At the Barcelona Science Fest, we cultivate knowledge with Archaeobotany!

This weekend, Rambla Prim in Barcelona has been buzzing with families and researchers at the 16th Science Festival.

We the ICAC (Catalan Institute of Classical Archaeology) participated in the event with **a workshop on cereal cultivation and sustainable food**, where children and their families interacted with large-scale reproductions of ancient cereal seeds and performed tasks of sample identification and classification.

The activity has been well received, with the **participation of about thirty people**, including 15 children and their families.

The workshop led to **the discovery of Archaeobotany**: a discipline that is not widely known in the popular imagination of Archaeology but is essential for understanding key aspects of past societies‘ daily life; such as food, agricultural practices, and trade routes.

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Cultivating Knowledge: Unveiling Ancient Crops for a Sustainable Future

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Welcome to the world of archaeobotany and the study of ancient cereals! Did you know that the number and diversity of cereal varieties have decreased since prehistoric times? In the introductory phase of the workshop, we compared some of the most consumed cereals today with the wide variety of cereal species that existed in the prehistoric Mediterranean area.

Using **various graphic and plastic materials** (a poster, reproductions of charred seeds, and images on paper), our researchers explained the most relevant aspects of their research methodology.





The second part of the workshop focused on the **tasks of sample identification and classification** through experimentation and manipulation of charred seeds. First, children located the seeds among real archaeological sediments, and they didn't mind getting their hands dirty at all! Then, using interpretation cards with images and names of different cereal varieties, they had to correctly identify and classify the seeds they found in the sediment.

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Children showed surprise and great interest in learning about ancient seed banks *(agrogenetics),* experimental cereal crops, and the application of artificial intelligence in identifying and studying prehistoric cereals.

Indeed, the work of archaeologists is diverse! Outreach activities are a valuable tool for breaking stereotypes and inspiring scientific vocations. And we are passionate about it!

The final part of the workshop drew special attention with its **large-scale (and brightly colored) 3D reproductions of ancient seeds** documented in prehistoric Mediterranean sites. Children had to place each cereal on its corresponding identification card, and it was not as easy as it seemed!

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The workshop **Cultivating Knowledge: Unveiling Ancient Crops for a Sustainable Future** is an initiative of the archaeobotany team from the GIAP research group at ICAC, led by researcher Alexandra Livarda. Postdoctoral researcher Marie-Curie Charlotte Diffey and Darío Herranz participated, accompanied by knowledge transfer technician Marta Flórez, and with the support of Ada Richaud and Maria Ferrer.

We also want to highlight the collaboration of researcher Leonor Peña-Chocarro from the Center for Human and Social Sciences at CSIC in Madrid.



This new proposal has been very well received by the audience, who interacted with the researchers, asking various questions about archaeobotany, their research projects, and methodologies. It has been a fantastic experience that allowed GIAP to share a part of its

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research with the public.

The Barcelona Science Festival is a scientific dissemination event organized by the **Barcelona City Council**, and this year marks its 16th edition. The workshops and activities took place in the Besòs neighborhood of Barcelona (District of Sant Martí). The ICAC workshop was located in Space 8: Living Beings and took place on **Sunday, 11th June, shortly after 5:00 PM**, during the second day of this large-scale event.



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This activity was designed in the context of the following projects:

- Alexandra Livarda is a Ramón y Cajal researcher at GIAP (ICAC). Agencia Estatal de Investigación, RYC-2017-22105.
- DarkRevisited. The Aegean 'Dark Ages' revisited: a novel approach to old debates on agricultural economy and food culture. Agencia Estatal de Investigación (PID2019-107605GB-I00).
- DarkSeeds: A new explanatory paradigm for the agricultural economies of the Aegean Late Bronze and Early Iron Age using Machine Learning-aided 3D morphometrics and stable isotope analyses (2022–2024). Marie Skłodowska-Curie Actions, European Research Area

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(H2020-MSCA-IF-2020-101024917).

- *Feeding the Gap: A modern experimental cultivation project towards the creation of new tools that explore past agriculture*. PhD Thesis. Alexandra Kriti. Supervised by Dr Alexandra Livarda (ICAC) and Dr Elisa Ninou (Associate Professor from the International Hellenic University, Department of Agriculture in Thessaloniki, Greece).
- Experimental cultivations were developed at the Institute of Plant Breeding and Genetic Resources (IPGRB from ELGO-Demeter, Hellenic Agricultural Organization) in Thessaloniki (Greece).



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