



Eric Kjestrup (left) and Chris Redfern (right) show off the new Anchor bottle in the Impact Innovation Centre.

## Team effort makes light work of milk project

New Zealand's Fonterra Brands recently broke new ground in the dairy market with the introduction of a new milk bottle it says shields milk from damage caused by light exposure. Roland Tellzen investigates the background work that went into bringing the bottles to market.

**FOR FONTERRA BRANDS** in New Zealand, Anchor milk has long been one of the company's, and the country's, most iconic brands.

Like many dairy businesses, however, in recent years it faced a challenge of how to hold onto this market position, and even increase sales, in view of increasing competition in the sector.

It realised that the key drivers in the dairy segment were taste, protecting nutrients and ensuring, or even extending, shelf life. And it realised one way to achieve these was to enhance the packaging.

To this end, it approached its long term packaging suppliers – and next-door neighbour to its plant in Takanini, Auckland, Alto Packaging – which is the New Zealand subsidiary of Australian rigid plastics and metal packaging specialist Pact Group.

The general manager of Alto, Eric Kjestrup, says this sparked off a two year journey that ended in Fonterra recently launching onto the NZ market its Anchor milk in a new, triple-layer, light blocking, high density polyethylene (HDPE) bottle.

The bottle, which blocks UV light from the contents during transport, is now being marketed as an innovation that keeps the milk fresher

for longer, and better tasting, than milk packaged in conventional single-layer bottles.

### TAKING A FRESH APPROACH

Kjestrup says the project was a particularly challenging one, involving a total re-organisation and re-tooling of Alto's and Fonterra's production and filling lines while also, in the interim, keeping its existing bottling lines operating as normal.

He says the inspiration for the bottles came through a global search for new milk packaging innovations.

"We looked at what was being done around the world and saw a product that was being manufactured overseas which was a multi-layer milk bottle," he says. "It was only used for UHT milk, though – no one had thought to use it for fresh milk. It sparked the idea for us, though, to see if we could take the concept further."

While the idea was certainly appealing, Kjestrup says, Alto realised that taking it to the commercial stage would require overcoming many challenges.

"We were already producing a mono-layer bottle for Fonterra, so we knew the type of systems they had in place. To go to a multi-layer bottle, we knew things would have to change," he says.

"We also had to keep our old operations going. Our plant is adjacent to Fonterra's, we blow the bottles, we put them on the conveyor, and it all goes through the hole in the wall and they fill the bottles. And we couldn't just stop doing that – cows were still giving milk, and Fonterra was still selling it and needed to bottle it."

To assist in the project, Alto also called on help from Pact Group's Australian Impact Innovation Centre, the company's creative and prototyping arm for new packaging concepts.

Pact Group's group technology manager, Chris Redfern, says that after the initial investigations of the triple-layer concept were carried out, the team had to move into the implementation phase.

"We had to set up a whole set of new lines, using custom Anchor-shaped tools – the bottle shape is iconic for Fonterra and it was important for them to maintain that over the transition – but also involving a cross-platform change from one type of extrusion blow moulding machine to another," Redfern says.

"We went from a reciprocating to a shuttle process. We then set about the equipment purchasing, which was all sourced from Europe and put on ships to go to NZ. We ended up with the same number of machines, but kept and even increased the previous production capacity."

### CRACKING THE COLOUR CODES

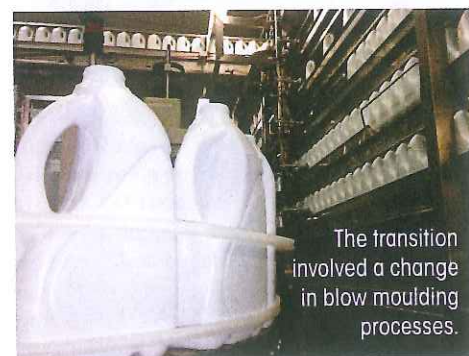
Redfern says one of the toughest tasks to solve was to get the right pigments to colour the different layers.

"To create the light-blocking structure, we found a black colourant was the most effective way to achieve that, and we found one that met the world standards for packaging," he says.

"But, still, we had to make the overall bottle white, which is necessary in the dairy sector. And that is not so easy with a light material covering the black layer – it needed sufficient opacity to look white over the black layer when sitting in the supermarket."

The bottle finally went on sale in NZ early in April, with Fonterra basing its marketing efforts around its extended shelf life and fresher taste.

While the bottle is exclusive to Fonterra for the NZ market, Redfern says Pact Group is expecting strong interest in using the concept here by Australian dairy producers.



The transition involved a change in blow moulding processes.