

Grayway

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NEXT GENERATION PORK PROCESSING



WELCOME



Stephen Gray
President &
Chief Executive Officer

Food manufacturing has experienced an upswing in recent years and appears to be continuing this trend moving forward. The protein industry in particular is witnessing monumental changes ranging from growing consumer demand to modern food processing and data reporting practices.

In this issue of the GrayWay, we look at Clemens Food Group, who recently began processing hogs at the company's first greenfield facility in its 122-year history, and how it is shaping the future of the protein industry. We also see how automation capabilities are enabling safer, more efficient food processes.



*Gray practices methods
which protect our environment.*

A NEW STANDARD FOR PORK PROCESSING

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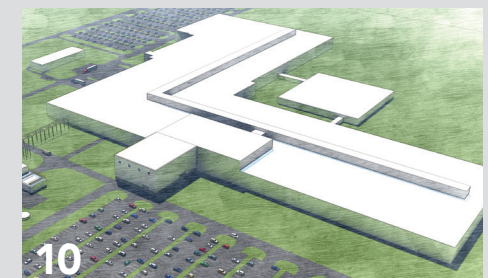
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FEEDING THE WORLD, ONE HOG AT A TIME

Nation's Newest Fresh Pork Processing Facility Realizes Company's Calling to "Feed the World"



Doug Clemens
Chief Executive Officer
Clemens Food Group

WHAT IS THE MOST consumed meat in the world? Beef, right? Perhaps chicken?

The answer is pork, and in a big way. Pork is the most widely-consumed animal protein in the world, and U.S.-produced pork is in strong global demand. According to the United States Department of Agriculture (USDA), nearly a quarter (22.8%) of U.S. pork production goes toward exports, and January-June 2017 pork exports were up by 310.8 million pounds (12.2%) compared to the same period last year. Mexico, the largest international customer for the U.S., accounted for more than half the increase in America's pork exports compared to January-June 2016.



This year is also significant since U.S. pork processing capacity is growing more than any other year in recent history, marked by the September production start for Clemens Food Group's new 650,000 s.f. fresh pork processing plant in Coldwater, Michigan, capable of processing 11,000 hogs per day.

In 1946, after their original plant burned to the ground, the grandfather and two great-uncles of current Clemens CEO Doug Clemens purchased the Hatfield Packing Company in Hatfield, Pennsylvania, where the company is currently

headquartered. What was a 40,000 s.f. plant at the time has expanded through renovations and additions to encompass more than 1.2 million s.f. "With renovation and remodeling on this scale, not everything is ideally where you want it to be," Clemens explains. Being a multi-story facility, efficient product flow is compromised as well.

With the world's appetite for pork growing so strongly, Clemens Food Group had been seeking expansion opportunities for at least the past decade. "About three years ago, we were approached by a



Situated on more than 400-acres, Clemens Food Group will process 11,000 hogs per day which will be sourced through several regional family farms.

group of Michigan pork producers for a feasibility study because Michigan was the only state in the Midwest without a pork processing facility,” Clemens says. Through further dialogue, including Ohio and Indiana pork producers, Clemens decided to locate their first-ever greenfield project site in Coldwater, Michigan, positioned “square in the middle of pork supply coming from 150 miles in any given direction.”

“We are not doing traditional manufacturing of assembling products from individual parts,” Clemens explains. “We’re starting with biological raw material and deconstructing it into parts we can process and sell.” Clemens further explains that the Coldwater plant will be a fresh processing facility. “We will harvest animals, cut and debone into primal pieces, and freeze and ship to Hatfield for further



processing into bacon, chops, sausages and other value-added products. Hatfield has the ovens, smokehouses, slicing lines, and end-consumer production capabilities, while at this time, Coldwater is strictly fresh pork processing.”

