GOOD

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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HOT FOAM

DESCRIPTION & BENEFITS

Hot foam is a novel non-chemical weed control practice that utilizes organic foam with hot water to:

- **cause a burnout effect to weeds** by suffocating and desiccating weed tissues offering effective weed control
- **reduce the reliance on synthetic herbicides** as it provides an environmentally friendly alternative that can by applied by farmers and gardeners in agricultural and urban settings
- **maintain the soil health** as hot foam does not disturb the soil structure

STRENGTHS

- Reduction and potentially elimination of herbicide dependence as hot foam provides a reliable non-chemical weed control practice
- Quick results as the control is immediate causing weed suppression
- Effectiveness against annual weeds and perennial weeds (often with multiple treatments due to regrowth)

WEAKNESSES

- High costs and resource use, as it requires energy, fuel and water which may increase the operational costs and the environmental impact
- Ineffective against certain species (mainly perennial weeds) because hot foam does not have an impact on the root system allowing regrowth from underground propagules
- Specialized equipment, complexity (e.g., varied application in different crops), and training is needed which may deter smallholder farmers from investing in it

OPPORTUNITIES

- Non-chemical weed control methods are accepted by the public and consumers and the use of hot foam is expected to increase
- Effective alternative to synthetic herbicides and one more option for organic farmers and sensitive areas (e.g., urban areas)
- Reduction of weed seed set through a single hot foam treatment and long-term effect with multiple treatments that could potentially deplete the weed resources and reduce the soil seedbank

THREATS

- Weather dependency (e.g., rain, moisture, high temperatures) which can reduce the efficacy of hot foam and limit the operations
- Potential emerging technologies for non-chemical weed control may compete with hot foam and lead to limited market share and adoption
- Fluctuations in market prices for fuel and water as hot foam requires these resources

TIPS

- **apply hot foam at the appropriate weed growth stage** to maximize effectiveness. Seedlings and young plants are more susceptible to heat damage. If the goal is the to reduce seed set, then the proper timing for application is the flowering stage
- **monitor regularly the treated areas** to detect potential weed regrowth and apply hot foam again if it is necessary
- **optimize resource use** to minimize the use of fuel and water, which should be combined with training of operators
- **plan the applications according to the weather conditions** to ensure optimal effectiveness (e.g., avoid risk of rain)
- **combine hot foam with other weed management practices** to create a holistic agroecological weed management strategy

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