

# Living mulches in field vegetables

A permanent cover crop grown as living mulch can replace plastic or biodegradable films, then ensuring weed control, nutrient cycling and reducing the ecological footprint of field vegetable systems

Readiness for use: 

Efficacy: 

## How it works

- A permanent cover crop is grown as living mulch in full width or only on raised beds within field vegetable crop stands. Vegetable crops are established by direct transplanting on no-tilled or strip-tilled soil
- Duly and timely (e.g. one year before the planting of a spring vegetable crop) establishment of the cover crop is crucial to ensure a long-lasting stand, adequate soil cover and full delivery of ecosystem services
- Although the use of permanent living mulch leads to permanent no-till systems, when preparing the seedbed of the living mulch the use of conventional inversion tillage (e.g. 20-30 cm mouldboard ploughing) is recommended to improve soil physics, reduce weed infestation and eventually incorporate significant amount of organic fertilisers/amendments.
- The seedbed should be finely prepared (stale seedbed recommended) and soil levelling should be implemented in order to facilitate living mulch mowing/cutting/management, and to reduce waterlogging risks
- The choice of the living mulch should reflect the targeted ecosystem service(s) (e.g., legume species for N fixation, species other than *Brassic*as for stimulating mycorrhizal-driven P solubilisation
- Special attention should be paid to soil pH (many legume species are sensitive to non-optimal pH), limestone and soil texture
- In sites with regular dry conditions in summer, annual self-reseeding crops (e.g., *Trifolium subterraneum*, *Medicago polymorpha*) should be preferred to permanent ones (e.g., *Trifolium repens*), as they will stop growing at the beginning of the summer, thus not competing with the crop, before reestablishment in the fall. Conversely, in winter cold areas, frost resistant species should be chosen.



Figure 1. Broccoli cabbage established by strip tillage on subterranean clover living mulch



Figure 2. Fennel on white clover living mulch in no-till plots



Figure 3. Untimely establishment of the living mulch can lead to failure in soil cover and weed control

## Read more

[Legume Ecotypes and Commercial Cultivars Differ in Performance and Potential Suitability for Use as Permanent Living Mulch in Mediterranean Vegetable Systems](#)

[Innovative Living Mulch Management Strategies for Organic Conservation Field Vegetables](#)

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