Why hygienic machine design is under the US dairy producers' spotlight

Dairy food is an essential part of the human diet, especially in the early stages of life. It is the best source of calcium, a vital mineral for building healthy bones and teeth, improving the nerve and muscular system and activating the enzymes that convert food into energy.

According to recent studies carried out by the Baby Center Medical Advisory Board in the US, children from ages one to three need 700 milligrams per day, and from 4-8 years, over 1,000mg per day, which is equal to circa 600 up to 800ml of milk.

With the US dairy market expected to be worth over 65 billion dollars by 2018 and the US food safety regulations being the most demanding in the world, dairy producers are turning to highly hygienic filling and packaging equipment.

3-A Sanitary Standards Inc (3-A SSI), an independent, not-for-profit corporation, is specifically dedicated to advancing hygienic equipment design for the food industry. Over the years, 3-A guidelines have become 'the' standard for food producers worldwide and are widely recognised as the most detailed and stringent design guidelines available.

Bosch Packaging Technology joined the elite group of selected suppliers with 3-A SSI certification in the early 1990s (for a thermoforming machine), and now introduces an extended portfolio of 3-A compliant liquid food filling and packaging machines for premade cups and bottles to the North American market.

To explore the growing demand for hygienic equipment design from US dairy producers, we spoke with Markus Schlumberger, managing director sales at Ampack GmbH, Liquid Food product division at Bosch Packaging Technology.

Carousel filling machine for pre-made bottles and cups, which is primarily used in the dairy industry.

Q. Why is hygienic equipment design increasingly important?

As the mission of the 3-A Sanitary Standards goes, it is all about food safety and public health. Dairy producers are seeking advanced hygienic design in filling and packaging machinery to prevent product recalls, while also simplifying cleaning and reducing product and material waste.

Food safety regulatory bodies such as the US Food and Drug Administration (FDA) and the US Department of Agriculture (USDA) dictate the quality of food substances sold, whereas entities such as the 3-A SSI focus on advancing hygienic equipment design.

For example, 3-A SSI mandates that equipment that handles food should be designed for easy cleaning, sanitary processing and be free of areas that can trap product parts or contaminant. The 3A standard, along with the Pasteurised Milk Ordinance (PMO), became the guideline for official food inspectors ruled by the FDA.

In other words, the 3-A SSI certificate gives dairy producers an assurance that their product will be handled hygienically through the filling and packaging process, contributing to high product quality and ultimately consumer safety.

Manufacturers also benefit from easy cleaning, a positive side effect of sanitary design, streamlined to have fewer areas that can trap food and cause contamination. It is crucial that machines withstand vigorous cleaning and are self-draining, ultimately saving time and labour costs.

Hygienic machine design allows food manufacturers to minimise downtime and waste, ensure consistently high product quality and focus on what they do best – develop and deliver fresh and safe products to consumers.

Q. What are the current hygienic design standards for the US dairy industry?

There are two main organisations providing hygienic design certifications on both sides of the pond: the European Hygienic Engineering and Design Group (EHEDG), a consortium of EU equipment manufacturers, research institutes and public health authorities, and the 3-A Sanitary Standards Inc in the US.

Both certifications have similar approaches as EHEDG and 3-A SSI organisations have been working closely together for the past 20 years to create a uniformed set of hygienic design, testing and implementation standards. However, the main differences lie in the validation process.

In Europe the main criteria includes machine design and testing reviews, which must be undertaken in accordance with EHEDG guidelines and test methods. To obtain the 3-A certificate, applicants must undergo a Third Party Verification (TPV) inspection based on an on-site detailed physical evaluation of an operating system in a processing facility which has to be renewed every five years.

While the entire portfolio of Bosch's dairy

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filling equipment is already EHEDG approved, we have recently received the 3-A SSI certification of our Ampack carousel filling machine. Its upgraded version has been available on the US market since the beginning of 2016.

Due to the complexity of this procedure and the distance between the Bosch facility in Königsbrunn, Germany, and the certification headquarters in McLean, Virginia, US, the whole process took nearly two years. It was important for us to follow through on 3-A SSI, however, as it offers an extra level of assurance to our customers.

Q. Do you think the 3-A certification will strengthen your position in the North American market?

Since Bosch's acquisition of Osgood Industries in 2015, a manufacturer of fill- and seal equipment for pre-formed containers in the food industry for liquids and pastes, our position in the North American market has already grown significantly. The 3-A certification is yet another step forward in our strategy of adapting our equipment to the regional requirements of our customers.

For example, we brought over 50 years of experience in aseptic packaging from the European market to our US colleagues and customers. This way we address the growing demand from baby, dairy and clinical food producers for aseptic filling, the highest possible hygiene level, allowing for up to one year shelf life outside of the cooling chain.

This trend is fuelled by health-conscious consumers looking for high quality products without added preservatives and artificial ingredients. As a result of the certification, we can support our customers better in their journey towards safer dairy food.

Q. What does the future hold? What further hygienic design advancements are you working on?

As food safety regulations continue to strengthen, we believe it will affect the hygienic design of filling and packaging machinery.

At Bosch, we are continuously investing in equipment upgrades, making them easier to use, easier to clean and eliminating any areas that can cause product contamination. Our goal is to not only meet the certification standards but also the production goals of our customers.

One example of how we are trying to achieve this is the current standardisation

of the aseptic module to further improve hygienic design, as well as accessibility and ease of maintenance. An improved hygienic design is also the base from which we achieve a further reduction of cleaning and sterilisation times and elongation of production cycles.

This is one of the key tasks to further improve production availability of the filling machines. ■

References are available from the author on request
www.boschpackaging.com