



The use of strawberries as living mulch in organic orchards and vineyards

Problem

Weed management under the trees is crucial in organic fruit and vine production. Insufficient weed control might lead to competition and reduce yield, while mechanical tillage exposes the soil to excessive mineralisation of organic matter, erosion, leaching and loss of biodiversity.

Solution

Living mulch is a sustainable solution for weed management. The selected species (e.g. strawberries) create a stable and moderately competitive plant community (*coenosis*). Living mulch is particularly suitable in situations where soil tillage is otherwise unavoidable.

Impact

Living mulch reduces the need for further soil management, starting from the second year after planting vines or trees. It assures a full soil cover during winter, thus reducing soil erosion and weed competition. It maintains a diversified plant community and provides potentially a secondary income.

Applicability box

Theme

Weed management

Keywords

Soil cover, secondary income.

Geographical coverage

Particularly suitable in hilly and cool areas of the Mediterranean climate.

Application time

Permanent

Required time

30 hours/ha

Period of impact

Summer: for reduction of water competition. Autumn/winter for reduction of leaching and erosion.

Equipment

The use of an underground blade is suggested but not mandatory.

Practical recommendation

- Select species with a limited summer growth (a sort of stasis or summer dormancy) to avoid or reduce water competition during the dry season.
- In mild winter climates (like Central Italy), transplant strawberry in autumn (generally the rainy season) to avoid drought stress to young strawberry plants.
- Transplant strawberry plants after soil tillage under the rows of trees or vines, to stimulate competition of living mulch against weeds at the initial stage.
- Transplant the strawberries close to the main trunk. One plantlet per side should be enough to reach a quick soil cover in cool environments (double the density in case of clay soil or risk of water stress).
- In the case of low tree/vine density, the strawberry must be planted along the row even far from the trunk (1 plant per meter), thus it is necessary to use an iron stick to protect the isolated plants against damages during soil tillage (picture 2).
- Remember that shallow tillage with a horizontal blade stimulates the growth of strawberry but strongly damages the tap root of several weeds.



Picture 1 (left): Planting of strawberries close to the main trunk. Floor colonisation by stolons.

Picture 2 (right): Soil tillage by an horizontal blade. Strawberry roots are not damaged by the blade.

Further information

Video

- Check the following video for further instructions [EN]:
<https://www.youtube.com/watch?v=xYpvzJZYUml>

Weblinks

- Check the [Organic Farm Knowledge Platform](#) for more practical recommendations.
- DOMINO web page: <http://www.domino-coreorganic.eu/>

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