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The new 'protein' diet

Singapore plays a crucial role in the burgeoning alternative protein landscape. Find out who the main players are and what's next on the menu.

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by

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IN the last few years, we've seen the rise of juicy, bloody hamburger patties made not by your favourite burger purveyor but the likes of Impossible Foods and Beyond Meats - the first companies to take us on the journey of plant-based 'meat'. While they were hailed for their uncanny resemblance to, and - arguably - taste of the real thing, other alternative protein players have since emerged. Since early 2021, a

host of innovative plant-based food products have been rolled out by various food tech companies; a large number of them are based in Singapore.

Jostling for market share

The global plant-based protein market size in 2020 was US\$10.3 billion (S\$13.6 billion) in 2020. This is projected to grow to US\$14.5 billion by 2025, according to ReportLinker, a market research group. With such projections, producers are jostling with each other to unveil their latest innovation.

In January 2021, Singapore startup Karana launched its new product - pork made from young jackfruit - and is marketing it as the first whole plant-based 'meat' product manufactured in Singapore. In March, Next Gen Foods launched TiNDLE 'chicken' made from plants (main ingredients include water, soy, sunflower oil, and coconut fat).

Singapore-headquartered supply chain company Agrocorp also launched its plant-based foods brand, HerbYvore, in April. Its first product, Pea Paneer (soft cheese), is made primarily with pea protein from Canada. The company also specialises in agricultural commodities and food products such as wheat, soybeans, pulses, nuts, and rice.

From April 20, San Francisco-based Eat Just partnered with foodpanda to roll out for the first time, home delivery of GOOD Meat cultured chicken. It obtained approval to sell lab-grown chicken in Singapore in December 2020, and now offers boxed meals for delivery to selected areas.

In the restaurant scene, Tokyo-based food tech startup Next Meats, which focuses on Japanese-style alternative meat products, recently launched its plant-based yakiniku at Singapore's Aburi-EN, a casual Japanese grill restaurant chain. Its kalbi (boneless short rib) is made with soybean proteins, sans chemical additives. For dessert, there's all-natural vegan ice cream by Kind Kones, originally from Malaysia. And, by 2022, homegrown start-up Float Foods expects to have people frying sunny-side up, plant-based 'eggs'.

Cell-based or cultured meat producers are also expected to move out of R&D phase and commercialise in the near future. By 2022, cell-based meat company Shiok Meats plans to roll out "delicious, clean, sustainable, and healthy" shrimp, crab and lobster, by harvesting crustacean cells grown in nutrient-rich conditions. Likewise, Singapore- and San Francisco-based biotech startup TurtleTree Labs is the world's first company to use a cell-based method to create milk and milk components.

The case for plant-based food

Singapore's "30 by 30" goal of producing 30 per cent of the country's food needs by 2030 is top of mind for locally-based food tech companies. Food security concerns caused by the pandemic have also

created a sense of urgency to embrace alternative proteins.

"Sustainability, hygiene and nutrition are some of the most urgent priorities in our food supply chain," says Vishal Vijay, Agrocrop's director of strategic investment. "The world has recently experienced a slew of epidemics and pandemics borne out of the over-reliance on the meat industry. Adopting alternative proteins is critical to reduce this reliance."

Karana co-founder Daniel Riegler concurs. "The growing awareness of the impact of industrial animal agriculture on our environment, human health, social justice issues, and of course animal welfare means that interest in plant-based products will continue to grow, but the reality is we don't have a choice. Climate change is already impacting food production; weather patterns are changing, water resources are limited, and soil conditions are worsening. We have become very used to eating whatever we want whenever we want but that is really not sustainable even in the mid-term so if we are not able to moderate how we consume, nature will do it for us."

Float Foods' CEO Vinita Choolani adds: "We consume two billion eggs annually in Singapore. There is no reason why we cannot complement the local egg supply with nutrient-dense, plant-based eggs that taste, smell and look like chicken eggs. This way, we give consumers the choice - whether to eat chicken eggs or opt for substitutes where they can't really tell the difference. We want to be able to meet consumer's expectations where they can continue to enjoy their favourite food experience even when choosing to go plant-based."

But between plant-based and cell-based, Andrew Ive, founder of Big Idea Ventures (BIV), hybrid venture firm with an accelerator programme in Singapore and New York, picks the latter as the longer-term solution. BIV invested in inventive plant-based and cell-based

alternative proteins for its first fund, of US\$50 million (the New Protein Fund was rolled out in 2019). They include Singapore's ShioK Meats and Karana.

"In Singapore, 95 per cent of the food consumed every day is imported. In a crisis like Covid or worse, it won't take long for Singapore's neighbours to close the borders," says Mr Ive. "The answer in the long term is cell because for plant-based you still need the inputs. You need the core ingredient like pea protein or wheat, and you need to get them from outside. And, if you can't get the ingredient, plant-based isn't going to work either."

