

SCREENING WILD SUNFLOWER SPECIES FOR RESISTANCE TO *OROBANCHE CUMANA*

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Abstract

In this study, wild sunflower species were evaluated for resistance to *Orobanche cumana* under artificial conditions. Broomrape seeds were collected in 2024 from seven locations in southern and southeastern Romania (Călărași 1–3, Tulcea 1–2, Constanța 1, Brăila 1) and resistance tests were performed in 2025. The annual species (*Helianthus annuus*, *Helianthus argophyllus*) were the most susceptible to all broomrape populations. *Helianthus grosseserratus*, *Helianthus maximiliani* and *Helianthus nuttallii* subsp. *rydbergii* were infested only by the highly virulent population from Tulcea 2. In contrast, the perennial species (*Helianthus divaricatus*, *Helianthus giganteus*, *Helianthus mollis*, *Helianthus nuttallii* subsp. *nuttallii*, *Helianthus salicifolius*, *Helianthus californicus*, *Helianthus laetiflorus*) showed complete resistance to all tested populations. These results highlight the potential of perennial wild sunflowers as valuable genetic resources for breeding resistant cultivars and ensuring sustainable sunflower production.

Keywords: sunflower, *Orobanche cumana*, wild species, germplasm screening