Fresh pork harvesting involves four basic “primal” cuts: shoulders (pork shoulder roasts, boneless blade Boston roasts and ground pork for sausage); sides

hogs need to be processed annually,” Clemens says. “That means increased demand for hogs, feedstock, livestock haulers, agricultural equipment, packaging materials – it all cascades down.”

Clemens Food Group defines itself as a vertically coordinated company that encompasses hog farming, production, logistical services and transportation. “By creating a responsive pork production system, we are able to focus on supplying the highest-quality products to our partners via a sustainable system while providing advanced solutions that simplify our partners’ operations.” All this takes place under a long-established set of

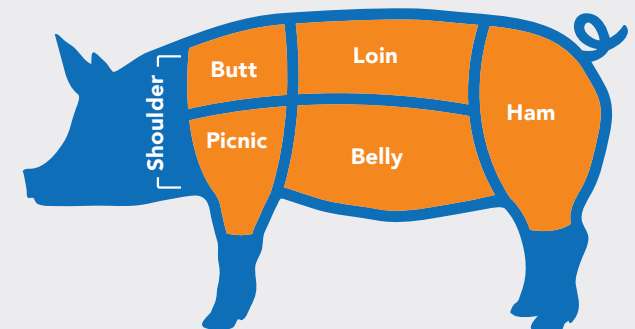
“By creating a responsive pork production system, we are able to focus on supplying the highest-quality products to our partners.”

–Doug Clemens, CEO, Clemens Food Group

(spare ribs, back ribs and pork bellies for bacon); legs (fresh and cured hams); and loins (chops and tenderloins). In Clemens terminology, everything including the oink has a processing purpose. And with the food industry being heavily regulated, process technology, data reporting, efficiency and worker safety were a top priority for the new plant.

The new Coldwater facility is not only poised to contribute globally, but it will also invigorate the local economy. The operation itself is creating 830 full-time jobs, including skilled trades (electricians, plumbers and process engineers), production line, maintenance and sanitation workers. “In addition, 2.6 million

company values of ethics, integrity and stewardship. “We’re grateful to be a part of this,” Clemens says. “We’re called to feed the world.”



AUTOMATION: REDEFINING FOOD PROCESSING

Higher Food Quality,
Improved Worker Safety

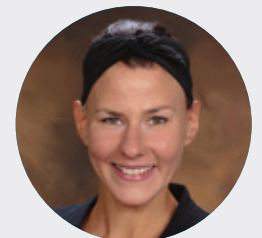
MODERN FOOD PROCESSING PLANTS on the scale of Clemens Food Group's new Michigan facility are pioneering advances in automation for many crucial reasons. Specifically, automation helps standardize and improve processes, which helps increase product throughput, reduce labor costs, establish and maintain elevated quality standards and improve workplace safety. Benefits include meeting accelerated delivery dates, better utilization of capital budgets, improved material flow and a more efficient plant footprint.

Roughly half the respondents to *Food Engineering* magazine's 2017 State of Food Manufacturing survey say automation is once again considered to be the most impactful trend that will affect manufacturing operations over the next five years.

"Processors need to fully understand their operations and gain insights from a floor perspective," points out Debra Schug, editor-in-chief of *Food Engineering* magazine. To do this, capturing and analyzing the correct data is essential. More companies are leveraging cloud technology, as well as employing more Industrial Internet of Things (IIoT) solutions to obtain the kind of real-time data that drives key improvements and optimizes production capabilities. Some 80 percent of survey respondents expect their respective company locations to purchase process control hardware/software in 2017, with PLCs (programmable logic controllers) being the most likely item purchased.

