FREE CHECKLIST

Improving Efficiency at Your Pet Food Processing Plant

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Introduction

Efficiency can mean making a process faster, reducing waste and downtime, or completing a desired result in fewer steps. Often, improving efficiency has multiple results. In this checklist, we'll go through a number of strategies that can help plant managers improve efficiency in pet food processing plants.

How to Use This Checklist

This checklist is intended to help pet food processing plant managers review plant efficiency in an organized format. Depending on your equipment and operations, some of these may help speed up operations and reduce waste, while other strategies might not be applicable. Some of the items on this checklist may already be on your radar, others may be new, and others may be feasible right now.

As you go through this checklist, you might cross out items that aren't applicable to you, check off items you've already taken care of, and highlight items of particular interest. If you'd like more information on a particular efficiency improvement, we can help. **Get in touch with us** to speak with an engineer about efficiency upgrades.

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Equipment

The equipment at any pet food processing plant is generally the first source of efficiency upgrades. When your equipment is optimized, your operations can run smoothly. While there are many aspects of equipment efficiency, we'll cover some of the most common ways to improve speed, reduce waste, and reduce maintenance times in pet food processing.

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Improving Speed

Improving the overall speed of your facility means more production in a smaller time frame. Some facility managers improve speed by upgrading slow or outdated equipment, though it's important to consider the entire process as a whole.

- [ ] **Coordinating process times:** Scales, mixers, coating, extrusion, and drying processes can be synchronized to improve the overall process speed. Assess where machines are idle, for how long, and whether or not the surrounding processes can be better coordinated. Even small gains can add up over months and years.

- [ ] **Optimizing equipment:** Old or outdated equipment generally operates more slowly than new equipment. If your processes are already synchronized (see above), this won't be a problem, but a single outdated machine can negate the efficiency gains from newer, surrounding equipment. Particularly, consider the mixing time on your mixers, cooking or drying times, and filling and weighing times.

- [ ] **Automating manual tasks:** Manual tasks inevitably add process time. The most common manual tasks in pet food processing are hand-adding ingredients or manually starting and stopping machinery. Automating these tasks can improve coordination and process time.

Reducing Waste

A small amount of waste, like .5%, appears inconsequential day-to-day, but this can add up to thousands of dollars in waste over the year. While no process is exactly precise, uncovering and fixing processes with high levels of ingredient waste can improve efficiency overall.

☐ **Weighing:** An inaccurate weighing device is a common cause of ingredient over-use. While it's important to meet minimum amounts of any ingredient, many weighing and batching systems overfill, ultimately wasting the ingredient. Switching to a mass flow meter can improve accuracy. Regular calibration and examination for damage are also important.

☐ **Wet coating:** Inspect the product immediately after liquid coating. In some cases, drums or mixing conveyors do not produce enough mixing action or retention time for adequate coating. Instead of coating the product, the coating is left on the equipment. If these problems persist, consider **liquid coating equipment alternatives.**

☐ **Dry coating:** If dry coating processes are not well-contained, the coatings can end up on the floor and in the air. Using the adhesion of a wet coating process can help to reduce fugitive dust.

Reducing Maintenance & Downtime

Preventative maintenance will cause some downtime, but it can also dramatically expand the life of your equipment and reduce the impact of a shut-down. Keeping your PC or PLC updated, checking for common equipment problems, and performing preventative maintenance with a planned schedule can make a noticeable difference overall.

☐ **Check for system updates:** This particularly affects PC systems. Software engineers update and patch programs to eliminate vulnerabilities as they appear. Unsupported software can expose the facility to bugs or cyber attack.

☐ **Back-up procedures are in place:** This also applies to a more advanced PC-based system. By regularly backing up your data and maintaining a back-up procedure, you can recover more quickly if shutdown or data loss occurs.

☐ **Critical functions are supported by redundancy:** Multiple controls, mixers, weighing systems, and other critical functions can speed up processes when they work simultaneously. If one goes down, redundant systems also prevent a total shutdown.

☐ **Key replacement parts stocked:** Keep common replacement parts for your equipment in stock, and be sure someone has the necessary expertise to make replacements.

☐ **Instrument calibration and scale factor adjustments can be performed in-house:** Calibration and scale factor adjustments are a necessary part of essential maintenance. A staff member should be able to conduct these adjustments.

