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ZERO
HUNGER

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GOVERNANCE AND OPERATIONS

UCSI University adopts a structured and impact-oriented approach to advancing Sustainable Development Goal 2 (Zero Hunger) by improving food access, promoting balanced nutrition and supporting sustainable food systems within the campus and surrounding communities. Although the University does not maintain a permanent on-campus food bank, it implements targeted initiatives to support students experiencing financial hardship and vulnerable communities through food distribution drives, emergency aid programmes and partnerships with civil society organisations. These initiatives provide access to safe and nutritious meals for underserved groups, while student volunteer programmes strengthen civic engagement and community outreach. Such efforts contribute to SDG Target 2.1 (ensuring access to safe and sufficient food) and SDG Target 2.2 (improving nutrition and promoting healthy diets).

UCSI also promotes responsible food consumption and healthy dietary practices through campus food outlets such as Santé (<https://www.sante.com.my/>), which emphasises fresh ingredients and environmentally conscious menus, alongside other food services available on campus. Beyond food access, the University integrates sustainable food system principles into academic, research and community engagement initiatives, including projects related to urban agriculture, food sustainability and responsible consumption. Through these coordinated efforts, UCSI contributes to strengthening food resilience, nutrition awareness and sustainable food practices at the institutional and community levels.

TEACHING AND LEARNING

1. WASTE-TO-VALUE DAY

Waste-to-Value Day, organised by UCSI University on 30 October 2025, addressed food waste and unsustainable consumption, supporting SDG 2. Led by UCSI's School of Architecture and Built Environment Dr Emmanuelle Khoo Fong Yi, this initiative promoted food rescue, recycling and sustainable resource use. Participants engaged with student-led exhibitions, fundraisers and demonstrations of upcycled materials, which raised RM8,000 to support Kafa and refugee schools while collecting 150 kg of recyclables. The event highlighted tools like the Value Food app to facilitate ongoing food rescue efforts as part of its SDG 17 initiative.

The programme increased awareness of sustainable consumption and circular economy practices, motivating participants to adopt waste-reduction behaviours. At a broader level, it strengthened multi-stakeholder collaboration between academia, students and community partners, which also advances SDG 11, SDG 12, SDG 13 and SDG 17.



2. HUNGER PROJECT 2025

On 20 July 2025, UCSI University, in collaboration and partnership with Region 1 Lions and Leo Clubs, organised the Hunger Project 2025 at Stutong Community Market, Sarawak, to address food insecurity among elderly and low-income families, supporting SDG 2. Students, volunteers and community members contributed to collecting, sorting and packaging essential food items, which were distributed to local charitable organisations, including Lions Nursing Home.

This initiative provided immediate nutritional support to vulnerable populations while fostering civic engagement and community solidarity. At a broader level, the project strengthened multi-stakeholder collaboration between the university, community groups, and volunteers, contributing to SDG 1, SDG 3, SDG 10, SDG 12 and SDG 17. It promoted equitable access to resources, encouraged responsible consumption and enhanced community resilience, demonstrating the positive impact of coordinated local action on multiple sustainable development goals.



3. HEALTHY AND CARING COMMUNITY PROJECT: INTEGRATED FOOD DONATION, NUTRITIONAL STATUS ASSESSMENT AND COMMUNITY EDUCATION INITIATIVE

On 2 August 2025, the Faculty of Applied Sciences from UCSI University, in collaboration with The Lost Food Project and funded by Yayasan MySDG, organised Projek Komuniti Sihat dan Prihatin at PPR Sri Tioman 2, Kuala Lumpur, to address food insecurity and poor nutritional awareness among low-income urban communities, supporting SDG 2. Participants included local residents, UCSI students and academic staff, who engaged in nutrition education, healthy cooking demonstrations and basic health screenings.

This initiative enhanced participants' knowledge of nutrition, healthy eating and food waste reduction while providing practical skills for preparing nutritious meals from surplus food. At a broader level, the programme strengthened community resilience, promoted equitable access to nutrition and fostered cross-sector collaboration, contributing to SDG 3, SDG 11, SDG 12 and SDG 17. It exemplifies how multi-stakeholder partnerships can advance sustainable, healthy and inclusive urban food systems.



RESEARCH AND DISCOVERY

1. CHEMISTRY, PHARMACOLOGY, USES, SAFETY STUDIES AND CLINICAL STUDIES OF GLUCOSYL HESPERIDIN: AN OVERVIEW

(Journal of Applied Pharmaceutical Science, (2025) Professor Dr Eric Chan Wei Chiang)

Glycosyl hesperidin (GH) or hesperetin rutoside has been patented in 1997 and 2000, and has been endorsed as a novel food in 2024. A flavanone mostly from Citrus fruits, GH can be synthesised by adding one glucose molecule to hesperidin. Pharmacological properties of GH are diverse with anti-hypertension, antimicrobial, anti-inflammatory and anti-obesity being the major activities. Food additives, functional food, beverage, health supplement and cosmetics are some of the uses of GH. Now a commercial product, GH is being sold in Japan, Taiwan and Korea as a dietary supplement. From 2004 to 2023, a total of 13 clinical studies involving GH were reported in the literature. All conducted in Japan, their area of study included arthritis, triglyceride, blood flow, obesity, lower leg swelling, vasodilation, vascular flexibility and hepatic function. In the concluding remarks, the prospects and fields for further research of GH are suggested.

