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PRACTICE ABSTRACT N°5

Control of the parasitic weed Dodder in buckwheat or lentil cultivation through intercropping with linseed in Central Italy

Problem

Buckwheat and lentil are interesting spring crops for providing gluten-free food and maintaining soil fertility, but the severe pressure exerted by the parasitic Dodder weed (*Cuscuta ssp*) makes these crops hard to grow.

Solution

Intercropping buckwheat/lentil with linseed reduces the weed pressure when compared to sole crop cultivation (Figure 1 and 2) This technique has been developed and tested by an organic farmer in Tuscany, Italy.

Benefits

Linseed covers the soil quickly which hinders Dodder's growth and reduces the need for chemical or mechanical weed control. It also improves water use efficiency in heavy soils and enables a higher crop diversification at farm level.

Applicability box

Theme

Cropping system, Arable Crop, Weed management, Agroecology.

Keywords

Legumes, Oil Crops, Weed control, Diversification, Health foods.

Context

Temperate and Mediterranean Region.

Application time

Spring Sowing.

Required time

Crops need to be separated after harvest.

Period of impact

From sowing to harvest.

Equipment

Wheat sowing machine.

Combine harvester.

Seed cleaner (Rotary cleaner, vibratory sieve or gravity separator).

Best in

Farms in dry climate and clay soil conditions, having dodder as the predominant weed.

Practical recommendations

Sowing densities

- 40 kg/ha of lentil with 25kg/ha of linseed (Figure 1).
- 60 kg/ha of buckwheat with 35kg/ha of linseed (Figure 2).

Soil preparation

- No tillage is required before the cultivation.

Sowing period

- Both crops, buckwheat/lentil with linseed are sown together with a wheat seed drill.





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Harvesting period

- Lentil and buckwheat have a shorter life cycle than linseed. The harvest occurs at lentil/buckwheat maturity, with a small loss of linseed yield. In this intercropping system, the main role of linseed is weed control rather than production.
- The two crops are harvested together with the same combine harvester.

Sorting phase

- Linseed can be easily sorted using a seed cleaner (rotary cleaner, vibratory or gravity separator) and sold as food or used as seed for the next cultivation.



Figure 1: Dodder in sole lentil (Left) and Intercrop lentil-linseed (Right) in Tuscany's organic farm. Photo: Sara Passerini



Figure 2: Dodder in sole buckwheat (Left) and intercrop buckwheat-linseed (Right) in Tuscany's organic farm. Photo: Sara Passerini





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Further information

Further readings

- Kumar, P., Siddiqui, M. Z., Prajapati, S. K., Singh, S., Kumar, A., & Rawat, D. K. (2023). Study of the Most Suitable Combination of Intercropping Systems of Indian Mustard (*Brassica juncea* L.) with Chickpea, Lentil, Linseed and Field Pea. *International Journal of Environment and Climate Change*, 13(11), 3777-3789.
- Mandal, B. K., & Mahapatra, S. K. (1990). Barley, lentil, and flax yield under different intercropping systems. *Agronomy Journal*, 82(6), 1066-1068.
- Penny Roberts, Sard Clare and Alyce Dowling, University of Adelaide. T-Intercropping-A Tool to Improve Profitability in Broadacre Systems. 2020 Hartfield day guide [link](#)

Weblinks

- Directorate of Pulses Development, Govt of India. Lentil production Technology. 2017. [link](#)

About this practice abstract

Authors: Matteo Petitti, Daniela Ponzini, Michele Salva, Rete Semi Rurali (RSR) , Piazza Brunelleschi 8 50018 Scandicci-IT, rsr.bio

Publisher: IFOAM Organics Europe, Rue Marie Thérèse 11, 1000 Brussels -BE, organicseurope.bio

Date : 13/02/2024

Contact: info@semirurali.net

Review: Claire Morelle (IFOAM Organics Europe), Riccardo Bocci (RSR) and Giuseppe Desantis (RSR)

IntercropVALUES aims to exploit the benefits of intercropping to design and manage productive, diversified, resilient, profitable, environmentally friendly cropping systems acceptable to farmers and actors in the agri-food chain. As a multi-disciplinary and multi-actor project, it brings together scientists and local actors representing the food value chain. It includes 27 participants from 15 countries (3 continents) from a wide diversity of organizations and stakeholders. The project will run for four years and started in November 2022.

Project website: <https://intercropvalues.eu/>

Permalink: [Organic farmknowledge.org/tool/53688](https://organicfarmknowledge.org/tool/53688)

