

# Major growth for environmentally-friendly flexible packaging for beverages



The 1-litre milk packaging from Osted Mejeri has been available on the Danish market since 2003, and negotiations are ongoing with several Danish dairies concerning the use of this environmentally-friendly flexible packaging.

- There is a strong interest in cost-effective packaging with low environmental impact worldwide, and Ecolean increased its sales by approximately 55 percent last year. It is our goal to maintain this growth over the next few years.

## Extremely competitive price range

Lars-Eric Andersson estimates the prices of the packaging to be about 20 percent cheaper than conventional milk cartons. And if you add the fact that it has no screw cap, the Ecolean packaging comes down to nearly half the price.

- Currently, we have a highly efficient production of food packaging at Ecolean. We have minimised our costs in order to offer our products at the lowest price possible. If we can produce truly large quantities using the same design for the same customer, we may be able to reduce the costs even further. But we still find that our prices remain attractive to our customers.

## Concept spreading in Denmark

When asked about other Danish customers, the Sales Manager told us that apart from the three best-known Osted Mejeri sites, there are also facilities at Thrane Mejeri in Ørbæk on Fyn, where, in addition to milk, they also produce an ice cream mixture for Parad-is. This company was experiencing major problems with packaging waste from previous suppliers, as Parad-is ice cream kiosks and other stalls are typically located in parks and pedestrian areas where there is limited room for waste.

- The Ecolean packaging was of great benefit, partly because it is easy to empty all contents, even if the ice cream mixture is viscous, and partly because the packaging takes up no more room in the rubbish than an envelope, emphasises Lars-Eric Andersson, mentioning too that they are in project discussions with other Danish dairies.

## Easy handling

The packaging is opened by tearing a corner along the perforated line, and you pour by holding the inflated handle. When some of the milk has been poured out, the opening will then close itself as the sides contract. The density is strong enough to maintain good hygiene.

Thanks to the packaging's geometry and stable inflated handle, it can stand upright even when nearly empty.



The EL3 is one of Ecolean's aseptic filling machines

Pre-sterilised rolls of polyethylene and polypropylene packaging is in many respects an interesting alternative to drinking cartons and HDPE bottles.

Even though Ecolean's modern flexible packaging for liquids and edible products are not brand new, they are still deserving of a mention in In-Pak. It is in the process of entering the Danish market. Osted Mejeri has seen the benefits of this award-winning, environmentally-friendly packaging and uses it for milk in particular, as the milk flavour remains intact. It is suitable for fresh, pasteurised and aseptic products with low acidity and low to medium viscosity – such as milk, yoghurt, non-carbonated drinks and wine. The volumes range from 0.2 to 1.0 litres divided into four main types of filling machines, each with one to four versions of different packaging sizes. The small portion packages of 0.2 to 0.25 litres are also available with straws. With regard to production, the machine can fill 6,000 1 litre pieces of packaging per hour.

## Keen interest worldwide

Sales Director Lars-Eric Andersson is happy to answer any of the questions which can be expected with this relatively new type of packaging. With regard to predicted use and production of the packaging, he recounts: - Ecolean began the launch of the new non-refrigerated aseptic packaging for milk in 2010. We have much faith in this packaging for both dairy and fruit juice applications.



Sales Director Lars-Eric Andersson

## Major environmental benefits

Ecolean AB, with headquarters in Helsingborg, Sweden, has allowed Franklin Associates, USA, to undertake an assessment of the environmental impact of the 1-litre Ecolean Air Aseptic packaging. The assessment was based on a production of 100,000 units and included the production of raw materials.

It shows that the energy consumption to produce a 1-litre packaging is less than a third of that for a carton or an HDPE bottle.

If you view the production output in kilograms, the flexible packaging represents half the weight of the cardboard packaging and a quarter compared to the HDPE bottle.

Waste water consumption during the production of the packaging is almost zero compared to the production of beverage cartons and more than 10 times lower than during HDPE bottle production.

And finally, emission of greenhouse gases is about 60 percent of the volume during production of beverage cartons and approximately 25 percent of emissions during production of HDPE bottles. It also helps that the packaging



*The 1-litre Ecolean Air Aseptic packaging  
The packaging is also produced in 500 and 750 ml sizes*

protects against light, and polyethylene as a sealant and contact layer.

In addition to the stiffening properties, the addition of the 40 percent by weight of chalk reduces the raw material use in the final packaging. Low wastage rates also save considerable resources. The packaging's weight of approximately 14 g per 1-litre packaging constitutes about 40–50 percent of the weight of typical drink cartons and bottles. The PP surface quality is suitable for printing.



*Empty Ecolean packaging takes up very little space*

weighs less during transport when full, empty or discarded. In the latter two situations, it barely weighs anything and does not take up much space.

## Multi-component plastic material

Seen from the outside, Ecolean's aseptic "Calymer" plastic film consists of polypropylene (PP), chalk-filled PP used for stiffening the packaging, ethylene vinyl alcohol (EVOH), which creates an oxygen barrier, a carbon black layer which

Pre-sterilised rolls of flexible packaging are delivered by Ecolean in hermetically sealed packaging. The packaging is constructed for a maximum filling and storage temperature of 30 and 45°C respectively. The sterilisation method is, as in the medical industry, based on radiation. The food-approved Calymer is certified in accordance with BRC/IOP, ISO 22000 and ISO 14001.

## Fully automatic filling

The EL3 is one of Ecolean's aseptic filling machines, in which processing connections are isolated using damp barriers. It has automatic roll switching and material cutting as well as fully automatic Cleaning In Place (CIP). The sterilisation of the equipment takes approximately one hour.

## Several awards

The Beverage Innovation Awards 2009 is just one of the awards ceremonies at which the Ecolean Air Aseptic packaging has been recognised. This was in the category of "Best carton or pouch" in Foodbev, which took place at Drink-Tec in Munich. During 2009, Ecolean also won the DuPont Awards for Packaging Innovation, a Scanstar prize and a Worldstar – presented in Beijing in June 2010.

Part of the reasoning is that the new aseptic technology simplifies the filling process, as it does not involve any chemicals, and because the sterilisation takes place separately from the filling. Moreover, the inflated handle works very well.

## Taste test

A Danish taste test performed by TV2 and Politiken in January ranked the milk (from Osted) packaged in the Ecolean Air flexible packaging first and second out of a total of six products. The Danish Rema 1000 supermarkets are an example of a distributor of packaged milk from Osted, sold as their own brand Gram Slot. This is the milk that came second in the test. - What was evident was that the milk in the Ecolean flexible packaging retained its fine taste the entire time, whilst the milk in cartons picked up more and more of the carton taste the longer it was stored, explains Lars-Eric Andersson, pointing out that the shelf life for milk in Ecolean flexible packaging is about the same as for milk cartons.

## Collaboration

Ecolean and Osted Mejeri have collaborated ever since owner Karl Simonsen founded the dairy in 2003 with an initial milk production of 200,000 litres per year. This has since grown to be in excess of five million litres. The Ecolean packaging in its current form with the inflated handle was first introduced commercially in 2001 and arrived in Denmark in 2003 with Osted Mejeri.

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