

SOUS-VIDE MEALS - A TREND CREATES A FURORE

The new production site at SugarCreek in Cambridge City, Indiana, comprises almost 39,000 m². The heart of the giant complex is a completely automated sous-vide line, on which up to ten different meals can be produced at the same time. It is the only one of its type of this size in the country.





SugarCreek was founded in 1966 in Washington Court House, Ohio, by John S. Richardson. The business was initially based solely on manufacturing raw bacon, but John S. Richardson was a true entrepreneur. In the following years he transferred the business to his son, John G. Richardson, and the product range was expanded while the company grew organically. Today, SugarCreek is an innovative and very diverse food manufacturer with a highly sophisticated product range, which focuses systematically on the needs of the market. In the last ten years, the company has increasingly produced delicious ready-meals that can be served immediately. The company has also captured the spirit of the times with its sous-vide meals. One can only conjecture from the size of the new production site in Cambridge City what potential Sugar-Creek is expecting from its new line of business. Products for many of North America's largest and best known food brands are now also being manufactured there. The successful family business has a total of more than 2,000 employees in the six factories in Washington Court House, Cincinnati and Dayton in Ohio, as well as Frontenac in Kansas and now Cambridge City in Indiana.

SugarCreek produces for food retailers, but also uses other sales channels to get its products to both domestic and international markets. Some of the food products are raw, others ready cooked - but all are always securely packed. "Our success is based on progressive methods as well as stringent and highly efficient processes. And of course primarily on a high level of quality awareness, which focuses on every detail, however small. Thanks to state-of-the-art technology and techniques, we are able to react very quickly to the changing requirements of the market," explains Chuck James, Process Engineer at Sugar-Creek in Cambridge City.

State-of-the-art packaging machines

The packaging machines are also state-of-the-art. Several MULTIVAC

thermoforming packaging machines have been in operation since July 2015, and more are due to be installed in the course of the year. The packs have to underline the high quality claims of the American producer's sous-vide meals, as well as reaching the customer or consumer in faultless condition.

In reply to the question, why the company decided on MULTIVAC packaging machines, Chuck James points to the cooking method: "The translation of the French term "sous-vide" means "vacuum cooking". This involves proteins, which are vacuum packaged in film packs, being heated in a water bath to a very precise temperature. When one visualizes this fully, MULTIVAC is a completely logical and natural choice as the supplier of the packaging solution for these requirements"

Quick format change, high level of machine availability

An important factor in deciding on the MULTIVAC machines in particular was the fact that they are designed for producing very high batch numbers and offer a wide range of forming and sealing die options, so that SugarCreek can produce many different packs on one machine. Their weights range from packs with a few grams to over 5 pounds or more. The configurations vary significantly, depending on the format, volume, type of food, customer concept and consumer expectations. "In particular it was MULTIVAC's matching of the individual forming and sealing stations that was really helpful to us, since this enables us to always fit the right die to the machine quickly and reliably," explains Chuck James.

The machines are used to pack poultry with and without marinade as well as beef and much more. Each meal is prepared as required, vacuum packed on the particular machine and then heated slowly and very precisely in a water bath. As soon as the cooked food has reached its optimum cooking time and temperature, it is quickly cooled down and then blast frozen.

SOUS-VIDE – A permanent learning process

As Chuck James explains, the learning process with the sousvide processing of protein products can be felt very noticeably: “Each product and every customer presents us with new opportunities.

The range of possibilities includes injecting or tumbling, the spicy grilling of the product or the creation of grill strips for an appetizing and authentic appearance – all depending on what the customer or consumer wants.” This also means the parameters and recipes within the overall process must be constantly adjusted, as well as those for the packaging procedure.

The film material, which has to be suitable for this application, also plays a special role. This generally consists of a PA/PE composite film, designed for use under higher ambient temperatures.

“The benefit of the sous-vide process lies in the fact that the intense tastes and aromas are retained within the pack. Oxidation of the cooked food is also minimised by the removal of oxygen from the film pouch,” adds Chuck James.

Many factors have to be taken into account

The experts from MULTIVAC actively supported SugarCreek in the selection of suitable films for each of the particular packs. It was a long process from the first trials to the current sous-vide packs. It required a great deal of know-how as well as many tests and sample productions, since many factors had to be taken into account: film qualities and seal seam strength, format and size of the packs, determining suitable temperatures for the water bath and blast freezing, as well as clarification of the questions about how much the volume of the material alters with the temperature change, together with the impact of all this on the food in the pack. The specialist sous-vide producer is still delighted

with the constructive support from MULTIVAC: “Step by step we have learned and are still learning, thanks to MULTIVAC. Today we have unique packs for our high-quality and attractive sousvide products. The effort was all worth it.”

When putting every new system into service, SugarCreek relies on its partners, who support young companies with training and technical support for their new packaging lines. The MULTIVAC engineers, the film specialists and others involved in the project therefore sat down together each week to assess the results achieved and to define the next steps. All operating staff at the company were trained intensively on the installed machines, so they could become familiar with the thermoforming packaging machines, which were modified to meet the specific requirements of SugarCreek, and in order to ensure future operation, maintenance and servicing would be safeguarded. SugarCreek also received comprehensive documentation and instruction manuals, as well as detailed pneumatic and circuit diagrams, allowing all staff to have a better understanding of the machines.

Chuck James would also like to mention the commitment of Phil Cook, the Parts Specialist at MULTIVAC. “He helped us enormously to optimise the stock in our spare parts inventory, so that we continue to enjoy a very high level of machine availability. We are processing delicate food products in a highly challenging technical procedure, which means each process stage

must match the preceding one seamlessly.”

Market demands are constantly rising

The packs themselves are not only attractive but also secure. There are virtually no occurrences of leaking packs or other problems. However, “some end users are already beginning to ask for packs, which can be opened easily. If we want to achieve an acceptable, high-quality pack result and avoid leaks throughout the entire processing procedure, we have to concentrate our efforts on checking the integrity of the



packs.”

Everyone at SugarCreek is delighted however to have successfully mastered the enormous challenges, and to have made an important and very large step into the future. “This is ground-breaking in the food industry. We have created the largest sous-vide factory in the country – and it is also currently the only one, which allows us and other well-known food manufacturers for whom we work, to launch such innovative and high-demand meal products onto the market,

” explains Chuck James proudly.

Success motivates the company to further expansion

He draws the following conclusion: “New production halls, new staff, new machines, new technology and new products on a scale not previously seen – that has meant for us in the last 6 to 8 months a lot of effort, a lot of research and development, but also many very positive experiences.” Everyone at SugarCreek is therefore looking very

optimistically to the future, and the company intends to invest in a further four MULTIVAC machines in the coming 12 to 24 months. “The industrial sous-vide process is still in its infancy. Since MULTIVAC has always been able to develop suitable packaging solutions for us, we are confident that we will also be able to meet future challenges.” ♦