Getting Hip to HIMP

Improved data collection is key to new government reporting guidelines. The Food Safety and Inspection Service (FSIS) of the USDA uses Hazard Analysis and Critical Control Points (HACCP) as a framework for inspecting food processing plants for safety and food quality. As part of a new Modernization of Pork Slaughter rule passed last year, the USDA started a pilot program called HIMP, or the HACCP Inspection Models Project. According to Dan Kovich, deputy director of science and technology at the National Pork Producers Council, "HIMP is an inspection system under which packing plants take greater responsibility for carcass inspection, with FSIS employees ensuring the effectiveness of these activities as well as focusing on other food-safety verification tasks." Currently, five U.S. pork packing producers (including Clemens



Debra Schug
Editor-in-Chief
Food Engineering



Food Group) are participating in a HIMP pilot project. Enactment of a modernization rule will make this system available to all packers.

Whether for reporting purposes or improved process efficiency (or both), automation advances are prevalent throughout the new Coldwater facility. “This is the first greenfield fresh pork processing facility built in this country in the last ten years,” says Doug Clemens proudly. “Any kind of process improvement for higher efficiency or improved safety has been put into this plant.” These include:

- A sophisticated automated storage and retrieval system (AS/RS) that improves material handling and worker safety
- Automated scaling and sorting systems to assure products meet precise weight requirements
- Variable Retention Time Freezer (VRT) incorporated into the freezing process to increase efficiency and production, decreasing the typical meat-freezing process from a three-day waiting period to less than 24 hours – all optimized according to specific product and case sizes
- A patented equilibration cooler system for better control of carcass shrinkage and extended shelf life
- Waterjet cutting for improved processing of pork bellies for more precise cuts and higher yields

Fully automated conveyance equipment was incorporated into Clemens Food Group’s new facility, resulting in improved efficiencies and a higher quality, more consistent product.

Automation not only helps Clemens Food Group with compliance reporting, it also serves a growing need to provide more information on their food to people across many demographics. From local sourcing to antibiotic use, people hungry for information will be satisfied.

THE NEW FACE OF MANUFACTURING

Old-World Craftsmanship Continues Evolving in New Technology Supplier

Frontmtec, a meat-processing automation supplier with world headquarters in Denmark and U.S. headquarters in Kansas City, Missouri, has been working with Clemens Food Group since 1991 in their Pennsylvania operations. But the engineering and technical team responsible for Clemens new fresh pork processing facility in Coldwater, Michigan, is part of a brand new corporate culture.



Dany Lord
VP of Sales
Frontmtec

This is because Frontmtec now includes a number of recognized names in red meat processing that began merging last September and just completed earlier this year. Frontmtec now supplies technology

to the entire meat industry value chain, from carcass grading to slaughter lines, cutting and deboning lines, hygiene and control systems to logistics and packaging, says Dany Lord, Frontmtec vice president of sales.

While the goal remains to be a full-line processing supplier from concept to implementation, “every project is unique,” Lord says. Frontmtec assembles a diverse team of engineers, programmers and technicians for each one. “At heart, we are craftsmen with years of expertise, and we take responsibility for delivering customized targeted automation technology that serves our customers. Quality, dedication, reliability and personal service run in our DNA.”

Automated solutions at the Coldwater facility include steam scalding, automatic splitting saws, automatic loin puller and a waterjet pork belly trimmer. “This plant at 11,000 hogs per day, is setting new standards for pork processing,” he says. “World pork processing facilities have a new reference point.”

FRONTMATEC

GRAYWAY

GRAY... WE'RE BUILDING

GRAY... WE'RE BUILDING

PRATT & WHITNEY

COLUMBUS, GA.

Pratt & Whitney, a division of United Technologies Corp., is a world leader in the design, manufacture and service of aircraft engines and auxiliary power units. Due to growing demand, the company selected Gray Construction to design and build a 23,127 s.f. isothermal capacity expansion to its Columbus, Georgia facility which will manufacture engine turbine disks and compressor rotors.

The building and infrastructure systems will be complete in August 2018.

Gray will also design and build multiple expansions on the Columbus campus for completion this December. Spencer Bristol Engineering, which became a Gray company in April of 2017, has worked with Pratt & Whitney since 1995 and will help execute the mechanical and electrical engineering on these projects.



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