THE INSIDE STORY: HOW FOOD PROCESSING PLANTS ARE IMPROVING SUSTAINABILITY, SAVINGS AND SAFETY

What's their secret?

How have some food processing plants saved millions of gallons of water, dramatically curtailed their energy use, enhanced worker safety and reduced both maintenance and downtime?

The answer is inside their tanks.

This is a real-world story of improved sustainability, savings and safety. It will demonstrate point-by-point how automated tank cleaning realizes all four objectives for food processing plants.

More importantly, you will see how a necessary maintenance function can be transformed into a proven efficiency driver across your plant. You will also learn how the inherent inefficiencies and risks of manual tank cleaning can be eliminated.

This is the inside story of automated tank cleaning and the substantial benefits and measurable ROI it is delivering every day at food processing plants around the world.

INSIDE THE CHALLENGES: ISSUES WITH MANUAL CLEANING

For many food processing plants, tank cleaning is a manual process. They rely on workers with hoses and scrub brushes, or the fill and drain method. These options are time consuming, wasteful, difficult and potentially dangerous.

Major manual tank cleaning challenges

- Loss of production
- Cross-contamination, rework and waste
- Less consistent and effective cleaning
- Excessive maintenance time
- Significant labor
- Unnecessary safety risks
- Extensive water use

Automated tank cleaning eliminates all of these issues. For that reason alone, it is well worth implementing. However, this method achieves much greater long-term benefits, and it all starts with sustainability.

INSIDE SUSTAINABILITY:
EFFICIENCIES AND EFFECTIVENESS

To be considered truly successful, sustainability efforts must pass three critical benchmarks.

Successful sustainability efforts must:

1. Deliver enhanced, ongoing environmental efficiencies
2. Improve safety, or social sustainability
3. Maintain effectiveness without compromises

With the right equipment and guidance, automated tank cleaning provides an easy way to ensure all three benchmarks are met.

EFFICIENCIES ON EVERY LEVEL

Saving water and energy are two primary drivers for any sustainability initiative. Automated tank cleaning excels in both areas. It also allows for a significant reduction in cleaning chemical use. Here is a brief description of how these savings can materialize.

REDUCING WATER, CHEMICAL AND ENERGY USE

The big picture

Let's start with reduced water use. Automated tank cleaning offers the potential to save millions of gallons of water every year, dependent on cleaning requirements. This includes the number and size of tanks, totes, vessels, drums and mixing equipment in the food processing plant.

Reduced chemical use occurs in tandem with water savings because these fluids are pumped into the tank simultaneously.

Saving water also contributes to reduced energy use. If water is heated for cleaning, using less water reduces the amount of heating required. Plants that use less water also reduce the energy required for pump operation.

Maximizing your savings

Factors such as impact, spray distance, flow rate, pressure, rotation speed and coverage all contribute to the equation. A tank cleaning specialist can analyze your needs and help realize the maximum amount of water, chemical and energy savings for your plant's specific applications.

One more point

Automated tank cleaning makes every drop count. That natural resource reduction is a big positive for the plant, environment, community, and your bottom line.

30-SECOND CASE STUDY

FOOD INGREDIENT MANUFACTURER CUTS TANK CLEANING TIME BY 75% AND OFFSETS EQUIPMENT COST IN LESS THAN A WEEK

Problem

A leading producer of spices and seasonings needed to thoroughly clean the interiors of its mixing tanks between batches. Manually cleaning the residue from the blenders with high pressure hoses and brushes took workers an hour or more and produced inconsistent results. The cleaning process was a significant labor expense and the production downtime resulted in lost revenue.

Solution

Automated tank cleaners were installed.

Result

The automated tank cleaning process has saved an estimated CAD$25,000 in labor expense. In addition, cleaning time was reduced from one hour to 20 minutes. This reduction in downtime allows for the production of one additional batch of spices per shift. Together, these factors paid for the investment in tank cleaning equipment in less than one week.

Read the full case study

PUT THE IDEAS FROM THIS WHITE PAPER INTO PRACTICE AT YOUR PLANT

Learn more about a Spraying Systems Co. Sustainability Assessment at

spray.com/Services/Sustainability-Assessment

EFFECTIVENESS WITHOUT COMPROMISES

There's another form of sustainability with automated tank cleaning that food processing plants should consider: sustained effectiveness. The consistent, reliable, repeatable cleaning of tanks, totes, vessels, drums and mixing equipment is a good way to ensure savings and productivity gains year after year.

