

A FRUITFUL PARTNERSHIP

BACKGROUND

Innovative recipes and high-quality products are essential in the food industry. SEEPEX's partnership with Natures Way Foods began back in 2014 as we supported the company on its journey to becoming one of the UK's leading manufacturers of fresh convenience food. The preparation of fresh convenience food – including ready-to-eat fruit and salad products for major supermarkets – generated waste that had to be removed from high-care production areas in an automated enclosed hygienic system.

Since initially supplying just a single progressive cavity (PC) pump, SEEPEX has gone on to provide the convenience food manufacturer with further customized pumping, macerating and chopping solutions.



Fresh convenience food gained popularity over the last years.

TASK AND TARGET

The convenience food manufacturer, Natures Way Foods, formerly used two methods for handling their waste, which turned out to be inefficient. The first was a combination of a progressive cavity pump with an open hopper and a lowspeed twin-shaft grinder to chop the waste. This caused process delays and downtimes. Production was irregularly interrupted since the waste could not be removed due to bridging above the grinder and backing up in the hopper.

The second method involved manual handling of waste , using containers, from a high-care production area to a low-risk area located outside. This is labour-intensive not only in terms of manual movement but also requires dedicated

APPLICATION DETAILS

- Handling fruit stones, e.g., mango stone (4-7 cm long)
- Variety of fruit and vegetable waste
- Pumping distance more than 100 m

KEY SPECIFICATIONS

- Chop and pump in a single unit
- Customized hopper, auger and maceration equipment

EFFICIENT WASTE HANDLING SOLUTION

cleaning of the containers prior to re-entering the high-care area to prevent potential cross-contamination. The waste conveyed included pineapple skins, melon, grape vines and mango stones, the latter being particularly challenging due to the size of the stones at 4-7 cm in length. In-house tests at SEEPEX verified the ability to handle the stones, using products supplied by the customer, to optimize the pump's design for the application.

SOLUTION

SEEPEX designed, installed and commissioned two customized integrated pumping and macerating systems to resolve their existing waste handling issues and to pump the waste over 100 m from a high-care production facility to a low-risk disposal area.

To address the bridging and backing-up problems, a new single multi-purpose system was supplied, which included two pumps with customized open hoppers and auger feed screws with integrated cutting blades to chop the waste prior to being pumped.

To overcome the challenge of conveying the mango stones, SEEPEX designed a small reception hopper with an auger feed screw to receive varied waste poured in by the containers. This is then conveyed into a macerating unit, which reduces the particle size, before being discharged into an open hopper pump, eliminating the need for manual handling between high-care and low-risk areas and avoiding cross-contamination and associated cleaning costs. The control system, linked to the reception hopper level, automates the pump operation. Additional safety features included protection against dry running and over-pressure to eliminate any chance of cavitation of the pump unit.



Customized BTM range with integrated hopper, auger and macerator unit.

COST SAVINGS INCREASED PRODUCTIVITY

REDUCED LABOR COSTS

REDUCED DISPOSAL COSTS

SEEPEX PRODUCTS Pump range BTM

LOWER WASTE VOLUME – LESS DISPOSE COSTS

RESULTS

The automated pump solutions from SEEPEX have enabled Natures Way Foods to hygienically, safely and cost-effectively dispose its waste at its vegetable and fruit factory and its coleslaw and potato salad processing factory.

The pump solutions streamlined waste handling at both sites, eliminating the discontinuous production process and manual handling, and reducing health and safety risks to operatives.

The product is now pumped through pipework enabling the hygienic transfer of waste, regardless of its particle size, from high-care to low-risk areas. This reduces the risk of cross-contamination and compliance failure caused by any new product becoming contaminated with residues.

The integrated maceration and pumping system also produces a lower volume of waste for disposal while preserving the highest residual value of by-products, e.g., for biogas production.

"When we began developing our new Drayton manufacturing unit, to handle the coleslaw and potato salad arm of our business, we needed a reliable partner to engineer a customized automated waste handling system, capable of processing both organic and non-organic waste streams. SEEPEX's solution has delivered on its promises to reduce costs, reduce labour, keep our manufacturing area clean, tidy and compliant, and keep our operatives safe", says Andy Mays, Engineering Manager, Natures Way Foods.

BENEFITS

- Improved Health and Safety
- Cross-contamination avoided
- Cleaner working environment
- Manual handling and cleaning costs reduced
- Increased production throughput as bottlenecks removed