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THE IMPORTANCE OF **CHANGEOVER** IN PORTIONING EQUIPMENT

A White Paper by Unifiller Systems Inc.



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INTRODUCTION:

Efficient changeover plays a key role in successful baking and food production. In the past, the process of converting a machine or line from running one product to another was an arduous, time-consuming task; now, even with the broader variations in product offerings, changeover can be done with ease thanks to technological advancements and fresh innovations by OEMs.

The entire changeover process can be broken down into three parts:

CHANGEOVER = CLEAN UP + SET UP + START-UP

How quickly or slowly your bakery or food plant can conduct changeover is dependent on factors such as:

- The flexibility of your product
- The “cleanability” of your equipment
- Precision and skill of your operators
- The design and versatility of your equipment

Ideally, food and bakery producers should aim for a seamless changeover every time. Doing so would add significant benefits that would drive productivity and boost the bottom line.



HOW EFFICIENT CHANGEOVER IS A MUST



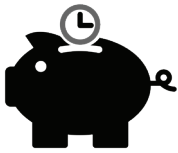
ENHANCE PRODUCTION CAPACITY AND FLEXIBILITY: Naturally, faster changeover times would allow bakeries and food producers to spend more time producing rather than cleaning or setting up for a new line, thereby increasing their production volume and potentially helping to keep up with demand. Plus, efficient changeover would give them the ability to easily switch between products or even increase the variety of product offerings.



REDISTRIBUTE HUMAN RESOURCES: Since bakeries typically operate in shifts, using innovative and versatile equipment to deposit batters or icings during the production process would allocate more human resources to other tasks such as packing or sanitation. Plus, being able to quickly complete changeover — especially without fully disassembling the equipment — can help operators reserve energy for more laborious tasks.



IMPROVE RECOVERY TIMES: Efficient changeover lends to faster product recovery and tighter quality control. In turn, this would minimize food waste and inventory costs.



SAVE TIME AND MONEY: The greatest and most obvious benefit to efficient changeover is saving precious production time. Time during which machines are left idle is basically money lost. There is also the cost of water, electricity, and chemicals during cleaning that must be factored into the overall cost of production, not to mention any product that might be wasted during cleaning or faulty changeovers.



ENSURE BETTER FOOD SAFETY: Ensure better food safety. Machines designed with the minimal amount of parts necessary require less cleaning, which ultimately translates to a smaller risk of cross-contamination.

Machines with the fewest parts to maintain and replace, combined with tool-less design, also means that the equipment is user friendly and easier to setup, dismantle and clean. The learning and training process is that much simpler. Even entry level staff can be easily trained to ensure proper cleaning protocol for greater food safety.

A DUAL PERSPECTIVE TO IMPROVEMENT

According to [Vorne](#), there are two types of improvements that can be made to reduce changeover time: human and technical.

HUMAN IMPROVEMENTS:

An obstacle standing in the way of quick changeover time could be a lack of teamwork between equipment operators. This can be solved by standardizing procedures and training to reduce the risk of miscommunication and put everyone on the same page.

Another solution would be to take advantage of the technology and tools that are available. Gone are the days of thick binders filled with plastic-bound instructions and checklists; documents can now be copied, distributed, and accessed electronically anytime and anywhere. For example, instead of having one textual copy of an SOP that could get misplaced or lost, simply give everyone on your team digital access to it. Even better would be including instructional videos for clarity.

All in all, human improvements require a thorough review of and update to the work culture, whether it's looking at interpersonal communications or digitizing procedures. Ensure that your work culture is one that encourages and prioritizes collaboration; a team that communicates and collaborates openly is one that would be better trusted to ensure food and employee safety, proper care of equipment, and overall efficiency.

TECHNICAL IMPROVEMENTS:

Using smart machines that are modular, possess quick release mechanisms, and require tool-less changeover would put bakery and food producers on the path to an overall more effective production process on top of streamlining changeover. It also helps to use machines that were built with the minimal amount of necessary parts. To put it simply, less parts means less cleaning.

It's a good thing, then, that OEMs are now innovating their designs to be more changeover-friendly to match this need for flexibility. For example, all Unifiller depositors are designed and built with the philosophy of simplicity: they do not require full disassembly, are easy to take apart, and possess interchangeable nozzles.



TIPS TO REDUCE CHANGEOVER TIME WHEN USING DEPOSITORS

When using single or multi depositors, Emilio Cabrera, Technical Advisor at Unifiller Systems, recommends the following two methods to streamline product changeover.

1. Use the second product to push out the first one if both products are very similar—especially if the second product is dominant in color, flavor, or smell.
2. Take advantage of the machine itself to pump warm water (and then cold, if the product requires it) at high volume and maximum deposit speed. This basically pressure-washes the machine. Once the machine is completely drained, pour in the next product, and it will displace any leftover water.

Cabrera adds, “It is recommended to re-lubricate the O-rings right after washing to minimize their wear and improve sealing. If you cannot afford the extra time to do so, make sure to change them every day.”





FINAL NOTE

Time is a valuable and finite resource in a given workday, so it would be worthwhile to regularly review how your production procedures may be unintentionally wasting it and find alternate ways to optimize it instead. Executing changeover may not be as difficult or time-consuming as it was thirty years ago, but with the rate of technological advancements happening now, OEMS are constantly innovating for better solutions.

Improvements can always be made, whether they target the human or technical components of the manufacturing process. The best ones, however, will involve a firm alignment between the human and technical sides of the manufacturing process. Mike Porter sums it up well when he says, “Strong partnerships between OEMs and bakers [and food producers] will drive success through overall improved efficiencies and profitability.”

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This White Paper is written by: Peggy Liu and graphically designed by: Victoria Gunning