Manual tank cleaning falls far short of automated tank cleaning in both sustainability and results. Here are four compelling reasons why automated tank cleaning is vastly superior.

1. DRAMATICALLY BETTER CLEANING

Automated tank cleaning equipment optimizes the cleaning process. It is designed for higher impact and better coverage than manual tank cleaning.

2. REPEATABILITY

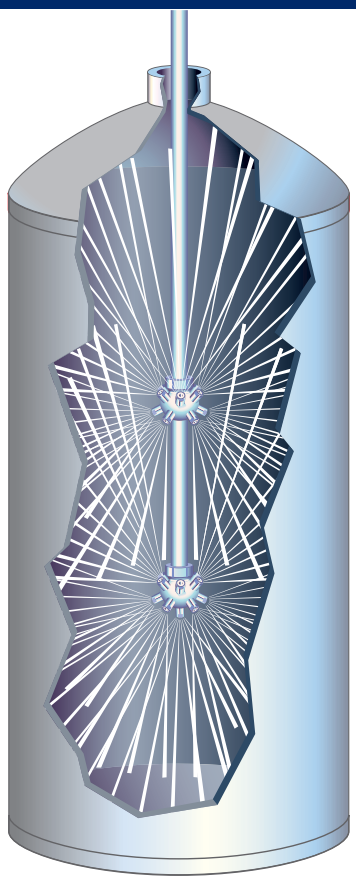
Optimal, consistent cleaning is the goal. Automated tank cleaning is performance-built to accomplish this end. Humans cannot. Human cleaning simply will not produce the same repeatability that automated cleaning ensures.

3. DEPENDABILITY

An automated tank cleaning system never has a bad day or an off shift. The mistakes that are unavoidable in manual cleaning reduce productivity, weaken results and risk wasted product. Automated tank cleaning is dependable, reliable and ready every time.

4. INCREASED UPTIME

Automated tank cleaning dramatically reduces cleaning time while still delivering superior results. Some manufacturers report reductions in cleaning time up to 90%. That gets the tank back into service faster for more uptime, productivity and increased profits.



30-SECOND CASE STUDY

PEANUT BUTTER PRODUCER SAVES MORE THAN US$85,000 PER YEAR WITH AUTOMATED TANK CLEANING

Problem

A food company needed a better way to clean five tanks used for making peanut butter. The 500-gallon (1,893 liter) tanks were cleaned with fill and drain cycles using heated peanut oil. Employees also had to scrub the tanks by hand. Each cleaning cycle wasted approximately 100 gallons (379 liters) of peanut oil. In addition, the method was time consuming and inconsistent.

Solution

Automated tank cleaning was used in the tanks.

Result

Cleaning time for each tank has decreased from two hours to just 30 minutes, enabling an increase in production time. Workers who previously provided manual cleaning have been deployed to other tasks. Peanut oil use and the energy required for heating decreased by 60%. The producer estimates they have saved more than US$85,000 annually and they received payback on the equipment investment in two months.

Read the full case study

INSIDE SAVINGS:
REDUCING OPERATING COSTS

Sustainability initiatives are good for the environment and a company's image. But how do they impact profits?

In the case of automated tank cleaning, the response is that sustainability pays significant dividends in the form of ongoing and predictable savings.

CONTROLLING AND REDUCING EXPENSES

The necessary costs of doing business in food processing are undeniable. Energy consumption, maintenance and labor are essential. Spending too much on them is not.

ENERGY CONSUMPTION

As previously discussed, one of the largest single operating expenses in food processing is energy.

Serious savings: Saving water translates into saving energy and extended pump wear life.

MAINTENANCE

The cost of downtime for equipment maintenance is another ongoing expense. However, delaying maintenance can lead to equipment failures, early replacement and lost production.

Serious savings: With automated tank cleaning maintenance is streamlined and improved. Costs are reduced through decreased downtime and cleaning consistency.

LABOR

Worker productivity is in lockstep with plant profits. Manual tank cleaning is a costly, laborious, and time consuming process.

