The wild food rooftop
Traditional edible plants in a green roof of Lisbon area

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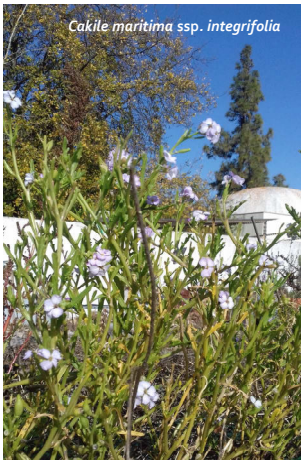
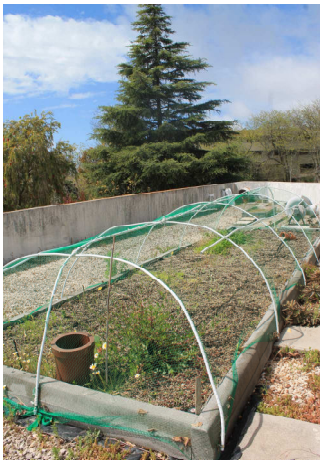
The idea

Rooftops microclimate is harsher for plants in comparison with the conditions found at ground level for the same local, with greater exposure to radiation and wind, more so in climates with dry, hot summers. Under such climates, wild plants may be an interesting solution to use in green roofs, as a way of increasing agricultural production in urban environments.

The **Rroofood project** (https://tapaco4.wixsite.com/rroofood) is currently evaluating **wild edible plants** that were traditionally used in the central and southern areas of Portugal, **for urban farming** in green roofs of the Lisbon area. The aim of the project is to find enhanced sustainable production solutions for urban agriculture in green roofs, using these particular kind of plant species. Innovative food products, based on such plant material, are currently under development.





The green roof

A **green roof** was built at Instituto Superior de Agronomia campus at *the green roof lab* (https://www.facebook.com/thegreenrooflab) to host the collection of plant species. These were selected according to three criteria: i) plants currently or historically used in **traditional gastronomy**, ii) plants from areas with **environmental conditions** of equal or greater demand than the Lisbon area, iii) species with **resilience traits**. A database was developed and fifteen species were selected among 70 for sowing in the green roof. These species belong to the following genera: *Amaranthus*, *Beta*, *Cakile*, *Chenopodium*, *Chrysanthemum*, *Nigella*, *Papaver*, *Petroselinum*, *Rumex*, *Scolymus*, *Tragopogon*, and *Viola*. Each species was seeded in a 1 × 1 m^2 area of the green roof, in three equidistant lines of 0.5 m length, with N-S orientation, except for *Tragopogon* and *Viola*, given the small quantity of seed available of these two species, which were seeded in half proportional areas and lengths. The total sowing area is a 7 x 2 m^2 plot, with 15 cm deep green roof technical substrate, placed above filter, drainage and protection layers, displayed over the roof surface, and contained with concrete blocks. Plant material is currently under analysis for nutritional composition in order to determine the most adequate gastronomic preparations.

Our work so far

Germination and development of plants was successful, except for the genera *Tragopogon*, *Rumex* and *Viola*. The species *Nigella damascena* and *Chysanthemum coronarium* **reseeded naturally**, providing evidence of this interesting feature. Another group of species (*Beta vulgaris* ssp. *maritima*, *Scolymus hispanicus*, *Petroselinum crispum* and *Cakile maritima* ssp. *integrifolia*) was still present on the roof in the next spring. Following a first gastronomic evaluation, a selection of five species (*Amaranthus album*, *Amaranthus blitoides*, *Chysanthemum coronarium*, *Nigella damascena* and *Rumex crispus*) was sowed again, yielding a total of **nine** actually present in the green roof, with potentially interesting features for further work, combining **plant physiology traits and gastronomic aptitude**.

Acknowledgements

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More info:

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