JOINT NEWS RELEASE

Singapore, 27 Oct 2022

SFA and NTU Singapore host inaugural Global Agri-food Scientific Symposium

Eminent scientists and industry players to discuss solutions for sustainable urban farming and future foods

Top scientists around the world are gathering to brainstorm ideas, solutions and technologies that can help pave the way for more efficient and sustainable urban farming, as well as to discuss new trends in future foods.

Organised by the **Singapore Food Agency (SFA)** and **Nanyang Technological University, Singapore (NTU Singapore)**, in partnership with **Good Food Institute APAC** and supported by the **Agency for Science, Technology and Research (A*STAR)**, the inaugural **Global Agri-food Scientific Symposium** saw delegates from both local and international research organisations, academic institutions and industry players.

The symposium, which has a dual theme of “Resilient and Sustainable Urban Food Systems” and “Transformation of Future Food System”, was graced by **Senior Minister of State, Ministry of Sustainability and The Environment and Manpower, Dr Koh Poh Koon.**

As part of the **Singapore International Agri-food Week 2022**, the symposium held at the Marina Bay Sands Expo and Convention Centre on 27 October 2022, showcases cutting-edge research innovations for urban cities and serves as a knowledge sharing platform for researchers to foster deeper research and development partnerships, develop innovation capabilities, and build transformational market solutions.

The keynote speeches, technical presentations, and panel discussions by over 20 speakers at the event covered topics from the symposium’s two themes. The first spanned research on agri- and aqua-culture disease and health management, genetics and breeding, while the second highlighted novel food developments and scale-ups, as well as flavor, texture and nutrition enhancements.

Dr Ngin Hoon Tong, Senior Director for SFA's Science & Technology Division, said that the symposium was timely, and facilitates the exchange of new ideas, innovations and technologies that will contribute towards the development of sustainable urban food solutions.

"Food security is an existential matter that we cannot ignore. Through this inaugural scientific symposium, we hope to bring together researchers, solution providers, food producers, and other ecosystem players to develop new technologies and capabilities that will enhance the food resilience of Singapore and beyond." said Dr Ngin.

Symposium Co-Chair Professor William Chen, the **Michael Fam Chair Professor in Food Science & Technology at NTU Singapore and Director of Singapore Agri-food Innovation Lab**, said that the solution discussed from the two themes will complement and enhance efforts by Singapore and other countries in building climate-resilient and energy-efficient urban farming systems.

"At this symposium, we are hearing for the first time, new concepts and ideas that can revolutionise the way food is produced. From studying microbial communities and using gene-editing to enhance food production in urban farming, to developing micronutrient-containing capsules for aquaculture and turning waste into alternative proteins, these ideas have the potential to be realised through close public-private partnerships. Such efforts will help Singapore and other countries achieve sustainable food production and enhance global food security," explained Prof Chen.

Resilient and Sustainable Urban Food Systems

Under the theme of "Resilient and Sustainable Urban Food Systems", keynote speaker **Professor Patrick Sorgeloos, Emeritus Professor of Aquaculture from Ghent University in Belgium**, shared new microbial management strategies to promote bacteria that can increase production, while minimising the development of pathogenic organisms that may harm aquatic animals.

"The stability and composition of microbial populations play a crucial role in production success. Managing the microorganisms that grow in the aquaculture system is as important as the biosecurity measures to keep pathogens out. The successful achievement of microbial balance in intensive aquaculture systems, could result in more stable and predictable productions," said Prof Sorgeloos.

In his presentation, **Professor Yu Hao, Provost Chair Professor & Head of the Department of Biological Science from the National University of Singapore and Temasek Senior Investigator from Temasek Life Sciences Laboratory** showed how advanced breeding strategies such as genome editing could create novel crop varieties with high quality traits tailored for urban farming.

