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Crop seeds return from space in IAEA FAO project to develop resilient crops

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Seeds sent into space last year have returned to Earth in a new milestone for joint efforts by the International Atomic Energy Agency (IAEA) and the Food and Agriculture Organisation of the United Nations (FAO) to develop resilient crops that can help provide sufficient food as the planet heats up.

Plants naturally evolve to thrive in their surroundings, but crops have been struggling to keep up with the current pace of climate change. The world is warmer and the global population is increasing, causing farmers around the world to struggle to meet food demand. To support these farmers and improve global food security, the IAEA and FAO, through their Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture, sent seeds into space to explore the effects of cosmic radiation on speeding up natural, genetic adaptation of much-needed crops. Their return to Earth paves the way for scientists to start analysing the results.

Launched from NASAâ??s Wallops Flight Facility in Virginia, USA on 7 November 2022 and having spent around 5 months at the International Space Station (ISS), Arabidopsis and Sorghum seeds â?? chosen because there is already a large bank of scientific data available for comparison â?? were released from the ISS in the SpaceX CRS-27 cargo craft at 17:05 CEST on 15 April and made a parachute-assisted splashdown off the coast of Florida, CA, USA at 22:58 CEST. They will now begin their journey back to the laboratories of the Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture in Seibersdorf, Austria, where they will be screened and analysed for desirable traits.

â??The cosmic crops project is a very special one. This is a science that could have a real impact on peopleâ??s lives in the not-too-distant future, by helping us grow stronger crops and feed more people,â? said Rafael Mariano Grossi, IAEA Director

General. â??IAEA and FAO scientists may have already been mutating seeds for 60 years and creating thousands of stronger crops for the world to use, but this is the first time we have experimented with such an exciting field as astrobiology.â?

â??Now that the seeds are back on Earth, we can see the effects of cosmic radiation, microgravity and extreme temperatures and compare them with those induced in our joint laboratories. This ground-breaking experiment can help develop crops that are able to adapt to climate change and boost global food security,â? said QU Dongyu, FAO Director-General.

The seeds will undergo a phytosanitary import process which is a standard requirement for the transport of plant material across country borders to minimise the risk of introducing new pests, before final arrival at the laboratories.