Serious savings: Automated tank cleaning reduces labor costs immediately and keeps the savings flowing each time tanks, totes, vessels, drums and mixing equipment are cleaned.

30-SECOND CASE STUDY

CANDY MANUFACTURER CLEANS PEANUT ROASTER 16 TIMES FASTER SAVING US$30,000 PER YEAR

Problem

A large candy manufacturer needed a faster, more economical method to clean and sanitize its peanut roaster. The biweekly cleaning process took two workers with handheld spray guns an entire eight-hour shift to complete. In addition to the large labor expense, this cleaning method used too much water. The variability of results and the potential for biological contamination were also areas of concern.

Solution

Sanitary spray balls were installed for automated tank cleaning.

Result

Cleaning and sanitizing time has been reduced dramatically. The cleaning operation is accomplished by one person in less than an hour. Water consumption has been reduced by two thirds, saving about 130,000 gallons (492,000 liters) per year. The volume of sanitizer used has also been greatly reduced. The estimated payback period was four months. The significant reduction in the use of water and sanitizer also enhances the company's ongoing sustainability efforts.

Read the full case study

INSIDE SAFETY:
PROTECTING YOUR WORKERS

Worker safety is always a top priority in food processing. The struggle to maintain productivity levels and ensure safe procedures is a delicate balancing act.

IDENTIFYING THE DANGERS

Manual tank cleaning needlessly exposes workers to a number of inherent safety risks, as this brief list of potential hazards indicates.

- Harsh or dangerous chemicals
- Extremely hot water
- High-pressure hoses
- Risk of explosion in some instances
- PPE requirements, often involving clumsy full-body suits
- Confined spaces
- Slippery, hazardous work environments
- Lengthy cleaning times, which means increased risk exposures

ELIMINATING THE RISKS

It only takes one serious accident to shut a plant down. Manual cleaning exposes workers to hazards and environments that can be avoided.

Automated tank cleaning helps safeguard your workers, your plant and your reputation against the risks posed by manual cleaning. In addition, your workers can have increased productivity and job satisfaction. They can be deployed into other, more rewarding tasks.

30-SECOND CASE STUDY

MANUFACTURER REDUCES WORKER RISK AND SAVES OVER US$75,000 ANNUALLY

Problem

A leading producer of powders needed to thoroughly clean the interior surfaces of its processing vessels. Manually cleaning the powder residue took up to twelve hours. The ribbon blades in the vessel made it a slow process and there were also concerns about worker safety. The cleaning process represented a significant labor expense and the loss of production time.

Solution

Automated tank cleaners were installed.

Result

Automating the cleaning process cut cleaning time by more than 90%. This led to an increase in production time and greater manufacturing flexibility. The labor savings alone amounts to more than US$75,000 annually. Worker risk was eliminated and the equipment cost was recouped in approximately nine months.

Read the full case study

SUMMARY

Food processing plants can transform a necessary maintenance function into a proven efficiency driver with automated tank cleaning.

This cleaning method reduces water, chemical and energy use and improves sustainability. It saves significantly on ongoing maintenance expenses, greatly reduces labor costs and returns tanks into service much more quickly. Automated tank cleaning also protects workers against the unnecessary risks posed by manual cleaning.

For more information on operating more sustainably and profitably, visit www.spray.com/company/sustainability

GET YOUR OWN INSIDE STORY:
SCHEDULE AN EXPERT SUSTAINABILITY ASSESSMENT FOR YOUR PLANT

Put the ideas from this white paper into practice. Learn proven sustainability and risk reduction methods with a complimentary Spraying Systems Co. Sustainability Assessment.*

This program brings cleaning sustainability specialists into your plant to uncover ways to:

- Reduce water, energy and chemical use
- Minimize waste and scrap
- Improve safety

After the assessment, you will receive a comprehensive report including recommendations to reduce waste, improve safety, ROI projections and an implementation plan.

Schedule your assessment at spray.com/Services/Sustainability-Assessment

*Sustainability Assessment is complimentary except travel reimbursement and nominal daily fee for assessment team.

ABOUT SPRAYING SYSTEMS CO.

We help companies around the world reduce water, energy and material use, decrease waste, minimize environmental impact and improve worker safety. Let our spray technology advance your sustainability initiatives.

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Experts in Spray Technology

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