



**Keeping food
healthy worldwide.**

Nowhere is sanitation more critical than in the food you eat and the beverages you drink. With superior products, equipment and programs, Ecolab's Food & Beverage Division – the leader in its markets – helps facilitate their production for safe human consumption.

Clean-in-Place (CIP)

1. An accurate, efficient computerized dispensing program and system used during a plant's cleaning cycle to clean and sanitize processing lines, tanks and filling equipment that carry food, beverage and dairy products.
2. Without CIP technology, pioneered by Ecolab, processing lines and pipes must be dismantled for cleaning and sanitizing.

Food & Beverage

AT A GLANCE

Markets served:

Dairy plants
Dairy, poultry
and swine farms
Food processors
Fruit and vegetable
processors
Meat and poultry
processors
Beverage and brewery
processors
Pharmaceutical and
cosmetic manufacturers

Services provided:

Custom-designed
dispensing and control
systems; premium
detergents, cleaners,
sanitizers and
lubricants; and water
treatment tailored to
each market sector.

Strengths:

Complete premium
cleaning programs
coupled with proprietary
dispensing equipment
for dairy, beverage and
food producers and
farmers, backed
by a highly trained
sales-and-service force.

OVERVIEW Cleaning and sanitation must begin at the start of the food chain, long before dishes reach the table. Through its Food & Beverage Division, Ecolab provides cleaning and sanitation products, programs and expertise to dairies, farmers, food and beverage processors, and breweries, to help facilitate the production of products safe for human consumption. In addition, Food & Beverage is leveraging its expertise developed in serving the process manufacturing industry to serve pharmaceutical and cosmetic manufacturers.

Food and product safety is the division's business. The base is broad, and perhaps nowhere is the need for proper sanitation and cleaning more critical. The market leader in the dairy plant, agribusiness (dairy farm), beverage and brewery sectors – as well as possessing a growing presence in the multi-faceted food processing arena – Food & Beverage provides such customers with premium detergents, cleaners, sanitizers and conveyor lubricants to help ensure safe processing of food. It also designs, manufactures and supplies electronic controls and dispensing equipment that enhance precise product usage in a market where there is no room for error. All are delivered through Food & Beverage's sales-and-service force, about two-thirds of which holds degrees in dairy science, food science, microbiology, chemistry or engineering.

Tsunami

EPA registered peroxyacetic-acid based antimicrobial for flume and wash water systems that help reduce microbial counts on fruit and vegetable surfaces.



Food & Beverage



DAIRY PLANTS

Dairy plants are Food & Beverage's core market, and the division is the market leader. Customers in this market segment process milk into the products consumers buy in the supermarket, such as fluid milk, cheese, yogurt and ice cream. During processing, milk products are transported through an extensive pipeline network, from the dairy trucks that deliver raw milk, to pasteurizing, mixing, blending and final packaging. To effectively and efficiently accomplish cleaning and sanitation in these vast pipeline networks, customers use "clean-in-place" (CIP) technology pioneered by

Food & Beverage. These fully automated computerized programs and systems, custom-designed by Food & Beverage, clean and sanitize customers' production facilities to rid vessels, pipelines and filling equipment of microbiological contaminants such as *Listeria* and *Salmonella*. Another next generation productivity-driven system utilized in dairy processing and cheese manufacturing plants is *Exxelerate*, which reduces cleaning time, and in turn, increases the plant's production time – thereby increasing production capacity. A system of cleaning products and food-grade additives, *Exxelerate* allows customers to streamline their wash cycles and extend run time in their whey/lactose process. *Exxelerate's* complete cleaning program helps maximize the daily production outputs by providing customers with a quicker, easier way to clean their equipment.

In addition to detergents and sanitizers, Food & Beverage provides all-purpose cleaners, lubricants for dairy processing conveyors, a complete personnel hygiene program and other products for this market.

As environmental concerns and increased regulations have heightened customers' needs for water and effluent management, the division provides a comprehensive water

management services program. First, Food & Beverage consults with customers, helping them comply with regulations and minimize their costs by reusing and conserving water wherever possible. The goals are to manage water flow and minimize the amount of wastewater generated. Second, increasingly stringent wastewater discharge standards mean dairy processing plants must be conscious of wastewater content. For example, *Solodigm*, a clean-in-place detergent system for dairy processors, uses no chlorine, phosphates or caustic chemicals. This reduces problem effluent constituents and helps customers meet even the strictest wastewater standards. Food & Beverage also offers water treatment products for servicing boilers and cooling water systems through a cross-divisional partnership with Ecolab's Water Care Services Division.