☐ **Staff are trained to adjust and maintain controls:** The PC or PLC should not be a "black box." Staff members should be able to maintain and, when necessary, adjust these systems. Regular training by experienced staff members will ensure this knowledge is available as employees leave or retire.

Industrial Safety & Compliance

The next section concerns industry best practices for maintaining compliance and worker safety. Safety and compliance are sometimes seen to be in opposition to efficiency. However, safety and compliance considerations are often an essential part of long-term, sustainable efficiency, even if this results in delays or downtime at first. These considerations can help you achieve a safe, compliant and efficient workplace.

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Personnel

Keeping personnel safe and well-informed is a pivotal part of efficient operations at any facility. Even automated operations rely on workers in some form, such as supervision, maintenance, or calibration. When workers understand processes, regulations, and requirements fully, the facility is set up to maintain the best possible operations.

☐ **Labor assessment:** How many employees are needed to keep operations running smoothly? Are employees given adequate space, ventilation, and protective equipment? Making employee safety a high priority and understanding requirements for maintaining it will help to keep operations running without incident long-term by avoiding strikes, OSHA fines, and the expenses from high turnover.

☐ **Risk assessment:** Risks to employees change as equipment advances and new threats arise. A regular risk assessment will keep new threats from endangering your employees and your business. Consider how new technology, materials, facility design, illness and other changes can introduce new risks.

☐ **Comprehensive training:** A comprehensive training system ensures that all employees have the knowledge they need to complete processes, conduct maintenance, report problems, and manage incidents. Knowledge gaps should be assessed and systematically resolved through the training program, or errors will persist from a lack of understanding.

Regulatory Compliance

FDA regulations, particularly the **Food Safety and Modernization Act (FSMA)**, lay out specific requirements for pet food processing plants. Many of these regulations are very similar to food processing for human consumption. Adherence to these regulations not only helps to prevent expensive fines, but also helps to prevent food contamination, product defects, and sales lost to public mistrust. Automating processes that assist in regulatory compliance, while also verifying these processes, can help to improve efficiency.

☐ **Lot tracking and labeling automation:** An automated ingredient system integrated with a lot tracking system makes essential lot tracing compliance fast and easy. This system should be regularly assessed and verified to ensure it is working properly.

☐ **HACCP assessment updates:** With every equipment upgrade, new machine, new process or other important changes, hazards should be reassessed to ensure compliance and prevent problems down the road.

☐ **Good manufacturing practices followed:** Equipment must be designed to meet food safety requirements. This includes proper welding techniques, steel grades, food-grade finishes, hermetic sealing, and **more.**

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Facility Safety Standards

Maintaining a culture of safety, putting safety precautions first, and creating a system for resolving risks helps to improve job satisfaction, reduce turnover, reduce liability, and, overall, improve efficiency. Consider these tips for preventing common safety problems in pet food processing plants.

☐ **Establish an equipment maintenance schedule and process:** The process and timeline for maintaining equipment should be clear and well-documented. Accountability for this process should be known, so workers know where and how to report any issues.

☐ **Remove trip and fall hazards:** Trip and fall hazards are among the most overlooked and most dangerous workplace hazards. Power cords and communication lines cannot cross high-traffic areas. Catwalks must have guard rails. Personal fall arrest systems (PFAS) must be in place where heights present fall hazards.

☐ **Equipment is securely grounded:** An insecure ground, either from bad electrical wiring or an unstable foundation, presents serious electrocution hazards when working with high-powered equipment.

☐ **Liquid and powder coatings are contained:** Liquid coatings containing fats and oils can quickly coat floors and create slip-and-fall hazards, as well as bacterial breeding grounds. Powder coatings enter the air and can cause respiratory problems. Fugitive dust and liquids must be well contained or well ventilated.

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Improve Efficiency At Your Pet Food Processing Plant

There are many ways to improve efficiency at your pet food processing plant. If you've identified sources of excessive maintenance, downtime, product loss, material lost, or risk, you've taken the first step. The next step is solving these problems. Talk with an engineer about your system design, and learn how you can improve your processes.

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Contact us today!

www.apecusa.com
+1 (616) 374-1000