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Singapore: New R&D Hub Drives Sustainable Food Tech

Singapore has marked another milestone in its journey toward a smart, resilient and sustainable food system with the launch of a new research and development joint laboratory focused on cultivated protein. The facility, the result of a strategic partnership between a leading cultivated seafood company and Singapore Polytechnic (SP), reflects a broader national effort to position Singapore as a global hub for alternative protein innovation.

Located within SP's School of Chemical & Life Sciences, the joint R&D lab is designed to serve both research and talent development functions. It provides a hands-on platform for students interested in sustainable food and biotechnology, offering internships and real-world learning experiences that mirror the demands of the cultivated protein industry. By integrating academic learning with applied science, the facility aims to prepare a new generation of food scientists and engineers capable of addressing the challenges of future food production.

This collaboration exemplifies how industry and education can converge to produce high-impact, long-term outcomes. The cultivated seafood company involved in the initiative is recognised for its advanced biotechnology approach to developing sustainable seafood alternatives. Its work focuses on reducing reliance on conventional aquaculture while promoting ethical, scalable production methods. Establishing a physical presence on the SP campus signals the company's ongoing commitment to Singapore's innovation ecosystem and its active contribution to the local food tech landscape.

The joint lab is also part of a larger initiative – SP's Future Food Innovation Ecosystem. This ecosystem comprises the Future Food Lab (FFL), the Food Innovation & Resource Centre (FIRC) and several co-located industry partners, forming a dynamic platform for collaboration, experimentation and commercialisation.

By embedding itself in this ecosystem, the cultivated protein company aims to work closely with other innovators, researchers and entrepreneurs to accelerate the development and adoption of sustainable food technologies.

Dr Tan Tuan Lin, Senior Director, Computing, Chemical & Life Sciences Cluster at Singapore Polytechnic highlighted the significance of this partnership, noting that such industry-academia collaborations are critical to equipping students with the tools they need to contribute meaningfully to future industries. These partnerships also ensure that the curriculum remains responsive to evolving industry demands while supporting Singapore's national objectives in food security and sustainability.

At the core of the company's operations is a proprietary bio-platform that integrates artificial intelligence, multi-omics biomarkers and digital twins. This cutting-edge technology enables the discovery and scalable production of novel cultivated seafood products.

It not only addresses existing challenges in seafood quality and availability but also supports environmental sustainability by reducing the carbon footprint and ecological pressure associated with traditional fishing and aquaculture.

This initiative aligns with Singapore's "30 by 30" goal, which aims to produce 30% of the country's nutritional needs locally by 2030. Alternative proteins, particularly cultivated seafood, are seen as key components of this strategy. They provide sustainable, high-quality food options that contribute to both national food resilience and global environmental goals.

Singapore is deeply committed to ensuring food security, sustainability and preservation in response to the evolving global climate and uncertainties. This is reflected in investments in agri-tech and the advancement of sustainable food technologies.

As OpenGov Asia reported, Scientists from Nanyang Technological University, Singapore (NTU Singapore), in collaboration with a Swedish firm, are driving innovation in sustainable food preservation through advanced technology. The team developed a compact, mercury-free UV chip for everyday products that disinfects efficiently, extending food freshness, reducing waste and supporting food security and sustainability.

These initiatives represent a shared commitment to redefining food systems for future generations. Through strategic collaboration, cutting-edge science and talent development, Singapore continues to lead the charge in transforming how the world thinks about food – making it smarter, cleaner and more sustainable.

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