



Today's food manufacturers are looking for ways to boost production runs, simplify clean-up and sanitation, control ingredient costs, reduce changeover times between runs and increase the ability to produce a variety of product types and sizes, all with an emphasis on cutting cost but improving overall food safety. Automation of the complete process is a key trend in food manufacture from raw ingredient receipt and transfer, including various pneumatic transfer options, batch weighing techniques, and continuous feeding methods, all the way to the extrusion, and packaging steps downstream. All automated equipment designs will emphasize process and product safety, as well as discuss options in process design for minimizing overall down times for product changeovers and cleaning.

▶ For increased production runs, food manufacturers are searching for equipment partners whose designs provide them with versatile additions in production capacity, with an emphasis on process efficiency and product safety. For example, when dealing with extruded processes, specialized design extruders, such as Coperion's ZSK Mv PLUS twin screw extruder models offer up to three-four times higher capacities than preceding models, all within the same smaller footprint. This highly efficient design, coupled with the completely inte-

What are trends in food processing equipment and what to look for in 2015?

Food Processing Equipment Trends

grated and automated material handling, batch weighing and high accuracy feeding provided by Coperion K-Tron allows the end user to produce more product with lower overall production times, and less margin for human error.

▶ **Food safety and contamination avoidance is of utmost importance when handling any food product,** including those for hygienic processes such as infant formula or baby food, and even handling allergens in a snack food type product. Due to a variety of options available in safe and efficient process equipment design, it is very important that

the equipment manufacturer be experienced in a variety of engineering design regulations and standards, such as EHEDG, FSMA, GFSI, USDA, 3A, etc. Today's food manufacturers require equipment partners who can not only educate them in the options available to meet these standards, but also ensure a cost-effective process solution. In addition, more and more food manufacturers are requiring equipment suppliers to be capable of performing complete process acceptance tests at their facility prior to shipment, in order to prove the overall performance of the

system. This ability to design a type of all in one "modular" production skid has seen significance in providing complete food processing systems to remote plants of global organizations. This requires the installation engineering to be done at the time of the FAT, ensuring that the complete process module can be verified at the equipment manufacturer's facility, and then shipped and installed with minimal downtime, thus also adding to project efficiency.

▶ **For ease in cleaning and product changeover, food equipment designs are available to ensure minimal downtime and to ensure the system is completely cleaned and safe.** Equipment manufacturers which can provide these key insights into their designs are quickly becoming the equipment partners of choice. For example, the recently introduced Coperion K-Tron SFR Sanitary Filter Receiver was designed specifically with quick accessibility and easy clean engineering in mind. The receiver is designed to be taken apart without tools, and includes an innovative filter and tubesheet assembly, also for quick removal and inspection. It is



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important that the equipment manufacturer discuss in detail with the end user the methods of cleaning that will be used for the process, for example either wet or dry, and make design recommendations to accommodate the cleaning process, such as retractable spray balls for CIP/WIP systems, or minimal horizontal ledges which can be easily wiped clean for dry cleaning. By including upfront design features which focus on accessibility and ease of cleaning, food processors can easily reduce product changeover time and simplify the cleaning process for sanitation crews, thus improving overall process efficiency.

▶ **controlling ingredient costs is critical to improving the overall profitability of a food production process.** Use of higher accuracy ingredient delivery systems, such as the loss-in-weight feeders or automated batching systems, such as those provided by Coperion K-Tron, ensure that the exact amount of ingredient is being delivered to the process, thus ensuring the end product quality but also minimizing or eliminating ingredient waste which may be a result of poor measurement or manual handling.

Integration

All of the key components to process efficiency and design such as those outlined above require a strong partnership between the food processor and the equipment supplier. Food manufacturers are looking for equipment suppliers who can supply one source integrated systems to ensure product and process quality in all stages of the process, and who take complete responsibility of the resultant end product. For this reason, it is imperative that the equipment supplier not only be knowledgeable of the equipment being supplied but also of the process, and provide all the necessary integration steps in order for that process to run smoothly, inclusive of automated control systems which perform a variety of advanced functions including recipe and process loop controls, bar codes and tracking and complete system alarm analyses, in accordance with HACCP (Hazards Analysis and Critical Control Points.)

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Coperion (www.coperion.com) is the international market and technology leader in compounding systems, feeding technology, bulk materials handling systems and services. Coperion designs, develops, manufactures and maintains systems, machines and components for the plastics, chemicals, pharmaceutical, food and minerals industries. Within its four divisions – Compounding & Extrusion, Equipment & Systems, Materials Handling and Service – Coperion has 2,500 employees and nearly 40 sales and service companies worldwide. Coperion K-Tron (www.coperionktron.com) is a brand of Coperion.