

The Edible Coating That Cuts Food Waste

Anthony Zografos on Akorn Technology winning the UAE FoodTech Challenge and how edible coatings for fruits and vegetables can cut food waste

By **Shreya Asopa**

California-based Akorn Technology has recently won the UAE FoodTech Challenge, tackling food waste with its 100% natural, edible coatings for fruits and vegetables. Named among four global winners, the startup was recognized during Abu Dhabi Sustainability Week for its innovation in reducing food waste.

The competition was organised by the International Affairs Office at the UAE Presidential Court and Tamkeen, in partnership with the Gates Foundation, Ne'ma (the UAE's National Food Loss and Waste Initiative), Silal, a leading UAE agri-food company, and other key partners. In its third edition, ten finalists were selected from a global pool of more than 1,200 entries spanning 113 countries to pitch their solutions to an international judging panel.

Offering its largest prize to date, a \$2 million award, the competition was designed to help winners make tangible progress in scaling their start-ups. While placing strong emphasis on the UAE market, it also provides clear pathways to generate impact across markets in the Global South.

Akorn Technology's edible coating combines a vegetable protein to slow ripening, a natural wax to reduce moisture loss, and vegetable oil to maintain color, providing a natural alternative to chemical treatments and plastic packaging.

Anthony Zografos, founder and CEO



The UAE FoodTech Challenge is not about innovation for innovation's sake — it is about solutions that can withstand real-world pressure

at Akorn Technology, shares how this innovation could make a measurable impact in reducing food waste across global supply chains.

Akorn recently won the UAE FoodTech Challenge Award. What does this recognition mean for Akorn at this stage of your journey?

For us, this recognition is huge because it signals trust. The UAE FoodTech Challenge is not just about innovation for innovation's sake; it is about solutions that can withstand real-world pressure: heat, long supply chains, imports, and high expectations for food security. At this stage, it helps us move faster by opening doors and aligning stakeholders who do not naturally move in sync.

How was the idea for Akorn born, and what moment made you realize that edible coatings were needed instead of traditional chemical-based solutions?

The idea really came together during COVID. I was drawing on my earlier experience working at NASA, trying to

figure out how to supply fresh fruits and vegetables to astronauts during long missions. I realized that food loss and waste directly affected the availability of fresh produce worldwide, causing not only economic losses but also harming health and nutrition, particularly for less privileged populations.

I also knew that chemical treatments were not going to be an acceptable solution long term, and I set out to develop all-natural, plant-derived treatments. During the COVID shutdown, many labs around the world were idle, and many researchers were really eager to stay productive. So I formed a global collaboration, developing, for example, solutions for pineapple in Ecuador, mango in Brazil, and avocado in Peru. Everyone was excited to develop natural solutions to the food waste problem, and I believe we were successful in the end.

Let's talk about development hurdles. What were the biggest challenges during the early stages of developing Akorn's protein-based coating?

The science itself was not the hardest part. The real challenge was alignment- getting producers, importers, retailers, foodservice operators, and consumers all comfortable moving together. Everyone experiences food waste differently, so incentives are not always aligned. That is why a government-supported initiative like the UAE FoodTech Challenge is so powerful: it creates a neutral platform where everyone can rally around a common objective rather than pull in different directions.

Moving on to results, which types of produce have shown the most

dramatic shelf-life improvements with your coating, and why?

We see the greatest impact with produce that is highly perishable and sensitive to moisture loss or decay, including mangoes, avocados, papayas, pears, apples, stone fruit, sweet potatoes, cucumbers, and more. Current solutions involve either chemical treatments or plastic packaging, and we think neither is a good alternative. Natural solutions that preserve the wholesomeness of fresh produce without burdening the world with more plastic are the way to go.

From a technical perspective, how do Akorn's edible coatings alter produce respiration rates, ethylene sensitivity, and moisture migration?

The coating forms a very thin, edible layer that acts like a regulator rather than a barrier. It slows gas exchange just enough to reduce respiration and ethylene-driven ripening, while also limiting moisture loss. The goal is not to stop natural processes, it is to slow them down so that produce stays in its optimal window longer.

Considering foodservice impacts, how can extended shelf life change ordering frequency, inventory turnover, and waste management in hotels and large foodservice operations?

When produce lasts longer, everything downstream becomes more flexible. Kitchens can order less frequently, inventory becomes easier to manage, and last-minute waste drops significantly. That means fewer emergency deliveries, lower labor stress, and better cost control, all without changing menus or workflows.

UAE distributors approached Akorn due to high spoilage rates in stores and shipping containers. What made losses so pronounced, and how does your technology help?

In the UAE, you are dealing with long import routes, high ambient temperatures, and inevitable cold-chain



Photo credit: FoodTech Challenge



Sustainability is not just about good intentions — it has to fit into existing systems

interruptions. Even short exposure to heat can dramatically shorten shelf life. Our coating helps improve tolerance to those stress points by reducing dehydration and slowing metabolic decline, giving distributors and retailers more breathing room.

Speaking on sustainability, how can extended produce life support hotel ESG reporting and sustainability certifications?

Food waste reduction is one of the most tangible ESG wins in hospitality. Longer shelf life means less discarded food, fewer deliveries, and lower embedded emissions. These are things hotels can actually measure and report, which makes sustainability commitments far more concrete.

What does success look like for Akorn

over the next two to three years?

Success looks like adoption at scale, not just pilots, but routine use across supply chains. It also means continuing to tailor our technology for challenging environments, such as hot, arid regions, and proving that waste reduction and commercial performance need not be trade-offs.

What message would you share with other innovators working on sustainable food solutions?

Start with a problem, not a solution. Good ideas do not work in agriculture unless they solve real problems and work within the processes and supply chains that are in place. Sustainability is not just about good intentions; it is about fitting into existing systems and making life easier for the people using your solution. If adoption is hard, impact will be limited.

Finally, if you could eliminate one specific point of food waste in the global supply chain, what would it be and why?

Post-harvest loss, without question. This is where massive amounts of food disappear before consumers ever see it. If you can stabilize food early in the supply chain, every downstream player benefits, from farmers to retailers to consumers. ■