2. HYPERSPECTRAL IMAGING-BASED DEEP LEARNING BENCHMARKS IN NON-DESTRUCTIVE TESTING OF CHERRY TOMATOES

(Applied Food Research, (2025) Professor EUR ING. Ir Ts Dr Ang Chun Kit)

Non-destructive testing of fruit quality is critical for enhancing post-harvest processing efficiency and market value, particularly for delicate produce such as cherry tomatoes. Traditional methods, which are labor-intensive and destructive, limit real-time applicability. Hyperspectral imaging (HSI), by capturing spatial and spectral information, offers a promising alternative for rapid, non-invasive quality evaluation. This study evaluates the potential of combining HSI with traditional machine learning (ML) and deep learning (DL) models to predict four key physicochemical properties of cherry tomatoes: soluble solids content, acidity, sugar content and firmness. A dataset of 310 samples was analysed across two spectral ranges: visible/near-infrared (406–1010 nm) and near-infrared (957–1677 nm). Four preprocessing methods were applied to enhance spectral features: multiplicative scatter correction, standard normal variate, first derivative and second derivative. To establish DL benchmarks, Bayesian optimisation hyperparameter search, as neural architecture search, was employed for spectral preprocessing and DL network architecture tuning. For fair comparison, traditional ML models with preprocessing methods were optimised using grid search. Seven models, including linear regression (LR), partial least squares regression (PLSR), support vector regression (SVR), VGG, ResNet, Transformer, and DenseNet, were developed. Results indicated that DL models, particularly ResNet and Transformer, exhibit superior accuracy and robustness, achieving coefficient of determination (R^2) values up to 0.96 in the test sets. Spectral analysis based on Grad-CAM confirms that these DL models consistently focus on chemically informative wavelengths. These findings highlight the advantages of optimised DL models in developing interpretable and accurate HSI for non-destructive fruit quality testing, supporting advancements in agricultural productivity, enabling manufacturing innovation in post-harvest processing and promoting sustainable food consumption through reduced waste and improved quality control.

COMMUNITY AND PARTNERSHIP

1. BITE BY BITE: RESCUE MORE, WASTE LESS

Bite by Bite: From Waste to Wellness was a university-organised sustainability engagement held at UCSI University by final-year Nutrition with Wellness students from the Faculty of Applied Sciences, led by Assoc Prof Dr Satvinder Kaur. The event addressed food waste and its link to food insecurity, supporting SDG. Activities included expert talks by Ms Atiqah Dr Chang Lee Sin on meal planning, smart food storage and balanced nutrition; a cooking demonstration by Chef Fadzly transforming surplus ingredients into nutritious meals; and an upcycling workshop repurposing used coffee grounds into body scrub products. Interactive games, tasting booths with rescued ingredients and lucky draws reinforced experiential learning.

The programme increased participants' awareness and practical knowledge on reducing food waste and improving food utilisation. It also contributes to SDG 3, SDG 12 and SDG 11 by promoting nutritious diets, sustainable resource use and inclusive, resilient, environmentally conscious community practices, supporting national and global efforts to strengthen food security and reduce avoidable food loss.



2. BUBUR LAMBUK GIVEAWAY RAMADAN 2025: A COMMUNITY UNITED IN CHARITY AND COMPASSION

The Bubur Lambuk Giveaway Ramadan 2025 was organised to address food insecurity and social vulnerability among local communities during the fasting month, aligning with SDG. The initiative was led by UCSI University's Student Affairs and Alumni, Student Board, and Gastronomy Enterprise Club, in collaboration and partnership with RCE Kuching, AADK Daerah Kuching and SKUAD Antidadah Kuching, which also demonstrated SDG 17. Students, staff and partners prepared and distributed bubur lambuk, while also raising awareness of social issues such as drug prevention and rehabilitation, linking nutrition, health and social well-being.

The programme improved access to nutritious food for beneficiaries and strengthened community bonds. It also contributed to SDG 10 by supporting low-income and vulnerable groups, while promoting inclusive community care and shared responsibility. The initiative reflects the role of higher education institutions in advancing the SDGs through compassionate, community-driven engagement, reinforcing national efforts to reduce hunger and promote social solidarity.



3. UCSI SIGNS MOU WITH REGENERASI

UCSI University officially partnered with the NGO REGENERASI to empower Malaysian youth in sustainability and food security initiatives, addressing limited youth engagement and supporting SDG. The partnership was formalised through a Memorandum of Understanding witnessed by UCSI president and vice-chancellor Prof Emeritus Datuk Ts Ir Dr Siti Hamisah Tapsir and REGENERASI vice-president YBhg Datin Amy Latiff. Activities included certificate presentations to student ambassadors and a speech by REGENERASI Patron YBhg Tan Sri Dr Madinah Mohamad, highlighting youth-led initiatives in sustainable food practices.

The event inspired participants to take active roles in promoting sustainable food systems and responsible consumption practices, fostering leadership, collaboration and civic engagement among youth. It also contributes to SDG 4 by equipping students with practical knowledge and skills in sustainability, SDG 12 through the promotion of sustainable food practices and SDG 17 by strengthening collaboration between universities, NGOs and the wider community. By raising awareness of food security and sustainability, the initiative supports national and global efforts to ensure equitable access to nutritious food and build resilient, environmentally conscious communities.

