Università di Catania

Uni ct Di3A

# Winter School Sicily 2022

## Exploiting the diversity of broccoli, snap bean and tomato: the case of study of the H2020 BRESOV project

*13 – 15 December 2022*

*Catania, Agrigento (and virtual meeting)*

*The training course aims to provide to students, technicians, growers and researchers, the recent projects outcomes related to the organic breeding for the broccoli, snap bean and tomato crops. The BRESOV consortium's overall aim is to increase the plants' tolerance to biotic and abiotic stresses and to adapt the varieties to the specific requirements of organic and low-input farming. While existing breeding material is predominantly optimised for conventional agriculture, the BRESOV project aims to adapt and enhance genetic resources specifically for organic production to make it more competitive and attractive for farmers throughout and beyond the European Union. Within the project, partners applied modern techniques to explore the natural diversity within each crop and then exploited them to expand the breeding base to select and to improve resilience traits for organic farming systems using annual crop rotation schemes. We hope our BRESOV project outputs will contribute significantly towards developing context-specific climate-resilient organic farming systems in the face of the imminent climate change scenarios and will serve as a model for the enhancement of other crops grown using innovative organic vegetable growing methods and technique for more resilient and sustainable agrosystems.*

*For the three crops the BRESOV partners have genotyped and phenotyped 996 accessions of Brassica oleracea L. (broccoli, cabbage, cauliflower, kale, kohlrabi, Brussels sprouts), 496 of Solanum lycopersicum L. (tomato), and 1443 of Phaseolus vulgaris L. (bean), represented by landraces, inbreed lines, commercial cultivars and their wild relatives.*

*The results of the activities will be presented and discussed during the training course.*

| 13 December | Arrival and check-in at hotel | |
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| After 14:00 | Arrival | Recommended accomodation: Hotel Mediterraneo, Catania https://www.hotelmediterraneoct.com/[a] |
| **14 December** | **Workshop day** | |
| 8:30-9:00 | Registration and Ice Breaking session | Department of Agriculture, Food and Environment (Di3A) of the University of Catania<br>Via Valdisavoia 5<br>www.di3a.unict.it |
| 9:00-10:30 | • Welcome of the Director Di3A<br>• Presentation of the BRESOV project (**Ferdinando Branca, University of Catania**)<br>• Presentation Rete Semi Rurali and the new HORIZON project on organic breeding LIVESEEDING **(Riccardo Bocci, Rete Semi Rurali)**<br>• Presentation of European Consortium for Organic Plant Breeding (ECO-PB) (**Edwin Nuijten, Kultursaat & De Beersche Hoeve)**<br>• Introduction to breeding on tomato (**Jaime Prohens, Polytechnic University of Valencia**)<br>• Introduction to breeding on brassica **(Nadia Ficcadenti, CREA/Hajer Ben Ammar, University of Tunis El Manar)** | |

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| | • Introduction to breeding on bean **(Creola Brezeanu, Vegetable Research and development station)** |
| 10:30-11:00 | Coffee break |
| 11:00-12:30 | • Ethical and practical aspects of organic breeding (**Edwin Nuijten, Kultursaat & De Beersche Hoeve)**<br>• Accessing and managing genetic resources: a dialogue with RSR community seed bank (**Riccardo Bocci, Rete Semi Rurali** )<br>• The organic seed production strategies in the frame of the EU Directive 848/2018 on organic farming **(Antonio Lo Fiego, ARCOIRIS)** V<br>• Towards a decentralized conservation strategy for plant genetic resources conservation and use **(Roberto Papa, Marche Polytechnic University)** |
| 12:30-14:00 | Aperi-Sprouts <br>Lunch break |
| 14:00-15:30 | • The diversity of Brassica oleracea L.: its crops and morphotypes (**Branca Ferdinando, University of Catania** )<br>• Genotyping of the BRESOV Brassica core collection: diversity, QTLs, genes and molecular markers (**Peter Walley, University of Liverpool** ) V<br>• Nutraceutical traits of Brassica oleracea crops **(Lo Scalzo Roberto, CREA)** |
| 15:30-15.45 | Coffee break |
| 15.45-17.15 | • The programmes and results of tomato breeding for organic conditions in the BRESOV project (**Jaime Prohens, Polytechnic University of Valencia** )<br>• The use of tomato wild relatives for breeding and pre-breeding **(María José Díez, Polytechnic University of Valencia)** V<br>• QTL and molecular markers, of tomato (**Jaime Prohens, Polytechnic University of Valencia** )<br>• Practical case of Valencian tomato selection and breeding using a participatory approach **(Salvador Soler, Polytechnic University of Valencia)** V |
| 17.15-17-30 | Coffee break |
| 16:00-18:30 | • Origin and evolution of the common bean and the special case of the snap bean **(Roberto Papa, Marche Polytechnic University)**<br>• variation for nutritional traits in the snap bean **(Romina Beleggia, CREA)**<br>• analysis of key agronomic traits and identification of related candidates regions in snap bean multilocation field trials **(Lorenzo Rocchetti, Marche Polytechnic University)** |
| 20:30-23.00 | Dinner in Catania |


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| 15 December | Field visit day | |
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| 7:45-11.00 | Bus[b] leaving from Catania to Agrigento and check in at the hotel | Recommended accomodation: Hotel in Agrigento Hotel Dioscuri Bay Palace[c] |
| 11:30-13:00 | • Presentation of visit to Terre del Barone Farm **(Gianofrio Pagliarulo, Terre del Barone)**<br>• Visit to the Vegetable Organic Field: focus on participatory breeding of cross composite populations of *Brassica oleracea* crop | Terre del Barone Farm |
| 13:00-14:30 | Lunch on the farm | |
| 15:00-16.30 | • The Greek Agroecological approach of the Garden of Kolymbethra (Valley of the Temples) **(Giuseppe Lo Pilato)** | Garden of Kolymbethra (Valley of the Temples) |
| 17:00-17:30 | • The importance of the organic production for the human wellbeing **(Fausto Iori, NaturaSi)** V | Hotel Dioscuri Bay Palace |
| 17:30 | Aperi-Juice | |
| 19:30 | Social dinner at Hotel dei Pini, Agrigento | |
| **16 December** | **Check-out from hotel and departure** | |
| 9:00 | Bus leaving to Catania | |

*Organised by Di3A of the University of Catania and BRESOV project*

***please refer to bresovunict@gmail.com account for any questions***

*The virtual meeting will be processed via Microsoft Teams: the link will be disseminated before the workshop starts*

[a] More information about the special code "WINTER SCHOOL 2022" prices and agreements with the hotel will be sent via email
[b] The bus service will be provided by the organiser
[c] More information about the special code "WINTER SCHOOL 2022" prices and agreements with the hotel will be sent via email

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