



AGROECOLOGY FOR WEEDS

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AGROECOLOGICAL WEED MANAGEMENT REPOSITORY

The Agroecological Weed Management (AWM) Repository (<https://www.goodhorizon.eu/platform/awm-practices/>)

is a virtual space where you can freely and openly find information and educational material on current and agroecological weed management practices in the European Union. You can browse and learn about several weed management practices and crops.

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BIOLOGICAL AGENTS

DESCRIPTION & BENEFITS

Biological agents are living organisms (e.g., insects, fungi, bacteria) that naturally suppress weed growth or cause damage to weed populations. They are used as an eco-friendly approach to weed management to :

- **target specific weed species**, reducing the need for broad-spectrum herbicides and minimizing harm to non-target organisms and ecosystems
- **achieve effective weed control** while promoting ecological balance and biodiversity in agroecosystems

STRENGTHS



- Potential for long-term sustainable weed management, as biological agents can establish self-sustaining populations
- Selective targeting of specific weed species, allowing for effective weed management while preserving desirable native plants and crops
- Environmentally friendly approach, minimizing the use of synthetic herbicides and reducing ecological impacts on soil and water quality

WEAKNESSES



- Limited effectiveness against certain weed species or under specific environmental conditions, requiring proper selection and application
- Challenges associated with mass production, formulation, and distribution of biological agents, impacting the scale and cost-effectiveness of operations
- Risk of non-target effects on beneficial organisms or unintended crop damage

OPPORTUNITIES



- Biotechnological research and innovation in identifying, isolating, and developing new biological control agents
- Novel solutions for weed management in diverse agricultural systems and landscapes
- Synergies between researchers, farmers, and agrochemical companies to develop and deploy effective biological control strategies

THREATS



- Potential for weed resistance to biological agents over time, similar to the development of resistance to synthetic herbicides
- Perception of farmers regarding the reliability and effectiveness of biological agents compared to conventional weed management methods, impacting adoption rates
- Regulations and approval processes for biological agents, leading to problems in availability, market access and cost of purchase



TIPS

- **release only beneficial insects or apply microbial agents** that target specific weed species
- **promote the activity of native weed-suppressing organisms** already present in the agroecosystem and avoid exogenous introduction
- **create favorable habitat conditions to natural enemies of weeds** (e.g., different food sources, canopy adjustments)
- **always collaborate with researchers and advisors** to ensure that the introduction of a biological agent will not cause unintended consequences to crops, native flora and fauna, and the agroecosystem
- **follow the regulations, laws, and labels of products** regarding the introduction of biological agents
- **be aware that their effectiveness may be low and the results may not be quick**

LIABILITY DISCLAIMER

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