
A really intelligent packaging concept for a quality product

by Christina Frohm Kramer, Marketing, Micvac, Flöjelbergsgatan 10, SE-431 37 Mölndal, Sweden.

Grön Ko (Green cow) is a Swedish family owned company. The family runs an ecological cattle farm as well as a shop and restaurant where they sell farm products and other local products. As they mostly sell pieces like fillet and other more expensive parts, they started to think about what could be done with the rest of the meat.

The solution was to develop their own recipes for meat dishes that required a lot of work and time to offer stressed families a good and healthy meal without them having to do it themselves. Very soon, they realised that the shelf-life they achieved was too short and it was difficult to get an efficient production. They investigated how they could achieve the same good quality together with a natural concept and a longer shelf-life. The solution was the Micvac method.

One continuous process

The Micvac method means in-pack cooking and pasteurisation. It includes the use of a microwave tunnel and packaging with a re-closable valve.

It is a smooth and modern production method in one continuous process. The ingredients are filled into a tray (or bag), sealed with a film containing a valve and then transported into a microwave tunnel. The microwave process allows fast cooking

The 18m microwave tunnel.



at a high temperature. The result is that more vitamins, texture and colour are preserved no matter the ingredient and all of the flavour stays in the tray.

During the pasteurisation process a natural vacuum is created leaving the tray airtight. This is due to the valve opening, releasing steam and air during cooking and then closing once the microwaves stop giving energy to the product. The vacuum will keep the meal fresh for weeks.

Most Micvac producers use a 42 day shelf-life. The vacuum also allows the product to be displayed upright on the store shelves hence giving it a better exposure. The fact of having a vacuum means that no oxygen remains in the pack and no oxidation and less deterioration of the food take place.

Grön Ko uses the Micvac method mostly for chilled ready meals such as Boeuf Bourguignon, Curry with rice, Swedish

meatballs with mashed potatoes and other traditional Swedish meals or more exotic ones all containing their ecological meat.

To be able to offer a more complete range, they also produce different types of soups, including Goulash and fish soups. The meals served in the restaurant are the same that you can buy in their shop.

Once Grön Ko had decided to go ahead with the investment in a Micvac line they started looking for the right production location.

They found a big dairy plant and transformed it into a local food centre with their own line as well as other smaller production units for other companies.

Knut Lillienau, owner and managing director at Grön Ko as well as Food Ambassador for the Swedish region Värmland, was really pleased with all the help he got from Micvac in planning and

setting up the plant. To be able to use all their knowledge regarding production flow, machinery, etc was very valuable for them.

Today they are not only selling their meals in their own shop; they sell to all major Swedish retail chains. It is a fantastic development to go from meat production to food production. Their focus stays the same; good and nutritious food with great taste!

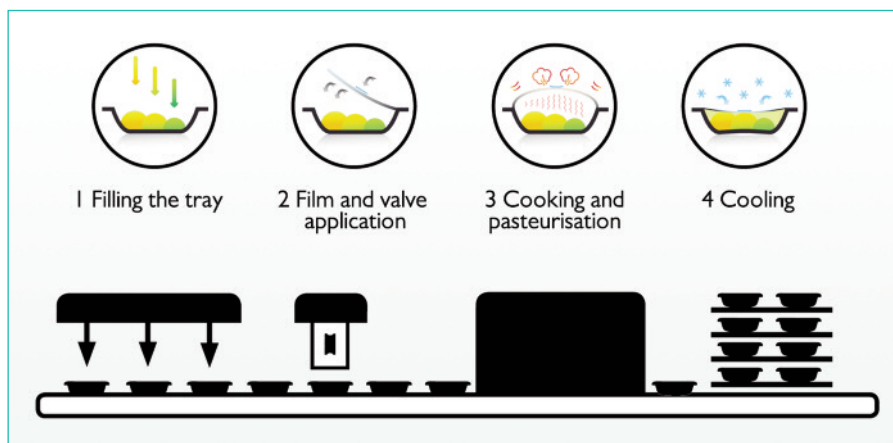
Practical and convenient

Chilled ready meals are all about convenience. The Micvac method offers new features making it even more practical for the consumer. The patented tray is designed to ensure even heating all the way through in production as well as at the consumer's.

The patented valve will open during heating in the microwave oven and will whistle once the meal has achieved the perfect eating temperature.

It takes around three minutes. Stirring and testing of the temperature is no longer needed. As it is a closed packaging (the valve will close again), you can heat several meals and serve them at the same time. If you do not take off the top film the meal stays warm for approximately 20 minutes.

Micvac wants to be an active partner to its customers. Therefore, Micvac has completed market research on consumer buying



The Micvac method of in-pack cooking and pasteurisation.

behaviour to facilitate a successful launch. According to studies made in Europe, 80% of the consumers would like to buy and recommend Micvac processed meals. The main reasons for this are that they taste very good and they are all natural.

The microwave tunnel used in the process is a specially designed tunnel for chilled ready meals. It is built in Sweden and used by all Micvac customers. The tunnel has been continuously updated and it has a new control system with remote access as standard, as well as a new buffer and flexible infeed system.

The heating is optimised to give maximum repartition of the energy to ensure an even and stable cooking and pasteurisation.

Module based system

It is module based to enable additional capacity if needed. It is energy efficient and comparable studies between microwave and retort production made by KIN Lebensmittelinstitut in Germany shows that there are major savings in cost and time to be made if using microwaves.

Other studies made by KIN show better performances for taste, texture and colours if using a short heat treatment as well.

The tray is designed and patented by Micvac and produced under licence. The special Flextray can control the deformation when vacuum and it is made of PP.

The film is a laminated peelable PA/PP film. The valve is made in-house at Micvac, Sweden, and it is the only valve on the market that can open and close several times.

Due to the valve, the production can be made without any counter pressure to balance the pressure created in the pack during cooking.

The packaging and process development go together. It is not only a method, a lot of knowledge is also necessary in the behaviour of different plastics.

All components in the packaging have to work together to assure the correct functioning of each one on its own as well as combined. They have to sustain the impact of the cooking procedure as the packaging expands due to the pressure created inside during cooking. Then it gets another shape once the vacuum is created, so it is really an active packaging.

Today, the latest development is a two compartment tray only using one valve. It was easy to have a solution with two valves, but that was a little too costly for customers, so the development has been to be able to work with only one.

Another development is to work with small and bigger bags for food service for example. There is a big demand for quality food. This intelligent packaging is now known worldwide. A whistle and your meal is ready; it can not be much easier! ■

