
Conservation of crop wild relatives of Macaronesian Islands: current status and outlook

Maria Romeiras^{*2,1}, Guilherme Roxo¹, Filipa Monteiro^{2,1}, Luis Silva³, Juli Caujapé-Castells⁴, Miguel Menezes De Sequeira³, Inês Fernandes¹, Maria Cristina Duarte², and Mónica Moura³

²Centre for Ecology, Evolution and Environmental Changes (cE3c) – Faculdade de Ciências
Universidade de Lisboa, Campo Grande, 1749-016 Lisboa, Portugal

¹LEAF, Linking Landscape, Environment, Agriculture and Food, ISA, Instituto Superior de Agronomia
(LEAF-ISA) – Tapada da Ajuda, 1349-017 Lisboa, Portugal

³CIBIO-Açores - Research Centre in Biodiversity and Genetic Resources, InBIO - Research Network in
Biodiversity and Evolutionary Biology, Associate Laboratory – University of the Azores, Ponta
Delgada, Azores, Portugal, Portugal

⁴Jardín Botánico Canario ‘Viera y Clavijo’-Unidad Asociada CSIC (Cabildo de Gran Canaria) – Tafira
Alta, 35017 Las Palmas de Gran Canaria, Spain

Abstract

In view of the expected future climate changes, it is of the utmost importance to broaden the gene pool of global crop species to increase their resilience to these possible changes. The contribution of Crop Wild Relatives (CWR) to improve crop performance is growing and has largely been achieved through the donation of useful genes for biotic and abiotic stress tolerance. However, CWR are becoming increasingly threatened in the wild and are inadequately conserved, both in situ and ex situ. The Macaronesian Islands (i.e. Azores, Canaries, Madeira and Cabo Verde) are among the top biodiversity hotspots in Europe, containing a relevant genetic diversity also as regards CWR. An effective conservation and utilization of this huge native biodiversity is dependent on the availability of, and access to, high quality ecogeographic information about each taxa (i.e., their distribution, biology, ecology and conservation status, with respect to the environments in which they grow), as well as their ex situ conservation status. In this communication, we present a checklist of the most important CWR of Macaronesian Islands and make comparative analyzes of their patterns of diversity across all the archipelagos. Specifically, we will provide new data to: i) characterize the CWR diversity in each archipelago, based on taxonomic, distribution and ecological data; ii) identify the most important CWR radiations within the Macaronesian Islands; and iii) determine potential areas of occurrence for these species. New data will be available to support the design of conservation tools/plans for prioritized CWR within the Macaronesian Islands.

Keywords: Agrobiodiversity, Biodiversity hotspot, Gene Pool, in situ Conservation, Prioritizing CWR taxa

*Speaker