

Consistency Is Key

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Consistency is key in the food industry. A food product's recipe must continually be accurate and repeatable, not only to maintain high quality, but also to ensure safety. *Food Manufacturing* spoke with Jonathan Sabo of Cardinal Scale about how weighing and instrumentation systems can help manufacturers achieve consistent product results as facilities continue to become more automated and technologically advanced.

Q: What are some of the latest technological advances in instrumentation and weighing systems that can benefit the food industry?

A: Today, weighing systems are becoming more automated as both instrumentation and computing technology advance further. Accuracy, consistency and data transfer capabilities are crucial for weighing systems used in the food industry. One area with which we've had an incredible amount of success recently in food manufacturing is a color-based checkweighing feature, which features an LCD screen that changes color based on preset target weights. This allows readouts to be seen across the room, and even food manufacturing workers who don't speak English fluently can quickly do their work, as the system is all color-based.

Another recent technological advancement taking place is reduction of mechanical parts used in digital indicators for weighing systems, such as pushbutton keypads. Capacitive keys that work like buttons on a smart phone help prevent interference of inanimate objects, such as scissors or knives, that may scratch, tear or inadvertently press keys and input incorrect data during work. Capacitive touch

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ensures that keys are pushed only through human contact. This also reduces wear and tear and increases the longevity of a weighing system.

Q: How can food companies best utilize the data gathered from weighing systems to help streamline their processes?

A: A product is generally the sum of its parts, and this is perhaps most apparent in the food industry. In simple terms, a recipe is followed, batch ingredients are added, different methods of preparation are applied and in the end you have your product. The closer you are able to follow those precise measurements and proportions in your recipe, the more efficient your process becomes. Eliminating excessive overages or shortages of ingredients can potentially be a huge money-saver for a company. A few grams of overage in one item aren't particularly a big deal. However, a few grams of overage in 1,000 items per day present an issue. Reigning in those overages and applying accurate product weights consistently results in huge cost savings. Ingredients oftentimes can be expensive and a good company will want to make absolutely sure they're being as accurate as possible. Consistently using the exact amount of an ingredient called for in a recipe correlates directly with a decrease in material costs and an increase in productivity, thereby increasing profit margins because you're using ingredients more efficiently.

Q: What impact can instrumentation and weighing equipment have on food product quality?

A: Quality of a food product is directly related to how closely it follows its recipe. Not only does it increase the quality of each and every individual product, but the quality of the company as a whole is raised as well because they are producing a consistently higher quality product in the eyes of the consumer. Maintaining that level of precision and accuracy becomes a tremendously important part of the process. By utilizing the latest and best methods and technologies, a company can ensure a higher chance of accomplishing that goal. Part of what we can offer from Cardinal Scale is USA-made batch weighing systems that not only function consistently in terms of accurate weights, but also scales incorporate data transfer capabilities to printers, PCs and networks.

Q: Food safety has become increasingly important in facilities, especially as the Food Safety Modernization Act continues to be implemented. Can the weighing systems in a plant impact food safety?

A: Absolutely. When a scale has a flow-through design that minimizes the buildup of food deposits and a washdown enclosure which allows for frequent cleanups, maintaining a clean environment becomes much easier. Stainless steel construction is helpful in food-grade weighing systems, because of its durability and washdown capability. More durable weighing systems allow for powerful water-jet cleanup, whereas a more sensitive weighing system consumes more time and resources to clean if not made to withstand such conditions; the load cells can become damaged by water. Bacteria buildup can collect, creating an issue when trying to maintain a hygienic environment for a food manufacturing facility. Oftentimes, these processes can get messy, and even if it's a drop here or there, when you're running thousands

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of products through a system, those drops add up. The ability to hose down equipment for cleaning becomes invaluable because it not only ensures the equipment will be running at peak efficiency, but also aids in keeping the workplace sanitary.

Q: To ensure high product quality, it is important for instrumentation and weighing systems to provide accurate and repeatable results. Can a plant's environment (i.e. surrounding equipment, workers using the system, etc.) impact accuracy and repeatability? What technology is available to help manufacturers mitigate these issues?

A: Unfortunately, when humans are involved in a process, a risk for error always exists. Reducing their involvement is one method to minimizing that inherent risk, as well as incorporating more process automation for batch weighing. To this end, many weighing system indicators now offer their operators quick-read displays with color-designation so a scale can be read easily, whether it's under, over or accepted. This method is much easier than reading a number itself on a normal display, because not only does it require less thought to differentiate, but it also speeds up the operation, further increasing productivity. Selectable key lockout on a scale's weight indicator is also useful in situations where this is an issue with repeated operator errors. On some systems, certain keys may be rendered inactive during setup so they are not inadvertently pushed.

Q: What factors should food processors consider when adding new weighing systems into their facilities?

A: The biggest factors to consider when adding a new weighing system are accuracy, dependability, durability and functionality. The more consistently accurate a weighing system functions, the longer it is able to run dependably. The specific functions that the weighing system possesses all play considerable roles in the selection process. These factors determine the intrinsic value of a great weighing system, value that is then transferred on to the food processing facility. We've also found that now more than ever, American-made quality means a lot to customers, even if they're not U.S. customers.

Interview by Lindsey Coblentz, Associate Editor

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