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Tetra Pak's whey filtration system turns waste into income

Swiss company Tetra Pak International Sa has launched a filtration system that helps small and medium-sized dairies extract value out of whey.

A common by-product of cheese production, whey is often dumped as waste, but using the Tetra Alcross RO Lite it can be now turned into profit, says the company.

Whey is only valuable when concentrated, but the filtration technology needed to do this has traditionally been highly customised and too expensive for most small and medium-sized dairies. Tetra Alcross RO Lite is a standardised filtration system that is available in five different sizes, is easy to install and costs about 30% less than the customised alternatives, claims the firm.

It uses a process of continuous reverse osmosis (RO) filtration to remove excess water from the whey – tripling its concentration while retaining all of the dissolved salts, lactose, acids, proteins, fats and bacteria. Concentrated whey can be then sold on to food processors as an ingredient in a growing variety of products, bringing a valuable income stream to the dairy, while also significantly reducing or eliminating unnecessary transportation and waste-handling costs.

'This cost-effective whey filtration system helps small and medium sized dairies compete on a more even footing with larger dairies while also improving their profitability and decreasing their environmental footprint,' said Jaco Baron, Director, Food Category Cheese, Tetra Pak.

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Dairy wastewater treatment plant is designed to protect the environment

In the UK, Severn Trent Costain – a joint venture that combines the experience of water company Severn Trent

Services with engineering and construction firm Costain – has signed a multi-million pound contract with First Milk dairy to design, build and operate a new wastewater treatment plant at the company's creamery based in Haverfordwest, Pembrokeshire, Wales.

The wastewater plant is the result of a close partnership with First Milk and Natural Resources Wales to deliver a system that helps to secure the future of the creamery, enables increased production and contributes to the preservation of some of the UK's most cherished and important countryside environments.

When built and fully operational in early 2014 the new plant will replace an old system that no longer meets the dairy cooperative's environmental or capacity requirements.

The system will operate within a new environmental permit which is accompanied by stricter discharge limits than those currently in operation.

The guidance and support of Natural Resources Wales (previously the Environment Agency and the Countryside Council for Wales), has been instrumental in helping First Milk to develop a way of offsetting the nutrient discharge of the new facility. Extensive feasibility studies explored all avenues to identify the best approach, which had to meet exceptionally stringent consent criteria set by the regulator.

The approach adopted comprises two parts: an advanced wastewater treatment plant, and an arrangement brokered by First Milk with its local dairy farm owners to reduce their nutrient run-off by adhering to best practices when using fertilisers and manures – effectively "offsetting" the environmental impact of the discharge from the new facility.

The treatment plant consists of a dissolved air flotation (DAF) system, which removes suspended solids such as fats or oils, and a membrane bioreactor that provides both physical and biological treatment to a high standard. The effluent produced is of such a high quality that it is suitable for discharge to coastal and surface waters, say the companies.

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