



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.

The **Agroecological Weed Management (AWM) Toolbox**, our Decision Support System that supports the user to reduce the use of synthetic herbicides and/or improve weed management by combining different Agroecological Weed Management (AWM) strategies with cover crops is LIVE !

<https://dss.goodhorizon.eu/>



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DESCRIPTION & BENEFITS

Mulching + mechanical control combines soil cover with direct physical weed removal. Mulches, such as straw, compost, crop residues, paper, biodegradable films or plastic films, reduce weed emergence by blocking light and creating a physical barrier. Mechanical control, such as hoeing, cultivation, mowing, brushing, finger weeding or inter-row weeding, removes weeds that emerge through gaps, planting holes, crop rows or thin mulch areas. This combination can:

- **reduce weed emergence**
- **control weed escapes**
- **reduce reliance on herbicides**
- **protect soil from erosion and moisture loss**

40

MULCHING + MECHANICAL CONTROL

STRENGTHS

- Strong weed suppression by combining a physical soil barrier with direct removal of weeds that escape through gaps or crop rows
- Improves soil protection by reducing erosion, limiting evaporation and moderating soil temperature, especially when organic residues are used
- Could improve crop establishment and early growth by reducing weed competition during sensitive crop stages

OPPORTUNITIES

- Could reduce reliance on synthetic herbicides by combining preventive weed suppression with non-chemical direct control
- Could be adapted to organic, vegetable, orchard, vineyard and small-scale farming systems using locally available mulch materials
- Could be integrated with biodegradable mulches, precision cultivation, cover crop residues and reduced-tillage systems for more sustainable AWM

WEAKNESSES

- Requires careful coordination between mulch application, crop establishment and mechanical weeding operations
- May require additional labour, machinery, transport or material costs, especially where mulch materials are expensive or bulky
- Some weeds may still emerge through planting holes, mulch edges, thin mulch layers or decomposed organic residues

THREATS

- Poor mulch coverage, rapid mulch breakdown or disturbance by machinery can create gaps where weeds establish
- Mechanical control may damage crops, mulch films or bring new weed seeds to the surface if poorly adjusted
- Plastic mulch waste, contamination risks or limited availability of suitable biodegradable materials may create environmental or regulatory concerns

TIPS

- **choose mulch material** according to crop, weed pressure, climate, soil conditions and available machinery
- **apply enough mulch** to block light and limit weed emergence
- **use mechanical control before mulching** to remove the first weed flush
- **control weeds** that emerge in planting holes, crop rows, edges or gaps in the mulch
- **avoid deep or aggressive mechanical operations** that disturb the mulch layer and expose weed seeds
- **monitor mulch breakdown and weed escapes** during the season

LIABILITY DISCLAIMER

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