



In a market with fierce competition, it is sometimes necessary to be a forerunner and take a calculated risk with new technologies to obtain a competitive advantage.

# CHANGING THE GAME

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Photo: Sadafco, Istock

**S**AFETY AND QUALITY combined with the highest efficiency are of the utmost importance when producing a staple product such as plain UHT (long life) milk. That is why Saudia Dairy & Foodstuff Company (Sadafco) is always on the lookout for new and innovative solutions. The company is the leading player in the UHT milk market in Saudi Arabia, with the Saudia brand capturing 55 per cent of the domestic market. “We are efficiency-driven,” says Raffael Reinders, director manufacturing at Sadafco. “We are always using the latest technology and that gives us a competitive advantage,” he says.

Dairy farms are rare in Saudi Arabia, so Sadafco is producing recombined UHT milk. The imported milk powder is a large cost for the producer, which puts a constant focus on keeping all other costs down. In the traditional batch production process, skim milk powder is mixed with water at a mixing station and sent to a tank, and then pasteurized and standardized. Milk with a different fat content is stored in intermediate tanks before it is UHT treated. The process demands heavy investment in equipment, is time-consuming and significant

product losses are difficult to avoid. But what if the process could be simplified? “We wanted to eliminate the pasteurization step and also take the human factor out of the process,” explains Reinders.

As the saying goes, “if you keep on doing what you’ve always done, you’ll keep on getting what you’ve always got.” In 2011, Sadafco’s team of engineers started to discuss new solutions with different suppliers. Sadafco’s strong, open and long-term relationship with Tetra Pak led the two companies to start a joint development project. It took 12 months of intensive development and trials to create a process where several processing steps were removed. In one continuous step, skim milk powder is mixed under vacuum to a concentrate, and then preheated and mixed with the right volume of water and fat before undergoing UHT treatment and regenerative cooling. This eliminates the need for pasteurization pre-treatment and intermediate storage of pasteurized milk. The patented single-step approach significantly simplifies and accelerates the production process.





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RAFFAEL REINDERS

“My boss asked me if I was sure this would work,” says Reinders. “No one had done it before, but I was 100 per cent convinced that it would work. And it did. We took a calculated risk; you have to take new routes to win,” he says.

In addition to shortening the process time this enables completely automated and continuous UHT operations, with fewer process steps and smaller hold-up volumes in the line. Another advantage is the high accuracy of powder and water volumes. In turn, this results in reduced product losses and energy savings.

“The whole process is far more efficient than conventional solutions, delivering significant operating cost savings and greatly reducing environmental impact,” says Bengt Eliasson, manager, Tetra Pak Dairy Aseptic Solutions. “Capital costs are also lower because a lot less equipment and floor space are needed.”



Sadafco ordered the first processing line featuring this new technology in 2012, and the commercial operation started in December 2013 at the company’s milk production plant in Jeddah. It did not take long until it became clear that the solution worked well, so within six months Sadafco placed an order with Tetra Pak for a second line.

Sadafco’s capacity has more than doubled. The two lines produce 60,000 litres of UHT milk per hour, five days a week, 18 hours per day. “The first line took some learning, but now everything runs very smoothly,” says Reinders.

The next step is to further increase production. The two companies are already working on a solution to increase capacity to 45,000 litres per hour and line. “It is possible, and after that we aim for 60,000 litres per hour,” he says.

The investment figures are really impressive: total cost of ownership is reduced by 32 per cent, thanks to this innovative approach to milk production. “The cost savings are the main benefit,” says Reinders. “The payback period for us is less than two years. That is very good. With lower costs, we will become more competitive.”

### MORE INFO:

[www.tetrapak.com/processing/dairy](http://www.tetrapak.com/processing/dairy)

[www.tetrapak.com/contact](http://www.tetrapak.com/contact)



### BENEFITS WITH THE SOLUTION:

- Thanks to the automation system, Sadafco has reduced production losses due to human error by as much as 33 per cent.
- The time from raw material to finished product has been reduced from two days to just a few hours.
- The new solution takes up less space in the plant, reduces energy consumption by up to 40 per cent and leaves a smaller environmental footprint.
- Production capacity has more than doubled, and in the coming years Sadafco plans to double capacity again to 60,000 litres per hour and line.
- Return on investment for the two recombined milk production lines is less than two years.

## NO. 1 IN SAUDI ARABIA

Ever since it was founded in 1976, Saudia Dairy & Foodstuff Company (Sadafco) has been a leader in the UHT (long life) milk market in Saudi Arabia, with the Saudia brand capturing more than half of the long-life milk market and almost a third of the total milk market. In addition to UHT milk, the company also manufactures tomato paste, ice cream, snacks and drinks. Five per cent of production is exported to neighbouring countries such as Kuwait, Bahrain and Qatar.

The company runs three factories in Saudi Arabia: milk and ice cream are produced at two sites in Jeddah, and tomato and cheese are produced in Dammam.