

The florula of hypersaline habitats in Central Mediterranean and its biological traits

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Salinity is one of the most widespread soil degradation processes. In fact in saline soils uneven temporal and spatial water distribution and localized high concentration of salts occur, characterizing restricted habitats where most of the present organisms are halophilic or salt tolerant.

Soils could be classified hypersaline when salt concentration exceeds certain thresholds (1, 2). For this study were analysed 10 hypersaline soil localities from Sicily (Birgi, Isola Lunga, Salinelle Marsala, Capo Feto, Piana del Signore, Vendicari) and Tunisia (Qurba, Khniss, Ras Dimas, Chebba).

These areas are temporarily flooded in autumn and winter, with longer permanence of water in some zones. Salt crusts with thickness of 1–3mm appear above the soil surface during the dry season, from June to September. Climate of these areas belongs to semiarid Mediterranean, characterized by an intense summer drought and a mean annual rainfall that ranges from 361 to 383mm. Mean daily air temperature ranges from a maximum of 26.6 °C in August to a minimum of 4.9 °C in January whereas for Monastir area it ranges from a maximum of 27.8 °C in August to a minimum of 12.2 °C in January. The vegetation belongs to the *Thero-Salicornietea* A. & O. Bolòs, 1950 class and is structured as a scattered mosaic of patches whose distribution is related to the flooding pattern and duration. Vegetation, in which most plants. The physiognomizing elements of these communities are halophilous pioneer swards typical of salt marshes: *Salicornia fruticosa* (L.) L., *Suaeda vera* J.F.Gmel., and *Atriplex halimus* L. The field investigations were done between spring 2013 and spring 2018. Floristic surveys and biological traits observations and measurements were performed during repeated visits. On the whole, 20 traits from those available in the TRY Plant Trait Database (<https://www.try-db.org>) were selected and were measured in site. These concerns vegetative, reproductive and dispersal traits as well: Plant growth form; Plant height vegetative; Stem diameter; Crown (canopy) length: diameter along the longest axis; Crown (canopy) width; Leaf angle (inclination, orientation); Leaf compoundness; Leaf distribution along the shoot axis (arrangement type); Leaf length; Leaf width; Leaf thickness; Flower color; Flower sex; Diaspore Typology; Dispersal unit appendages; Dispersal unit length; Dispersal unit shape; Seeds per Diaspore; Fruit type; Plant reproductive phenology timing; Species occurrence range: native vs invasive; Plant chromosome number. Chromosome data were retrieved from Chrobase, Chromosome numbers for the Italian flora, database (<http://bot.biologia.unipi.it/chrobase/index.php>) or from the Index to Plant Chromosome Numbers (IPCN) (<http://www.tropicos.org/Project/IPCN>). Nomenclature of taxa follows the updated checklists of native and alien flora of Italy (3, 4) and Euro+Med (<http://www.emplantbase.org/>) for Tunisia.

The recorded florula was compared by means of statistical analysis to that of neighboring areas with lower content of salt. The main differences concern the number of taxa that is 4 or more times lower in hypersaline soils. Saline habitats are highly selective but host species with large distribution range. A limited number of local endemic species (*Limonium* cf. *oblanceolatum* Brullo & Erben, *Linaria aegyptiaca* (L.) Dumort.) was found only in the studied areas with lower content of salt in the soil.

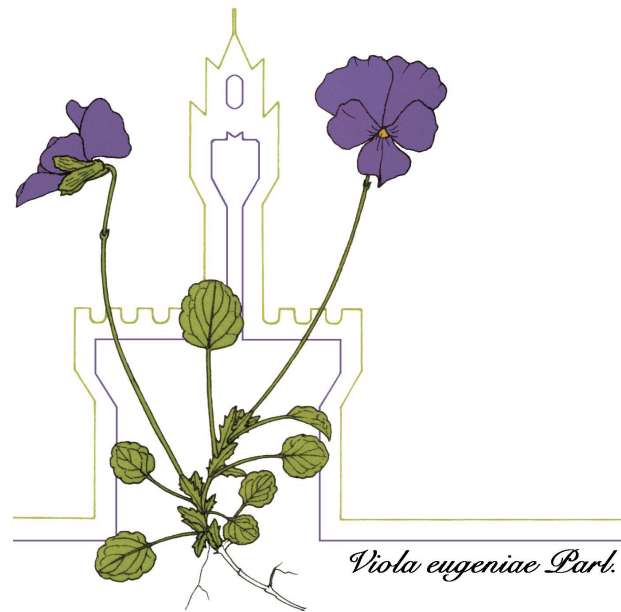
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ABSTRACTS

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