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Headline: From fighting diabetes to food waste, start-ups cook up new ideas for food

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Alchemy Foodtech at the Food Industry Asia's Food for the Future Summit 2018. (Photo: Food Industry Asia, Alchemy Foodtech)

SINGAPORE: Affecting more than 420 million people globally, diabetes has been described as one of the world's fastest growing chronic diseases and for Alan Phua, it is one that he lost both his grandmothers to.

So when Verleen Goh, his business partner and a trained food scientist, suggested developing a product that's not only diabetes-friendly but can also help with prevention, he agreed.

The product they envisioned will make starchy white rice "healthier" by lowering its glycemic index (GI), which is a measure of how a carbohydrate-containing food raises blood glucose level. White rice, a staple of meals here in Singapore and the rest of Asia, has a high GI value that is deemed unhealthy for diabetics or those trying to keep their blood sugar at a healthy level.

After three years of research and development, the founders of Alchemy Foodtech have turned that idea into reality.

Their plant-based ingredient blend, shaped like rice grains, can be added into a regular sack of white rice to lower the GI content to that of brown rice. In its powder form, it can also be added to other refined carbohydrate staples, like bread and noodles, without comprising the taste, colour and texture.

For this product, Mr Phua and Ms Goh won the top prize at a start-up competition organised by the Enterprise Singapore last year.

"People can continue consuming their favourite carbohydrate staples but not have dangerous spikes in blood glucose levels after that."

Citing statistics from the World Health Organisation on how more than 90 per cent of patients suffer from Type 2 diabetes – the type that is not genetic and largely preventable by changing lifestyle habits – Mr Phua added that the application of technology to food can play a key role in combating diabetes.

"We want to fight the disease with innovation," he said.

It is a similar motivation for the makers of Callery's – a local ice cream brand that prides itself for tasting "as good as the real deal" despite cutting calories and sugar levels by about two-thirds.

"I've seen how hard it is to find good-tasting food that is safe for diabetics," said Mr Ow Yau Png, co-founder of Hoow Foods, while referring to the frustration some of his family members have had.

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“It is even harder if you are a sweet tooth and it’s sad to see your loved ones being deprived of things they have always enjoyed. But it doesn’t have to be this way and that is the market gap we want to fill.”

For one and a half years, the team experimented with the replacement of sugar and fats with novel ingredients approved by the Agri-Food and Veterinary Authority (AVA). This includes erythritol, a zero-calorie natural sweetener found in fruits and vegetables.

The research and development process took longer than expected as it was difficult to source for these ingredients and not compromise on taste.

But its efforts paid off as almost 4,000 tubs of the guilt-free ice cream range have been sold since its launch four months ago, said Mr Ow.

“For a brand that’s new to the market, we think this is a good number and it shows how consumers crave for a low-sugar, low-calorie product that has a taste they are used to.”

Moving forward, the home-grown start-up is looking to come up with more ice cream flavours and reformulate other indulgent food. Using the proprietary tech platform that it has already built up, it believes it can do so in a faster and cheaper manner.

BREWING APPETITE

Alchemy Foodtech and Hoow Foods make up a new breed of start-ups in Singapore’s food tech industry, which unlike the delivery start-ups that have long dominated the local scene, focus on bringing innovation to food on the table.

This mirrors a trend that has been brewing in other markets, such as the United States and Israel, with the rise of start-ups like US plant-based meat maker Impossible Foods, noted Sirius Venture Capital’s founder and managing director Eugene Wong.

“The easiest pain point to solve was delivery and that took off. Those in the industry are now looking at other areas that hold similar disruption potential, and that’s food itself given the growing awareness about the issues of obesity and illnesses, environment degradation and sustainability.

“Now that there’s smarter tech like big data and artificial intelligence, can there be a better way to eat?”

In Singapore, apart from making healthier or cleaner food, some entrepreneurs here have also set their sights on tackling the problem of food wastage.

SinFooTech, for instance, has come up with a way to turn soy whey – excess water generated from the production of tofu which is often discarded – into an alcoholic beverage.