“Agricultural production in controlled urban environments offers a reliable alternative to food and nutrition supply for densely populated cities such as Singapore. Currently, most crops produced by urban farming are selected under field conditions and are not suited to farm indoors, causing ineffective and unsustainable production of indoor crops with limited yield and quality. To address this issue, we are working to customise food crops specifically for controlled urban environments,” Prof Yu added.

Transformation of Future Food System

Keynote speaker of the “Transformation of Future Food” theme, **Chief Research Scientist from Commonwealth Scientific and Industrial Research Organisation (CSIRO), Dr Mary Ann Augustin**, touched on technological advances in alternative protein production, and how they are opening up new opportunities for the development of sustainable food systems. These include the application of synthetic biology and precision fermentation technologies for producing alternative protein ingredients and products.

“Innovative protein production methods and downstream processes, coupled with management of natural resources, will enable the uptake of marketable solutions in the alternative protein space,” Dr Augustin shared.

One of the projects featured in the presentations is the Alternative Protein Development Platform (APDP): from lab to pilot scale. **Dr Melanie Weingarten, Director of Biotransformation at A*STAR's Singapore Institute of Food and Biotechnology Innovation (SIFBI)**, shared the global alternative protein market trends and explained how Singapore has a strong value proposition to accelerate the development and innovation of alternative proteins, including tapping on new or underexplored indigenous Asian protein sources.

"The APDP, a public-private partnership involving a multidisciplinary team, will close the ecosystem gaps in upscaling and food process engineering using fermentation and downstream processing as well as high moisture extrusion (which turns vegetable or alternative proteins into a form with fibrous texture like animal meat),” said Dr Weingarten.

Panel discussions at the symposium covered topics such as “Sustainable Use of Planet’s Resources to Deliver Nutrient-dense Food” and “Building an Effective Scientific Innovation Ecosystem for Future Food”, in which the panellists discussed the role of technology in crops or fish improvement and farming system efficiency, and how international scientific collaborations could be supported and utilised respectively.

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Note to Editors:

More details of the symposium can be found at:
https://sginternationalagrifoodweek.com.sg/global-agrifood-scientific-symposium/.

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About the Singapore Food Agency (SFA)

The Singapore Food Agency (SFA) was formed as a new statutory board under the Ministry of the Environment and Water Resources on 1 April 2019. The SFA brings together food-related functions carried out by the former Agri-Food & Veterinary Authority of Singapore, the National Environment Agency and the Health Sciences Authority.

As the lead agency for food-related matters, SFA's mission is to ensure and secure a supply of safe food for Singapore. SFA works hand-in-hand with the industry and consumers to grow our three "food baskets" – Diversify import sources, Grow local, and Grow overseas, as well as ensure food safety from farm-to-fork. SFA also partners food businesses to strengthen capabilities, tap on technologies to raise productivity, undertake research to develop new lines of business, and catalyse industry transformation to ensure food security. For more information on SFA, visit www.sfa.gov.sg.

About Nanyang Technological University, Singapore

A research-intensive public university, Nanyang Technological University, Singapore (NTU Singapore) has 33,000 undergraduate and postgraduate students in the Engineering, Business, Science, Medicine, Humanities, Arts, & Social Sciences, and Graduate colleges.

NTU is also home to world-renowned autonomous institutes – the National Institute of Education, S Rajaratnam School of International Studies, Earth Observatory of Singapore, and Singapore Centre for Environmental Life Sciences Engineering – and various leading research centres such as the Nanyang Environment & Water Research Institute (NEWRI) and Energy Research Institute @ NTU (ERI@N).

Under the NTU Smart Campus vision, the University harnesses the power of digital technology and tech-enabled solutions to support better learning and living experiences, the discovery of new knowledge, and the sustainability of resources.

Ranked amongst the world's top universities, the University's main campus is also frequently listed among the world's most beautiful. Known for its sustainability, over 95% of its building projects are certified Green Mark Platinum. Apart from its main campus, NTU also has a medical campus in Novena, Singapore's healthcare district.

For more information, visit www.ntu.edu.sg