

F FOOD & BEVERAGE TECHNOLOGY REVIEW

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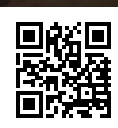

FOOD
SUSTAINABILITY
EDITION

STEVE BEERS,
CFO

FoodDefend®

A New Realm in Food security

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By Kevin Lobo

Tristram Stuart, an award-winning author and a global advocate for the prevention of food waste, once said, “Cutting food waste is a delicious way of saving money, helping to feed the world and protect the planet.”

While Stuart’s insightful words portray few of the many tangible benefits of nipping food wastage in the bud, the problem of food loss and wastage has only grown more intense with time. According to the Food and Agriculture Organization (FAO), losses and waste in fruits

and vegetables is the highest category of losses among all types of foods—with up to 60 percent of all fruits and vegetables making their way to the landfill.

Food waste occurs across the entire food supply chain, affecting every stakeholder—from the producer to the consumer. Fruits and vegetables suppliers and growers agree there is nothing worse than having to dispose of a large part of their produce due to spoilage by foodborne pathogens and other microbes. “Imperfect” produce is often

turned away by grocery stores even before making it to the shelves. Customers are conditioned to pick fresh, unblemished veggies and fruits from the lot, and the rest often goes to animal feeds or waste straightaway. Given that food loss significantly impacts the environment, contributing to increased carbon footprint and wasted water resources, most brands now relate food waste with global climate change concerns and declining food security. On top of this, in today’s pandemic-afflicted world, where food companies are

scrambling to mitigate the challenges arising in their supply chain, consumer expectations around food safety and quality continue to rise. Nobody understands these challenges better than FoodDefend®.

Using proprietary antimicrobial interventions and cleaners, FoodDefend® is redefining how companies protect and preserve food. The company is transforming the way food production, processing, handling, and retail operations control food spoilage and enhance food safety. “We are driven by the mission to provide post-harvest food interventions for fresh or processed produce, grains and nuts to increase the shelf life and improve the safety of food from farm to fork,” says Steve Beers, CFO of FoodDefend®. “Food manufacturers and processors need to consider food spoilage risks at all phases of the production and distribution processes to reduce inventory shrinkage. Additionally, longer shelf life is important and valued by consumers, which increases product sales and brand image,” he adds. With its scalable and proprietary chemistry, FoodDefend® solves problems for people across the entire value chain, from packers to grocers to retail consumers.

Spoilage and Decay Control Made Easy
FoodDefend’s® FruitGard® (FG) products, based on proprietary release chlorine dioxide chemistry, are cost-effective, sustainable, and safe in the workplace. Chlorine dioxide is a well-studied broadspectrum antimicrobial that FoodDefend® takes to a new level. FG antimicrobial treatments have been scientifically proven to work far better than traditional liquid sanitizers and do so without leaving hazardous residues. Surface wounds, stem scars, rough and delicate produce surfaces all benefit from FruitGard®



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treatments. As a dry fumigant, FG can be deployed in many unit operations, cold storage, forced air coolers, shipping containers, and refer trucks, et al. All are convenient unit operations for bulk treatment. And FG doesn’t stop there; FruitGard® product formats like sachets or granules allow for unique applications in package bins, bags, or boxes. FG is EPA-approved for application to raw agricultural commodities (potato, tomato, and cantaloupe) and FDA approved for use on all processed fruits, vegetables, and nuts.
With its ingenious controlled-release antimicrobial solution, FoodDefend® helps customers design custom intervention strategies to reduce produce loss at the most critical or

convenient places in the distribution channel. FoodDefend® can even provide food security products for use in packages or home refrigerators. “We have a chemical fumigant that can be delivered in a variety of formats to address microbial spoilage issues broadly. With one application, we address both food safety and security issues. And FG does all this without leaving pesticidal residues. It’s really a sustainable green intervention,” informs Beers.
Notably, the story of food waste today is not only one about profitability but, as importantly, one impacting a brand’s carbon footprint. And this extends to consumers, too, as food waste is notably most severe at the

consumer level. “Ultimately, you can take FG food interventions right to your refrigerator. Our solutions for the retail consumer level are uniquely interesting because consumers are awakening to their impact and in some respects more readily realize the value of products that keep produce fresher for longer,” explains Beers.

