

From Chemist to Food-Tech CEO

Aidan Mouat credits “dumb luck” for setting him on a path from chemist to CEO. Mouat has for the past six years run Hazel Technologies, which invented a small packet of chemicals to keep food fresh longer before reaching grocers.

If your store shelves are stocked year-round, you might wonder why these pouches are useful in the first place. What you don't see is what gets thrown away. The reality is that the world produces “a colossal amount of food waste,” Mouat says. “We have a food system that is focused very heavily on production, instead of efficiency.” So, Mouat and his company co-founders devised a way to help prevent produce spoilage on its way from farm to store.

Mouat met his company co-founders in an entrepreneurship class during graduate school, among a group of passionate students ready to contribute unique strengths to new projects. One co-founder, Adam Preslar, had expertise in biochemistry; Mouat's was in materials science.

The two wanted to tackle food waste using their chemistry expertise, and their answer was, in a word, ethylene. Ethylene is a small molecule that fruits and vegetables absorb and emit into the air. Even after harvest, crops speed or slow their ripening based on ethylene levels.

Mouat and Preslar realized that by controlling how food reacts to ethylene, they could control ripening.



PHOTO PROVIDED BY AIDAN MOUAT

AIDAN MOUAT

B.S./M.S.: Chemistry, Emory University

Ph.D.: Chemistry, Northwestern University

WHAT HE DOES NOW: Co-Founder and CEO of Hazel Technologies

The entrepreneurs just needed to find the right chemical to do this. In their search, a compound called 1-methylcyclopropene (1-MCP) stood out. As luck would have it, the patent on 1-MCP had recently expired, meaning the newly founded company would be able to use it in a new product. Hazel pounced on the opportunity. The company designed and produced small sachets to

release 1-MCP to interfere with ethylene metabolism in produce during shipment.

Today, Mouat's company helps keep billions of pounds of food fresh annually. He readily acknowledges his luck in creating a successful business, but is quick to point out the value of hard work: “Fortune favors the prepared.” —Max G. Levy

This interview with Mouat was edited for brevity and clarity.

Could you put the amount of food waste into perspective?

Every year about a third of all food produced goes to waste, rather than being eaten. It's a fairly tremendous consequence—economically, socially, and also environmentally. About 8 to 10% of the world greenhouse gas emissions bill is from food waste.

How did your team come up with the idea of controlling ethylene to fight food waste?

Adam comes along and says, “Hey, do you know anything about the ethylene exogenous pathway in produce respiration?” I said, “Not really.” He explained that there are small molecules, including ethylene, control important bio-signaling pathways, which was fascinating to me. And we already have masterful ways of manipulating these small molecules using materials chemistry.

What was your experience like in the entrepreneurship class?

The hilarity of the situation is that I actually tried to get out of the program. I was like “I'm not an entrepreneur, this isn't going to help me.” I sent Jeff Henderson, who ran the program at the time, an email saying “Can I get out of this entirely? I don't want to do this right in the middle of a bunch of research.” And he said, “Well, just try it.”

That worked out pretty well.

Yeah! Pure coincidence. We were then able to recruit the other people from the program. We essentially had an applicant pool of 40 people to help build out this enterprise.

How does this technology affect the food-supply chain?

The thing I'm most excited about is the unique ability that we have to promote biodiversity—having a technological basis to grow and sell diverse categories of food that we otherwise wouldn't be able to ship long distances.

Could you give an example of how your technology can promote biodiversity?

Bananas are the best example. The banana is basically not going to exist in 10 years because of the amount of disease that's affecting the mono-crop that we've created. We can actually help stymie those problems. If you can make every other species of banana or avocado, as another example, last longer—get anywhere in the world and have enough shelf-life—then there's no reason that a consumer can't pick one over the other. Having more types of a given crop minimizes vulnerability to disease, and that's what helps promote biodiversity.