

Business Challenge 2025: secondary students presented ideas on construction-waste reuse and on waste and food.

2 ZERO HUNGER

SUSTAINABLE DEVELOPMENT GOAL 2

Zero Hunger

Uruguay is an agri-food economy, and ORT contributes through biotechnology research that turns agro-industrial by-products into higher-value food ingredients, economics research on irrigation and agribusiness, and support for food entrepreneurs.

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ANII-funded biotechnology projects turning by-products into food ingredients

8

courses mapped to SDG 2, from agro-biotechnology to agribusiness trade

1st

agricultural podcast in the country co-produced by the School of Communication

TEACHING & LEARNING

Food systems in the curriculum

Agro-biotechnology, Food Technology (sustainable food systems) and Introduction to Biotechnology in Engineering; Agricultural Trade and Development, Foreign Trade in Agribusiness and Marketing in Agribusiness in Management.

Slow food in hotels

Tourism and Hotel Management students Emma Gregson and Noemie Pinsonneault-Berger were finalists in the Innovative Ideas category of Hoteles más Verdes, a sustainable hospitality competition covering Argentina, Chile, Paraguay and Uruguay, with "De la naturaleza a la mesa", a phased slow food programme for hotel restaurants that supports local producers and preserves gastronomic traditions. facs.ort.edu.uy/novedades/turismo-sustentable-propuesta-slow-food-f...

RESEARCH & INNOVATION

Isoflavones from soy by-products

A project funded by the National Agency for Research and Innovation (ANII) through the Innovagro sector fund reprograms bacteria to produce (S)-equol, a high-value metabolite, from soybean meal, creating a biocatalyst with industrial potential (lead: Dr. Cecilia Ortiz).

Fungal extracts for the food industry

With ANII Alianzas funding and the company Mushlove, researchers are developing liposomal formulations with fungal extracts for food and cosmetic applications, including the valorization of oil-production residues as a lecithin source (lead: Dr. Mariana Umpiérrez).

Whey and microalgae for cattle health

Biotechnology students Agustina Lima and Ignacio Rodríguez were selected for Projects for Peace 2025, the Middlebury College programme that funds student-led community projects worldwide, with a proposal to revalorize whey, a dairy by-product, using microalgae to produce a probiotic supplement for cattle. fi.ort.edu.uy/novedades/dos-estudiantes-de-biotecnologia-fueron-sel...

Supplementary irrigation

Research by the Department of Economics with the Centre for Economic Research (Cinve) shows the room for Uruguay to expand supplementary irrigation to raise and stabilize crop yields; findings feed into the Diploma in Sustainable Agribusiness. facs.ort.edu.uy/novedades/riego-suplementario-estrategia-clave-para...

Traceability for sustainable wine

Engineering students built AgroTrace for the National Institute of Viticulture (INAVI), a platform supporting traceability and certification of sustainable wine production.

COMMUNITY & PARTNERSHIPS

Innova Alimentos

A CIE programme funded by INEFOP to identify and strengthen entrepreneurial projects in the food sector (18 months).

Biotechnology alliances with industry

The Faculty of Engineering promoted alliances to transform the food industry through biotechnology and took part in Foro Biotech 2025. fi.ort.edu.uy/novedades/alianzas-para-transformar-la-industria-alim...

La Sede

The School of Communication co-produced La Sede, the country's first agricultural podcast, an initiative of the Rural Society of Río Negro recorded in ORT's television studio and aimed at young people finishing secondary school; it premiered on 15 May 2025. fc.ort.edu.uy/novedades/la-sede-primer-podcast-agropecuario-del-pai...

