

NUS module on alternative proteins to boost agri-tech sector

Graduate-level course will help ensure pipeline of talent for green jobs in years ahead

Cheryl Tan

With the growing agri-tech sector in Singapore set to become a source of green jobs in the years ahead, universities here are starting to offer courses in the novel protein space to ensure a steady pipeline of talent for it.

In January, the National University of Singapore (NUS) will launch a new graduate-level module focusing on the various aspects of alternative proteins, including how meat can be produced without slaughter, *The Straits Times* has learnt.

This follows a similar course that was launched by Nanyang Technological University in June for its undergraduates.

The courses in both universities, which were developed in conjunction with international non-profit organisation The Good Food Institute, aim to teach students about meat alternatives – like plant-based protein and cultivated meat – and the technology used to make them.

Plant-based protein refers to products such as Impossible patties, made entirely from plants.

Cultivated meat, on the other hand, consists of real meat products that are made without slaughter. Instead, beef or pork products are made by retrieving animal cells from cows or pigs through methods such as biopsies, and then multiplying them in bioreactors.

Ms Mirte Gosker, acting managing director of The Good Food Institute Asia Pacific, said the alternative protein ecosystem is currently experiencing “acute talent shortages” among scientists and

engineers, potentially affecting the industry’s growth at a critical time of surging consumer demand.

For graduate students who have already selected a career in deep science and technology, giving them the option to take a module focusing on the alternative protein space would help them see how best to apply their skills to this sector, she said.

The NUS module, called Introduction to Advanced Meat Alternatives, will cover the various aspects of the novel food sector, including the technologies involved in making alternative protein, how such products are regulated in the various markets and how consumers perceive them.

Professor Zhou Weibiao, head of the Department of Food Science and Technology at NUS’ Faculty of Science, said that the class size for the module is capped at 60 students.

Plans are also under way to offer a similar module for undergraduates, but with more “tailored content” to fit the undergraduate syllabus and educational objectives, he added.

One example of this would be to focus on a specific alternative protein category for undergrads, instead of the full range.

This will be examined from the angles of fundamental sciences – including chemistry, microbiology, processing, engineering and nutrition, he added.

Prof Zhou said food science and technology is an evolving multidisciplinary subject.

“With the current rapid growth of the world’s population and the deterioration of our environment, it is clear that food cannot only be made from conventional agricul-



Consumer demand for alternative proteins, such as plant-based protein, is growing and the agri-tech sector in Singapore is poised to become a source of green jobs. PHOTO: LIANHE ZAOBAO

tural techniques. Alternative and sustainable food sources have become necessary,” he added.

Alternative proteins are considered more sustainable than traditional meat products, as large volumes of plant-based or cell-cultured foods can be produced involving less land and labour.

Last year, the Ministry of Sustainability and the Environment said there could be 55,000 new and upgraded jobs in the green economy over the next decade, with agri-tech being one of the sectors.

Ms Gosker said she hopes that the NUS graduate students will, going through the 13-week course, come up with formal research proposals to address the “persistent knowledge gaps” in the sector, such as in terms of the nutritional value of alternative proteins, which could translate into full-scale research projects when these students enter the professional workforce.

Alternative protein companies welcomed the moves to boost the talent pipeline for the sector.

Local biotech start-up Turtle Tree Labs, which uses cell-based technologies to produce key ingredients found in human milk, said that with people in the younger generation having an early understanding of the bottleneck in the novel foods industry – like commercial, regulatory and scalability hurdles – it could propel them to find novel solutions that can be implemented across various sectors of the industry in future.

tansuwen@sph.com.sg