Bolstering Food Safety with Effective Solutions
FoodDefend’s® core values are fundamentally based on improving human and animal health. This mission extends beyond the direct treatment of perishables to other needs for improved surface cleaning, water disinfection, and air cleaning. FoodDefend® does

it all to make the quality of life better and food safer. The company also offers Z-Series™ CoilCleaner™ and air intervention products for actively cleaning hard or porous surfaces and improving air quality. From evaporator systems, coolers, freezers to food storage units—all are ideal candidates for treatment with Z-Series™ products. The company also offers EPA-approved Z Series® Water Treatment Packs and is doing leading research for disinfecting agricultural water (irrigation, freeze protection, spray application, etc.) and packhouse flume or wash water. These packs are portable, simple-to-use, and require no special equipment to make them effective in the field or remote processing locations. This easy-to-use concentrate product helps companies reduce their product packaging waste footprint as they do not have to handle or dispose of drums or totes associated with the storage of gallons of liquid sanitizers like bleach or per acetic acid.
“Another dimension worth noting is the wide range of FoodDefend® product formats. This is a big differentiator for our brand,” notes Beers. For instance, FoodDefend® offers scalable products for large produce operations dealing with bulk commodities, and at the same time, the company can even deliver the product in a small sachet to be used in corrugated boxes, retail or consumer packaging. These products can be designed to release chlorine dioxide at very low levels over hours to months.

Where Excellence meets Quality
FoodDefend’s® team has decades of experience in designing food safety interventions and routinely provides recommendations on how the company’s products can be effectively deployed. The company’s commercial success in the potato industry further cements its exemplary capabilities. FoodDefend® touts its patented FG product as a longer-lasting and more effective way



to treat potatoes in storage for decay-causing pathogens such as pythium leak, bacterial soft rot, late blight, fusarium dry rot, and silver scurf. These problems can often be effectively controlled by continuous slow FG release in a pile. Moreover, secondary bacterial soft rot “hot spots” in piled tubers is a persistent issue in the potato market. It demands “remediation-type” products to quickly stop the rot from spreading and begin pile drying. FG products offer curative and preventative treatment strategies that deliver impeccable performance as well as cost-efficiency. “In the first couple of years, most of our product sales were traditional—we waited until the problem occurred and stopped the rot, but not before some potatoes were lost. However, in the last year, we shifted our focus to prevention and have documented significant protection even when harvest conditions were very poor,” shares Beers.
In one instance, FoodDefend® was approached by a company struggling with seed interventions and storage



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issues. Their problems focused on mold and fungi growth in storage that reduced the market value of their crop. Whether treating their product before loading the bins, inside the bins, or before selling it to the customer, all three present options for interventions but essentially required different chemical dosing strategies, duration of treatments, and amount of chemistry for these treatments. To this end, FoodDefend® supported the client in all these scenarios and helped them be successful by validating the chemistry for their different needs. “This is a great example of how our applied expertise helps customers find the right products so that they get the solution they are looking for to ensure utmost results and safety. We want to position ourselves to help our customers use our products to the highest efficacy,” states Beers.

Toward a Promising Future

For the past 12 years, FoodDefend® has done a tremendous amount of collaborative research with groups like the USDA and several leading agricultural universities, publishing many papers and validating the technology. “We’ve developed a lot of the know-how science that goes along with these products, equipping FoodDefend® to have a solution set for customers pretty much on any commodity. Our knowledge in this space is a major differentiator that steers us ahead of the competition,” asserts Beers.

Forging ahead, FoodDefend® is on the cusp of massively expanding its products and awaiting regulatory approvals from the EPA to cover a wide range of crop groups. The company plans to add over ten crop groups, covering the entire breadth of produce consumers find in a grocery store. As such, FoodDefend® is set to witness an increased demand for its antimicrobial interventions and other food safety products across the globe.

Notably, the impact of FoodDefend’s® technology is even more significant in developing economies like Africa, South America, or even countries like India that often lack the infrastructure to support emerging technologies and have smaller farming units. All of the company’s products are designed to perform effectively in environments with little or no access to technology or even electricity. “We are particularly proud of this extended value of our technology as we can work across communities to solve problems with food security and safety. In doing so, we increase the economic footprint of agriculture in those countries, and more importantly, help people get quality food,” notes Beers. 

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*The annual listing of 10 companies that are at the
forefront of tackling customer challenges*