Youth ideas on waste and food

At the 4th Business Challenge for secondary students, the proposal Reciclash received a special mention for tackling waste management and food together. facs.ort.edu.uy/novedades/ganadores-2025-del-business-challenge

8 course offerings linked to SDG 2 in 2025

- Agrobiotecnologías (Engineering)
- Marketing en Agronegocios (Management)
- Comercio Exterior en Agronegocios (Management)
- Tecnología de los alimentos (Engineering)
- Comercio y Desarrollo Agrícola (Management)
- Cambio Climático (Management)
- Temas avanzados Biotecnología (Engineering)

From agro-industrial by-products to food value

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ANII-funded projects turning soy and oil by-products into food ingredients

6
2025 publications and presentations on food systems and agriculture

8
courses linked to SDG 2 in the 2025 curriculum mapping

Uruguay produces food for many times its population, and the by-products of that production are a growing research focus at the Faculty of Engineering's biotechnology laboratories. In 2025 Dr. Cecilia Ortiz's team began an ANII Innovagro project to reprogram bacteria so that they produce (S)-equol, a high-value metabolite derived from soy isoflavones, from soybean meal. The team presented its synthetic-biology biocatalyst at the Next Generation Biocatalysis Symposium in Milan and its approach to valorizing soy by-products under a One Health framework at a congress in Salto.

A second project, led by Dr. Mariana Umpiérrez with ANII Alianzas funding and the company Mushlove, develops liposomal formulations with fungal extracts for food and cosmetic applications and studies the valorization of oil-production residues as a source of lecithin. In the same line, Dr. Lorena Betancor's group published in Sustainable Chemistry and Pharmacy a process to produce L-sorbose using food-waste media and recyclable resting cells.

Research also supports safer, more productive agriculture. Faculty co-authored work in Pest Management Science on improving the fungus Beauveria bassiana as a biological control agent against the soybean pest Piezodorus guildinii, an alternative to chemical insecticides, and Franz Mayr presented neural models that predict soybean yields in the eastern pampas from open data.

In economics, Francisco Rosas and the Department of Economics, with the Centre for Economic Research (Cinve), showed the room for Uruguay to expand supplementary irrigation to stabilize yields, research that feeds the Diploma in Sustainable Agribusiness.

SELECTED 2025 PUBLICATIONS AND PRESENTATIONS BY ORT FACULTY

1. Tejera, T., Blázquez, B., Manta, B., Nogales, J., & Ortiz, C. (2025, 8-9 de mayo). Synthetic biology-driven construction of a whole-cell biocatalyst for sustainable (S)-Equol production from soy byproducts. [Presentación de póster]. 5th Next Generation Biocatalysis Symposium (NextGenBiocat), Milano, Italia.
2. Viroga, V., Canclini, A., Boado, J., Tejera, T., & Ortiz, C. (2025, 28-30 de noviembre). Valorización de subproductos de soja bajo un enfoque de Una Salud. [Presentación de póster]. Congreso Uruguayo en Una sola Salud: I Jornada académica del Instituto de Investigación Una sola Salud, Salto, Uruguay.
3. Pirotti, F. D., Soriano, N., Ripoll, M., Domínguez de María, P., Barrow, C. J., & Betancor, L. (2025). Improving the sustainability of Gluconobacter oxydans L-Sorbose production using food waste media and recyclable resting cells. Sustainable Chemistry and Pharmacy, 46, 18 p.
4. Mayr, F., Cal, A., Gaso, D., Branbate, F., Feuer, A., & García, J. (2025). Soybean yield prediction in the eastern pampas of South America using neural models and open source variables. En Anais do XXI Simpósio Brasileiro de Sensoriamento Remoto.
5. Lima Ferreira, P., Etchevers, I., Cuña Rodriguez, C., Velázquez, P., González, L., Leão Fernandes, E. H., Lopes Leães Pinho, G., & García Rodríguez, F. (2025). Links between international market trends, agricultural intensification and extreme sedimentation rates in a transboundary South American coastal lagoon. Science of the Total Environment, 975, 11 p.
6. Oberti, H., Sessa, L., Van Roosmalen, E., De Bekkes, C., Seidl, M. F., Sanchez Vallet, A., & Abreo, E. (2025). From omics to enhanced fungal virulence: Overexpression of a putative secreted protein improves Beauveria bassiana biocontrol potential against the insect pest Piezodorus guildinii. Pest Management Science.