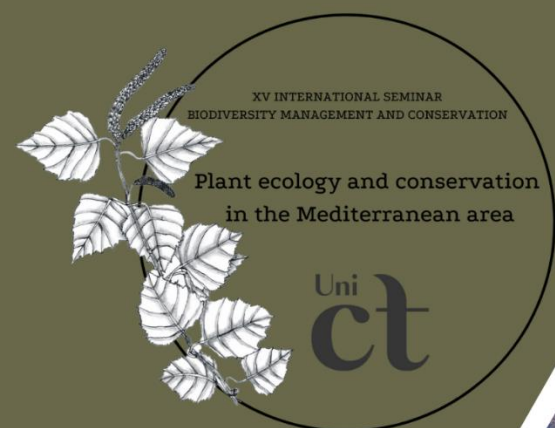


XV INTERNATIONAL SEMINAR BIODIVERSITY MANAGEMENT AND CONSERVATION

*“PLANT ECOLOGY AND
CONSERVATION IN THE
MEDITERRANEAN AREA”*

**LINGUAGLOSSA
(CATANIA, ITALY)**

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Book of Abstracts

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SiMaSeed PLUS: conservation actions for the endangered *Anthemis aeolica* on small islets of the Aeolian archipelago

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Among the objectives of SiMaSeed PLUS (Interreg V-A Italia-Malta), there are the *ex situ* and *in situ* conservation of *Anthemis aeolica* Lojac., a narrow endemic species which only known population occurs on the islet of Lisca Bianca (Panarea, Aeolian Islands, Sicily). According to Orsenigo et al., (2018), this species must be considered Critically Endangered (CR). *A. aeolica* was described by Lojacono Pojero (1903) for Bottaro, Basiluzzo and Dattilo islets, from where it is actually extinct. Despite of their small size, these islets have been exploited as seasonal pastures. This could have brought *A. aeolica* to extinction both for grazing and soil eutrophication, which favoured the establishment of more competitive, halo-nitrophilous, species. SiMaSeed PLUS aims to reinforce the population of *A. aeolica* in Lisca Bianca and to reintroduce it in Bottaro and Basiluzzo. Suitable sites for its reintroduction have been identified with the analysis of orthophotos and defined with *in situ* surveys. On Lisca Bianca three areas occupied by *Opuntia ficus-indica* and one area occupied by *Carpobrotus spp.*, both invasive alien species, were identified and mapped by drone in June 2022. Their eradication is being implemented. We are manually removing all *Carpobrotus*: the uprooted material is sealed in black plastic bags, and accumulated in a temporary storage area. The high temperatures reached inside the bags will favour the loss of vitality of the plant material and the reduction of biomass. Manual eradication is also being carried out for *O. ficus-indica*. In this case, the cladodes are minced *in situ* to produce a hydrogel which, having great water retention capacity, is used as a soil conditioner to improve the survival of the translocated plants. Protocols for the germination and propagation of *A. aeolica* have been developed. *A. aeolica* produces dimorphic cypselae which differ in their germination behaviour. Fresh matured, light cypselae, characterized by a thin pericarp, reach >90% final germination within a wide range of constant temperatures (5-25°C), in presence of light. After three months of dry after ripening, the range of temperatures at which the species reach high germination widens to 30°C. Conversely, dark cypselae, characterized by a thick pericarp, did not germinated at any of the conditions tested and may be included in the soil seed bank. The production of plantlets was more efficient using cypselae younger than two years. These were sown directly on soil and incubated, at 20/10°C, in a growing chamber. The plants were moved to open air after two months, to acclimatize before transferring to the intervention sites. By adopting this protocol, more than 1000 plants have been produced. A protocol for the *in situ* reintroduction and reinforcement is being developed by testing both direct sowing and transplanting. A randomized block experimental design was set up to test the effect of *O. ficus-indica* hydrogel and to assess the residual allelopathic effect of *Carpobrotus* on plant establishment. Moreover, we will investigate the genetic variability of *A. aeolica* remnant population using microsatellite markers (SSRs), which are commonly employed in population genetics due to their high level of polymorphism.