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Seed germination reports for *Centaurea tenoreana* (*Asteraceae*)

Abstract

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This work aims to study the seed germination capacity for *Centaurea tenoreana* (*Asteraceae*). This species is narrowly endemic to the territory of the Maiella National Park, in Abruzzo (Italy). The species did not show dormancy, and excellent germination results were obtained at constant temperatures both in the dark and in the light. The highest germination value (98.95%) was obtained by sowing the cypselas on 1% agar and then incubating at a constant temperature of 15°C with a light-dark photoperiod of 12/12 hours. The records of the first germination are provided for the taxon investigated.

Key words: *Asteraceae*, narrowly endemics, Michele Tenore, Maiella National Park.

Introduction

Centaurea tenoreana Willk. is a white-tomentose cornflower with deeply engraved leaves and a purple-pink flower. It grows in arid and stony meadows from 500 to 2,000 m a.s.l., where it blooms between July and August. The species is endemic to the Central Apennines and exclusive to the Maiella National Park and was chosen as the symbol of the "Michele Tenore" Botanical Garden in Lama dei Peligni (Chieti - Italy).

The work was carried out in the Maiella Seed Bank – Lama dei Peligni. The experimental design was set up starting from preliminary bibliographic analysis and from the consultation of germination protocols already tested for similar taxonomic units (Ellis & al. 1985; Royal Botanic Gardens Kew 2022), in order to identify the optimal temperature ranges and the need to apply any pre-treatments (Baskin & Baskin 2014; ISTA 2012).

The seed ecology of *C. tenoreana* had never been investigated before and there were no literature data on the germination and propagation of these species.

86. *Centaurea tenoreana* Willk. (*Asteraceae*)

Accession data:

It: Abruzzo. Fara San Martino (Chieti), loc. Milazzo (WGS84: 42.07747°N 14.14180°E), pietraia, 1,705 m a.s.l., 07 Aug 2022, *V. Di Cecco* (MSB_N258, Maiella Seed Bank).

Germination data

Pre-treatments: Soaking in water for 24h, sterilization with a solution of 3% sodium hypochlorite plus Tween 20 for 3 minutes followed by 3 rinses in sterile distilled water.

Germination medium: 1% agar, pH 5.75

Sample size: 80 seeds (20 × 4 replicates)

Germination	Thermoperiod	Photoperiod [light/dark]	T_1 [d]	T_{50} [d]	T_{max} [d]	MTG [d]
98.95%	constant 15°C	12/12h	1.5	2.5	5.0	3.9
93.62%	constant 20°C	0/24	-	-	-	-
93.61%	constant 20°C	12/12h	2.0	2.4	7.8	5.3
83.09%	constant 5°C	0/24	-	-	-	-

Observations

Centaurea tenoreana is a species that lives on stony ground and limestone cliffs. It is present only on the Maiella massif, Monte Morrone and Monti Pizzi. Growth chambers with thermoperiod and adjustable photoperiod (Panasonic MLR-352 and Panasonic MIR-154) were used. The viability of the non-germinated seeds at the end of the tests is estimated by carrying out the cutting test. The Petri dishes incubated in the dark were opened after 30 days to evaluate the final germination.

By increasing the temperature up to 25°C, the percentage of final germination drops considerably (64.21%) even if germination takes place in the first days of the test. The tests show an absence of dormancy and an excellent germination capacity of freshly harvested seeds.

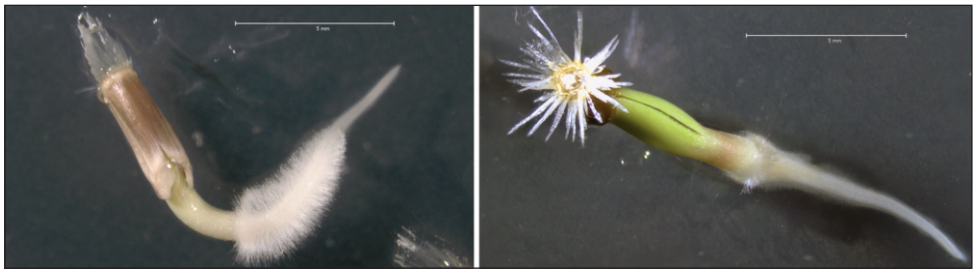

Fig. 1. Germinated seeds of *Centaurea tenoreana.*

References

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