



AGROECOLOGY FOR WEEDS

www.goodhorizon.eu

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/>



#@Agroecology is GOOD

Version 2.0 – June 2026



27

COVER CROPS + ROLLER CRIMPER

DESCRIPTION & BENEFITS

Cover crops + roller crimper is a combination of practices in which a cover crop is grown before or alongside the main crop and then mechanically terminated by rolling and crimping. The roller crimper flattens the cover crop and damages the stems, creating a surface mulch that remains on the soil. This mulch can suppress weeds by reducing light reaching the soil surface, physically obstructing weed emergence. The practice is especially relevant in reduced-tillage, no-till, organic and low-input systems where weed management relies on prevention, soil cover and non-chemical methods. It could:

- **suppress weed emergence** through a dense cover crop mulch
- **reduce soil disturbance compared with tillage-based termination**, conserve soil moisture & protect the soil against erosion and temperature extremes
- **contribute organic matter and improve soil biological activity** over time
- **contribute to crop diversification** through the adoption and implementation of a combination of sustainable agricultural and agroecological weed management practices

STRENGTHS

- Creation of a dense surface mulch that suppresses weed emergence by reducing light, physically obstructing seedlings and slowing weed establishment
- Reduction of soil disturbance compared with tillage-based cover crop termination, helping to protect soil structure, reduce erosion and maintain soil biological activity
- Conservation of soil moisture and contribution to soil health through residue cover, organic matter inputs and improved habitat for soil organisms

OPPORTUNITIES

- Supports reduced-tillage, no-till, organic and low-input systems by providing a non-chemical weed suppression strategy based on soil cover
- Could reduce reliance on herbicides and repeated mechanical cultivation when integrated with crop rotation, competitive crops and other preventive agroecological weed management practices
- Could improve long-term agroecosystem resilience by combining weed suppression, soil protection, moisture conservation and biodiversity benefits

WEAKNESSES

- Effectiveness depends strongly on producing enough cover crop biomass as poor establishment, low biomass or uneven stands could result in weak weed suppression
- Requires appropriate equipment and good synchronization between cover crop termination, planting or transplanting, and cash crop establishment
- May delay soil warming, complicate planting operations, immobilize nitrogen temporarily or reduce crop establishment if residue is excessive or poorly managed

THREATS

- Incorrect termination timing can lead to cover crop regrowth, competition with the cash crop or cover crop seed production acting as volunteer plants
- Weed escapes may occur if the mulch layer is thin, decomposes rapidly, is disturbed during planting, or if perennial weeds are present
- Weather variability, drought, excessive rainfall or short growing windows may limit cover crop biomass production or prevent timely rolling and planting

TIPS

- **select cover crop species that produce high biomass and are suitable for roller-crimping**, such as cereal rye or other grasses in many systems, while considering climate, soil type, following crop and local weed pressure
- **aim for sufficient cover crop biomass before rolling**, because thin or poorly established cover crops usually produce weak mulch and limited weed suppression
- **terminate at the correct growth stage** upon checking with peers and advisors & avoid rolling too early, as the cover crop may regrow and compete with the main crop, or too late if there is a risk that the cover crop produces viable seeds and becomes a problem in the following crop
- **align rolling direction with crop planting direction** to facilitate sowing or transplanting into the mulch & ensure that the planter, seeder or transplanter can operate through high-residue mulch without poor seed placement and uneven crop emergence
- **monitor soil moisture and temperature**, because mulch can conserve water but may also delay soil warming
- **check for weed escapes after crop establishment**, and use complementary control means if needed, especially in areas where mulch is thin or disturbed
- **start with a small area to test cover crop species**, biomass production, roller-crimper performance, crop establishment and weed suppression under local conditions before scaling up

LIABILITY DISCLAIMER

This is the second version of the AWM repository released in April 2026. While every effort has been made to ensure the accuracy and reliability of the information provided in this factsheet, we make no representations or warranties of any kind, express or implied, about the completeness, accuracy, reliability, suitability, or availability of the information contained herein for any purpose. Any reliance you place on such information is therefore strictly at your own risk. In no event will we be liable for any loss or damage, including without limitation, indirect or consequential loss or damage, or any loss or damage whatsoever arising from loss of data or profits arising out of, or in connection with, the use of this factsheet.