



AGROECOLOGY FOR WEEDS

Practice Abstract N° 26

An agroecological approach for weed management in Mediterranean bergamot groves

INTRODUCTION

Weed pressure represents one of the main limitations affecting sustainable bergamot (*Citrus × bergamia*) production, since herbicides are still the dominant control method. In bergamot groves, already stressed by semiarid Mediterranean conditions, agroecological approaches are increasingly needed. In this framework, the Horizon Europe project 'Agroecology for Weeds (GOOD)' is also exploring the potential of cover crops as an environmentally friendly tool to manage weeds, enrich soil fertility and promote resilience in southern Italian bergamot groves under both organic and conventional farming systems.



Organic (on the left) and conventional (on the right) bergamot living labs.
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MAIN RESULTS – OUTCOMES

- Organic bergamot groves recorded a higher overall weed density than conventional ones, dominated by *Oxalis pes-caprae*, *Avena fatua* L. and *Fumaria officinalis* L.
- In conventional farming systems, weeds such as *Veronica cymbalaria* Bodard, *Sonchus oleraceus* L. and *Stellaria media* (L.) Vill. were also present, with their frequency depending on the applied weed management practice.
- The *Vicia villosa* Roth and *Avena sativa* L. mixture efficiently reduced weed pressure, although *Oxalis pes-caprae* remained the most persistent species.

Vicia faba minor



Trifolium alexandrinum



Vicia villosa + Avena sativa



PRACTICAL RECOMMENDATIONS

- Select the optimal sowing time and seed density for cover crops:** early sowing, coinciding with the first autumn rainfall, and a higher seed density may be required under organic farming to control weed effectively.
- Focus on specific management practices to control *O. pes-caprae*,** which remains the most persistent species even under cover cropping systems, by integrating multiple weed control methods.



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