Singapore's role

Singapore has been a magnet for food tech companies. Mr Ive says that, when given a choice, many of the companies they've invested in want to build their headquarters in Singapore.

"The Singapore government is very supportive of food innovation and improving food security. They have a long-term plan, and they are prepared to invest and bring the right people together. They have an ecosystem approach - and encourage its development. We appreciate being right in the middle of this ecosystem," he adds.

Mr Riegler also believes that given the level of IP protection, the business climate, and the addressable market in Asia-Pacific, Singapore should become a major player. "Especially as larger food companies continue to invest here and the resources available to startups increase."

What's good about alt-proteins

While the jury is still out about how healthy these 'mock' meats compared to eating whole foods, food tech companies insist that their products contain all the nutrients you need.

Jean Madden, Next Gen's chief marketing officer, says: "Plant-based meats are no longer a niche. It is now embraced by the mainstream meat lover and flexitarian." She adds: "From a nutritional standpoint, TiNDLE is made with only nine ingredients - delivering 17g of protein per 100g." The non-GMO product has no hormones, antibiotics, or cholesterol. TiNDLE has also been certified by the Health Promotion board as a healthier choice option, containing less saturated fat and sodium than other plant-based alternatives.

"HerbYvore's products are unique in that they focus on the dairy and lacto-ovo space whereas most others are in meat alternatives," says Mr Vijay. We're also focusing on products more suited for the Asian palate whereas most of the established brands are catering to Western palates." Nutrient-wise, Pea Paneer has 30 per cent less fat and 30 per cent more calcium than dairy cheese and has 50 per cent more protein than tofu.

Float Foods Ms Choolani says: "Our plant-based eggs are already cholesterol, hormone, antibiotic and residue-free. We are working on our R&D to develop a plant-based egg substitute that is equivalent if not more nutritious than a chicken egg."

Meanwhile, Karana uses proprietary processing technology to enhance the texture of ingredients, without chemicals or heavy processing. Mr Riegler shares that Karana pork focuses on crops like jackfruit (from Sri Lanka), that have not been effectively commercialised.

Where to find them?

From retail to restaurants and now home delivery, alternative proteins meals abound. Karana is available at a number of dining establishments including Candlenut, Butcher Boy, Atout and Grain Traders. Its products will be available for retail later in the year. "We're launching our ready-to-cook dim sum line this year, developing a whole range of convenience focused whole-plant based products, as well as working with new ingredients and types of 'meat,'" says Mr Riegler.

Open Farm Community uses Karana's meat alternative for its Sloppy Polo (braised jackfruit (think: pulled pork) stuffed in a bun) and Braised Local Eggplant with cashew and wild pepper. "We use it for our eggplant dish to give a textural boost, coupled with fermented black bean, to create a 'meaty' and umami-heavy dish," says head chef Oliver Truesdale Jutras, who likes that the product is easy to use and contains "immediately recognisable" ingredients, instead of being overly synthetic and processed.

Currently, TiNDLE is being served at 33 F&B outlets including 28 HongKong Street, ADDA, Gattopardo, Levant, The Market Grill and Three Buns. The product is not available for retail yet. Ms Madden says that the company sought input from professional chefs about taste, texture and cooking methods to help them improve the product.

Daniele Sperindio, group executive chef of ilLido Group, who uses TiNDLE at Levant says: "It was rather 'natural' and easy when it came to creating the TiNDLE chicken dish. The texture is relatively similar to cooked chicken." In line with Levant's mezze-style menu that draws influences from Europe and Middle East, the chef took the classic Manakish, also known as the 'Levantine Pizza', and gave it a twist. "It has a toothsome bite from the TiNDLE chicken, and is paired with pita bread," he shares.

HerbYvore's Pea Paneer is already available for retail at FairPrice Finest stores and other online grocers. It's also been launched in restaurants such as Yantra, Kailash Parbat and Rang Mahal. Mr Vijay adds that in the near future, HerbYvore is planning to launch flavoured, marinated and melting cheese as well as ice cream and an egg replacement.

Those who want to boost their alternative protein intake at home can consider ordering GOOD Meat's cultured chicken meals via foodpanda. The menu prepared by the kitchen team at 1880 include Katsu Chicken Curry and Chicken Caesar Salad.

Like them or distrust them, alternative proteins are here to stay. Although a research hub has been set up by the Nanyang Technological University (NTU) to assess the safety of novel foods, pulled jackfruit 'pork' sandwiches and cultured beef sukiyaki will be permanently embedded into our food lexicon in the very near future.