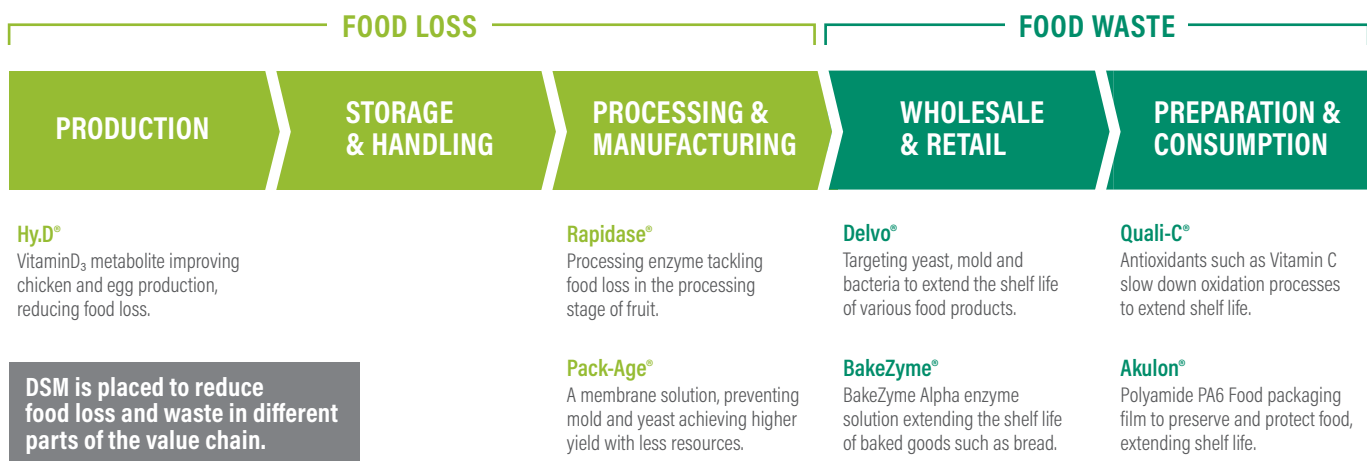
Pack-Age® is a moisture permeable, breathable membrane used in the natural ripening process of hard cheeses. It provides protection against mold growth – while at the same time reducing the formation of an inedible rind, meaning more of the cheese can be eaten, thus ensuring higher yields from the same amount of milk. If all the world’s Gouda and Parmesan cheese producers were to use Pack-Age® in the production process, around 200,000 tons of cheese that currently goes to waste could be prevented each year.

FIGURE 1 | FOOD LOSS AND WASTE: AN EMERGING TOPIC



- **One-third of food** (1.3 billion tons) intended for people is not ultimately consumed.
- Generates about **8 percent** of global greenhouse gas emissions.
- If it were a country, it would be the **third-largest GHG emitter** in the world.
- Organic waste decomposing in landfills, generates **12 percent of global methane emissions**.
- **Requires** land area the size of China to grow (**1.4 billion hectares** of land).
- Environmental impacts: ecosystem degradation and biodiversity loss.
- Globally costs up to **\$940 billion** per year.
- Accounts for **24 percent** of all water used in agriculture.
- The blue water footprint is about **250 km³**.

FIGURE 2 | DSM SUPPORTS FOOD LOSS AND WASTE REDUCTION ALONG THE VALUE CHAIN



WHOLESALE & RETAIL

Delvo® is a line of products that target yeast, mold, and bacteria in a variety of foods, including perishable foods like yogurt and dairy, to help them last longer. This ensures more of the food can be sold and consumed without being wasted due to spoilage.

BakeZyme® Alpha is an enzyme solution extending the shelf life of baked goods such as bread. In the United Kingdom alone, around 24 million slices (or 1 million loaves) of bread is wasted every day. Extending the shelf life of bread and other baked goods can cut down significantly on this waste.

PREPARATION & CONSUMPTION

Quali®-C is Vitamin C, produced in Europe, and used in foods, beverages or dietary supplements to help reduce the risk of diseases. It is also an important ‘anti-oxidant’ that enables extending shelf life and reducing food waste.

Akulon® is a polymer used in food packaging film to preserve and protect food, extending shelf life.

WALKING THE TALK

Sustainability of course starts at home. DSM’s efforts to enable and advocate for reduced food loss and waste mean nothing if the company does not ‘walk the talk’. DSM strives to reduce food waste at its sites, where its canteens feed about 23,000

employees. This involves understanding the existing level of food waste and their contractors’ strategies to address it. Many sites already have food waste reduction strategies in place – for instance, at sites in The Netherlands, DSM’s caterers make soups from vegetables that would otherwise be wasted. As a further step, they have started to measure and reduce plate waste. For example, in collaboration with caterer Sodexo, DSM has been able to reduce food waste at its China sites by 25% through an initiative to encourage clearing plates. Food loss and waste actions in the workplace make the topic ‘come alive’ as a source of inspiration: DSM’s researchers, marketeers and sustainability colleagues together work on topics such as: how can we as DSM apply our biotechnology, and human and animal nutrition science to identify losses and come up with new innovations for preventing losses or repurposing leftovers?

With its broad portfolio of solutions, DSM is showing how science can be used to reduce food loss and waste – ensuring more of the world’s food supply makes it to people’s plates. Innovation and technology are important tools and can give business leaders across the food system a leg up in their own efforts to achieve a 50% reduction in food loss and waste.

With just 10 years until 2030, the target date for achieving SDG Target 12.3, more leaders from across the food supply chain need to step up their action to ensure the world can meet this urgent and important target.

LEARN MORE

Learn more about DSM at www.DSM.com or on Twitter at @DSM.

For questions about DSM’s work to reduce food loss and waste, contact jacobine.dasgupta@dsm.com or Kimberley.chan@dsm.com