Touted as a first in the world, the unexpected creation came about when co-founder Chua Jian Yong noticed large amounts of soy whey being discarded by tofu makers around the world. In Singapore alone, SinFooTech estimates that nearly 3 tonnes of the by-product is thrown away on a daily basis.

Given that soy whey contains high levels of calcium and soya nutrients, the PhD student from the National University of Singapore’s (NUS) food science and technology department thought it was a waste and began mulling how the liquid can be “upcycled”.

The end result is Sachi – a light yellow-coloured beverage with an alcohol content of seven per cent and a tinge of fruity flavour. SinFooTech, which decided to spin off from NUS last year, is applying for

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relevant licenses so that it can conduct experiments at bigger volumes, and hopefully launch the product by the end of the year.

It is also looking to develop other soy whey-based beverages now that its proprietary fermentation technology has “upcycled the by-product into a base ingredient” and yields zero waste, said co-founder Jonathan Ng. “If we use 10 litres of soy whey, we can create 10 litres of Sachi.”

With that, it believes that its technology can help to tackle the issue of wastage during food production.

“We want to focus on extracting value from these food processing by-products that are usually discarded,” said Mr Ng. “In doing so, we can produce more from the same resources, reduce environmental footprint and in the longer run, improve food security.”

VCS SAY BON APPETIT, BUT WILL CONSUMERS BITE?

With more start-ups jumping on the food tech bandwagon, the industry is seeing “encouraging” growth signs.

“I think this growth spurt is only starting. We are only seeing local start-ups for now but what can happen in the next few years is the entry of foreign entrepreneurs. If we can see that, the growth in the ecosystem and exchange of ideas can help to produce real game-changing innovation.” said Mr Wong from Sirius Venture Capital.

Temasek-backed Impossible Foods announced on Wednesday (Jan 9) that it is eyeing global expansion, with plans to launch its new recipe here within several months.

Mr Wong added that private investors are also starting to take notice of Singapore.

“One of the challenges thus far has been the lack of capital but I think this will change,” he told Channel NewsAsia, noting that a couple of overseas investors are looking to set up offices here.

Combined together with funds from the public sector, Mr Wong reckons that the amount of investments into the local food tech scene could grow by “10 times over the next two to three years”.

Start-ups are also receiving training and support from home-grown businesses. SinFooTech, for one, is among the six start-ups that have joined Innovate360 – Singapore’s first food incubator set up by sugar manufacturing and trading firm Cheng Yew Heng Candy Factory.

For Alchemy Foodtech, it received a “major confidence boost” last September when it secured a seven-digit investment in a pre-series A round led by Heritas Capital Management and Seeds Capital, the investment arm of Enterprise Singapore.

“The problem we had all along was to convince people that food tech was a thing, and that our product is considered deep tech,” recalled Ms Goh. “But with the rise of food tech, we do see more funds taking an interest in start-ups like us.”

The investment will allow Alchemy Foodtech to finally have its own lab and equipment. Prior to this, it was working out of Ms Goh’s alma mater, NUS, and partnered a firm in Europe when it comes to research equipment and manufacturing work.

Channel NewsAsia understands that another home-grown start-up Life3 Biotech, which develops plant-based protein, is also close to concluding its first funding round.

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Nevertheless, start-ups and observers stress that the local food tech scene remains in the infancy stage, with remaining challenges such as the lack of talent.

Said Mr Ow: "We definitely need more food scientists here who are driven to change food and nutrition."

Players in the industry will also need to strategise how to get their innovation out of the labs and onto dining tables, observers said.

The founders of Alchemy Foodtech said they are already in talks with several established food manufacturers to do so, and are hopeful that consumers will bite.

"Food manufacturers have their own research teams but they may be more focused on developing new flavours or textures. With our specialisation in lowering GI, we are in a good position to help manufacturers come up with healthier alternatives faster," said Ms Goh.

"Feedback that we got from our studies show that people don't find a taste difference when our product is added. Taste is crucial in getting acceptance and we think consumers who want the health benefits will accept our product."

Source: CNA/sk