



Fresh milk out of the jug...well, sort of!

Something is stirring in the valleys and hills of North Wales in the UK, but it isn't the mythical red dragon, nor is it the timeless poetic musings of William Wordsworth; it is the phoenix rising from the ashes of a dying breed: the milkman.

But what is tempting the consumer back to a service, which once accounted for most milk sales but by 2001 represented a paltry 0.4 per cent? It could be a combination of nostalgia, convenience and taste...or the launch of degradable milk pouches by two north Wales dairies.

Last July, South Caernarfon Creameries (SCC) in Pwllheli stopped using glass bottles and moved all milk production over to plastics cartons. However, in February, it launched degradable milk pouches and is now targeting the home delivery market and schools before going into retail stores.

"Milkman sales had been declining in the last 10 years," says Alwen Eidda, milk bag project manager for SCC. "So by only introducing the bags to door step deliveries, it should improve those sales."

The milk bags take much less space than other types of milk packaging, and this reduces the volume of waste in the bin; a real plus according to Eidda because the Gwynedd Council will not take the bin if the lid isn't closed. The new pouches also bring another environmental advantage — they are degradable so occupy much less space in local landfills when they are discarded. But what these regional dairies might do is start a wave of interest in these bags across the European dairy industry, especially if they are embraced

Deliver the goods

The launch of degradable pouches by two Welsh dairies could be the start of a recovery for Britain's ailing doorstep milk delivery industry. Steven Pacitti investigates

by local consumers in Wales.

The other dairy involved, Tomlinson's Dairies in Wrexham, for example, has introduced pouches as an alternative to plastics cartons and glass bottles and plans to sell large 1-litre 'eco-pouches' through shops and may then extend the bagged milk to its doorstep delivery service. Tomlinson's says that the new packaging has resulted in a 90 per cent reduction in landfill.

The pouches are made by Canadian company Glopak, with Totally Degraded Plastic Additives (TDPA), which make them degrade when discarded, supplied by EPI Environmental Products in Canada. SCC receives the pouches pre-printed and ready to fill. The additives make them degradable in approximately twelve to eighteen months when discarded in a landfill.

"The roll stock used to make the pouches is pre-printed (four across) on a flexographic press and then slit into 324mm finished rolls," explains a spokesman for Glopak, which is a major supplier of pouches in North American and Mexican markets. "Roll sizes are typical of those used on all our form, fill and seal machines. The

rolls are generally 324mm wide and have an outer diameter of 450mm. The most cost-effective method to package milk into pouches is with vertical form, fill and seal equipment, which is a relatively new product, and not just for milk."

But with Canada already packing 65 per cent of all fresh milk in pouches, what's the significance of this launch in Europe? It's not just about flagging doorstep sales, but also about issues of environmentally responsible disposal of used packaging.

Joseph Gho, chief executive of EPI, the supplier of the degradable additive, explains: "Our product is 100 per cent recyclable, before it degrades. However, the reality is that very few milk pouches are ever recycled. Most of them are placed in the trash and end up in landfills where, if they are made from conventional plastics, they will remain unchanged for untold years. On the other hands, pouches made using EPI's TDPA technology degrade and disintegrate within 12-18 months and ultimately biodegrade."

In a new environmentally conscious age, biodegradability, degradability and oxo-biodegradability are big

news. Competing hydro-biodegradable technologies like PLA may use bio-based inputs such as corn but many of them also use petroleum-based resins in their formulations. The EPI technology is applied to conventional resins such as polyethylene.

"There are not many pure bio-based products, and the 'naturalness' claimed by them may not be all it is claimed to be," says Gho, who explains that even these require large amounts of petroleum-based energy to grow and harvest the crops and to convert them into polymers.

The advantages of products using EPI technology are that they cost little more than the same non-degradable products made from conventional resins and they retain the same properties and processability as their unmodified counterparts.

The TDKA modified products are not designed to be placed in composts and do not meet the requirements for very rapid biodegradation in a managed compost facility as is mandated by international standards in order to be called compostable.

Gho says: "Fortunately, this high rate is not required for our bags which primarily end up in landfills. Indeed, managed composting facilities don't even exist in most areas of the country."

"Our additive is blended with conventional polymer during extrusion at the same time as other additives like colour masterbatch. It results in about a 5-10 per cent price premium over standard polyethylene bags or pouches," he says, a premium that is borne by the dairy.

However, the pouches are still cheaper than glass bottles, as SCC's Eidda explains that glass bottles have to be washed, which costs in terms of chemicals, time and machines.

A Glopak spokesman says: "We know that pouch packaging is a cost-effective alternative to jugs and cartons. Pouches consume less material and energy during manufacture and are recyclable. The milk pouch is a huge opportunity driven by environmental awareness."

Part of the sales pitch from SCC involves customers being given a doorstep storage tray and polypropylene milk jug to hold the three-layer co-extruded polyethylene pouches if they opt for the new packaging. The empty bag can be thrown away with the normal waste but degrades within 18 months.

Gho comments on the useful life of these new degradable pouches: "One of the real benefits of our technology is that it can be designed for different applications. For example, you might keep a supermarket carrier bag for three months before



*The return of the doorstep milk delivery
Inset: A degradable pouch by Glopak*

take off. This could be especially true if a dairy such as Dairy Crest, now the UK's largest doorstep delivery business since it bought Arla Foods UK's doorstep milk business in 2006, adopts similar degradable pouches.

The distant clink of milk bottles (or should that be the rustle of pouches?) at 5am might be returning to the streets of Britain sooner than you think, and it's nothing to do with old rumours about milkmen and bored housewives. And they could help you do your bit for the environment too. ●

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discarding it, or you might take it on a picnic and dispose of it that day. Because these bags are normally reused they are designed to have a relatively long shelf and service life prior to the onset of degradation. The cycle for a milk pouch is short because you buy the pouch, consume the milk and throw the package into the garbage, which ends up in landfill."

And far from having a shorter shelf and service life than non-degradable packaging options, SCC's Eidda explains that the milk in a pouch actually has a longer shelf life than milk in plastics cartons, with 15 days instead of 10. The Glopak pouches are designed with those factors in mind.

In addition, SCC has started with two-pint pouches although the company has not ruled out making one-pint pouches in the future if demand is high enough. Being the lowest weight packaging available, the film technology for the pouch can be tailored easily for different formats and markets.

According to the spokesman for Glopak, there has been tremendous interest in the pouch during the last few years from dairies of all sizes, largely due to the pouch's economics and the package weight reduction. For Glopak, the project was relatively uncomplicated, with the main challenges being the development of an appropriate dispensing unit with lid as well as an on-shelf display kit, which would also complement the distribution network.

This is the first application of EPI additives in the dairy business and EPI's Gho expects it to be the first of many. "People in Europe are generally ahead of us in North America in terms of their environmental awareness but it's changing in North America and we're catching up. The pouches with our additives give SCC exactly what it wants: excellent package performance, product safety, cost effectiveness and environmental responsible packaging."

The British milkman, an endangered species in recent years, overtaken by cheaper plastics cartons now widely available in supermarkets, might just be on the cusp of a renaissance if these cheaper pouches