AGRIBUSINESS

Food & Beverage is the market leader in dairy agribusiness. This sector deals with live animals, as opposed to animal by-products. Food & Beverage supplies products that enhance animal health as well as milking system and environmental sanitation products to help ensure delivery of a safe, uncontaminated food product. For instance, with dairy farmers, sanitation begins with the cow. Food & Beverage offers teat dips to help prevent infection, and detergents and sanitizers to clean milking machines. It also provides detergents and sanitizers to clean the pipes, vats, coolers and holding tanks that transport raw milk at the dairy farm, as well as products to clean milking parlor surfaces.

Food & Beverage employs a highly effective group of knowledgeable, experienced farm specialists to serve customers in this market. The specialists market Food & Beverage's offerings primarily through farm cooperatives and distributors, which sell the products to the end-users. The division works with distributors and cooperatives on national, regional and local levels. Food & Beverage's support does not end with the sale, however. The specialists also visit farm distributors and cooperatives and their customers, answering technical questions, teaching them how to use products, and helping them identify problems and improve results.



FOOD, MEAT & POULTRY PROCESSING

A diverse and complex industry, food processing encompasses manufacturers of nearly every kind of food product, from canned soups and ketchups to cereals and hot dogs. Like dairy plant and agribusiness operators, food processors have tanks in which food is mixed and pipelines in which it is transported, along with specialized equipment, such as fryers and ovens, that must be cleaned. Also, like dairy and agribusiness customers, each food processor must meet stringent standards to prevent food contamination, which can result in reduced shelf life or foodborne illness.

Food & Beverage is strengthening its presence in the food processing industry by changing the way producers approach food safety. The division is accomplishing this through an even stronger emphasis on the importance of comprehensive cleaning and sanitation from the beginning to the end of the process. Multiple interventions provide an innovative, integrated and efficient approach to maximizing food safety. Ecolab's complete program is specifically developed to address every critical control point in customer operations. The *Inspexx* and *Sanova* lines of carcass wash products, for example, were formulated to provide control of microorganisms on the surfaces of meat and poultry.

Automated dispensing systems, advanced detergents and sanitizers, patented food surface treatments and a complete personnel hygiene program, help provide food products in which virtually all pathogens and spoilage organisms are reduced. Ecolab's integrated, comprehensive approach to food safety is unmatched in the industry. Corporate and regional accounts contribute a large portion of Food & Beverage's food processing sales. Sole and preferred supplier relationships with major food processing companies are a key factor in the division's growth in this area.



FRUIT AND VEGETABLE PROCESSING

To meet the unique needs of the fruit and vegetable processing industries, Food & Beverage provides systems that help fruit and vegetable processors produce a ready-to-eat end-product for human consumption. These products provide microbial control of fruit and vegetable surfaces in the flume water systems that transport fruit and vegetables to other processing operations within a plant. They reduce microbial counts on the product surface, thus helping to assure quality.

BEVERAGE AND BREWERY

Soft drinks, fruit juices and beer are primary products in the beverage and brewery sector. As in other markets, mixing vats and pipelines must be cleaned. Conveyor lubricants are also important, because they can help keep conveyors clean and keep bottles and cans moving along production lines. In addition, Food & Beverage offers EPA registered products that inhibit the growth of bacteria in can and bottle warmers, where beverage containers are sprayed to prevent condensation and problems in packaging.

Like food processing, each niche in the beverage/brewery sector poses separate challenges. For example, the increased use of fruit juice additives in soft drinks requires additional measures to ensure bacteria are killed. In the brewery sector, dry and draft beers, which are not pasteurized, require a special lubricant to control the buildup of bacteria and yeast during bottling. Food & Beverage designs products to meet these specific needs, and beverage account managers work with customers to achieve the desired results.



EcoCare
A personnel hygiene system for processing plants with doorway sanitizers, hand soaps and sanitizers, and touchless dispensers.

EQUIPMENT

Food & Beverage designs, manufactures and supplies proprietary electronic controls and dispensing equipment to complement its product offerings. While sanitation requirements are somewhat standard throughout the world, each customer has individual needs based on the types of soils it must remove, its production volume and other factors. Food & Beverage Engineering works with customers to determine their needs. They then design and build systems, developing software for the controls and dispensing equipment, that enable wash and rinse formulas to be programmed specifically for each facility. No competitor offers such a comprehensive and individualized program.

The *Quadexx* system permits on-site formulation and allocation of custom sanitation control products to meet food, meat, poultry or beverage plant's specific needs. Web-based documentation and precise control of sanitation chemical allocation by application are the key benefits of *Quadexx*, which aids in meeting government standards for pathogen reduction and in adhering to standard operation procedures.

IMPROVED OPERATIONAL EFFICIENCIES

Food & Beverage differentiates itself from its competitors by maintaining a "total systems" approach. In other words, when working with customers, Food & Beverage addresses all the elements that make up the actual costs of cleaning, including labor, chemicals, water, effluent, utilities, corrosion, equipment and indirect expenses. It then provides solutions and programs that maximize production and cost efficiencies while maintaining the high quality of a customer's finished product.

A Food & Beverage Service Call



Food & Beverage account managers make many of their service calls at night, when customers' sanitation crews are busy cleaning production lines, vats, tanks and processing pipelines. The number of calls they make varies greatly. For example, depending on the size of an account and its unique needs, a service call may run anywhere from a couple of hours, to a full shift, to several days. Account managers can service some customers during the day, and also use daytime hours to call on prospective customers. Like other Ecolab sales-and-service representatives, account managers are accessible by cell phone and are in frequent contact with ECOLink. They are also linked to other Food & Beverage associates by e-mail.

OBSERVATIONS		FOLLOWUP	
PROCEDURE Checked heat charts. Found all led out. This is a re- state inspection.	Checked charts to fully. No charts completely fill out daily.	ACTION	DATE
QUALITY Checked lab reports for quality for this period. No problems at this time.	Checked charts to fully. No charts completely fill out daily.		
ENVIRONMENTAL SANITATION Checked on our housekeeping on a regular basis. No problems at the site.	Suggest monitoring on a daily basis.		
CLEANING EQUIPMENT Checked pump. Not able to get pump operating properly.	I will order new pump immediately. Plant manager will install. 4/9/99.		

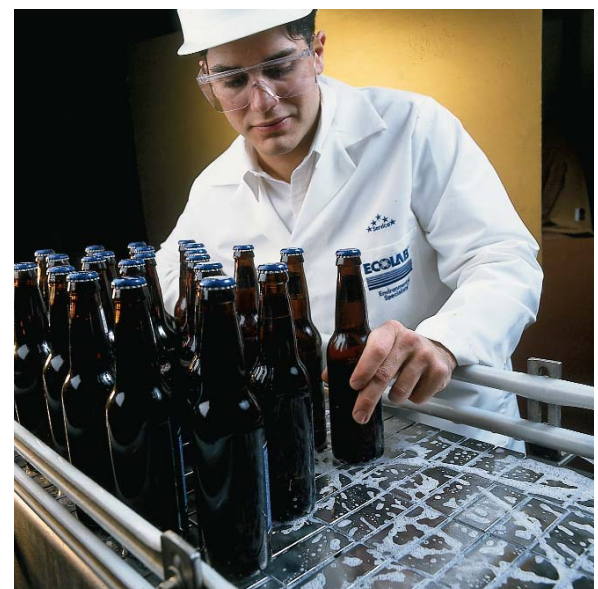
Food & Beverage's service is designed to help customers keep their total cleaning costs in line. Account managers help customers achieve better results and more efficiently manage other components of the cleaning process, such as labor and water costs. On average, Food & Beverage services its plant customers monthly – sometimes more often, depending on the account's needs. Plant customers typically are dairy, food and beverage processors and breweries. The following is an example of what a typical monthly service call entails.

The account manager checks in with the sanitation manager and quality assurance staff to see whether there are any concerns, or if problems have surfaced since the last service call. This plant makes frozen pizzas. With its six lines running, the plant turns out nearly 5 million pizzas per week. Cleaning takes place from midnight to 8 a.m. The account manager works at this plant during the entire cleaning shift.

All of the Food & Beverage dispensing equipment is checked to make sure that it's functioning properly, that the correct concentration of product is being dispensed, and that cleaning procedures are being followed. The account manager checks the challenging areas – in this case, where there are stubborn burned-on soils such as cheese and pizza dough. Product inventory is reviewed to see how much the customer has been using. This is a checkpoint for keeping costs in line.

Throughout the night, the account manager works with the sanitation crew. In addition to this hands-on training, the account manager periodically conducts more formal sessions at the plant, covering topics that revolve around good sanitation practices and product safety.

Using a laptop computer, the account manager creates a service report. Before leaving the plant in the morning, the account manager reviews this report with the sanitation manager, noting findings and any follow-up that's needed by Food & Beverage or the customer.



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