



UNIVERSITÀ  
CATTOLICA  
del Sacro Cuore



## PRODUZIONE DI CIBO APPROPRIATO: sufficiente, sicuro, sostenibile

### GUIDELINES FOR SOIL MULCHING

#### WHY SOIL MULCHING?

Mulching is an agronomic technique that consists in the use of organic vegetable matter or inorganic materials, where are available, to cover the soil in order to produce some advantages for the soil and the cultivated crop.

In developing countries, this technique, it is used also to increase the level of organic matter in the soil, as a consequence increase the global fertility.

#### GREEN MULCHING

Green mulching consists in the use of organic vegetable materials to maintain covered the soil.

It is possible to use some organic material such as:

- crop residues of the precedent cultivation,
- cuttings of cover crops,
- leaves and branches of trees that are available in the area of cultivation,
- weeds and shrub residues.

Regardless of the origin of the material used, it is important keep in mind to control the absence of weeds, insects and pathogens that could cause damage to the crop. For this reason it is important to use crop rotation, alternating species belonging to different botanical families, in order to reduce the risk that any pathogens present on the crop residues could damage the crop in succession. Also, for the herbs is good that the collection and application to land occurs before they go to seed.

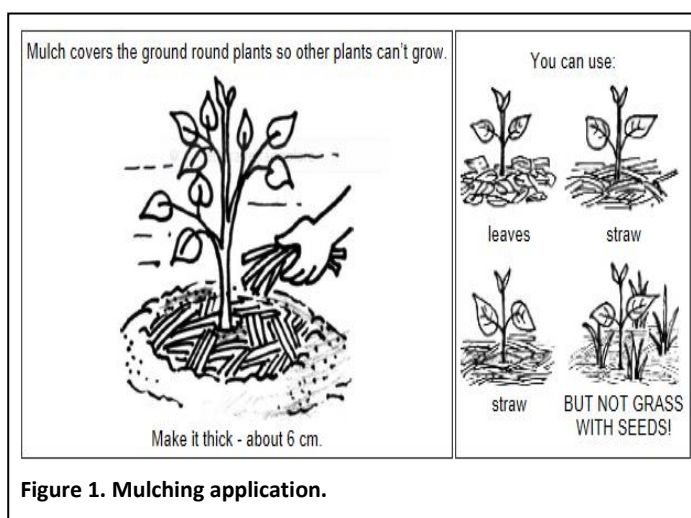


Figure 1. Mulching application.

The best technique to apply this organic residues on the soil is the localized application. The figure 1 shows that is necessary to apply a layer thick about 6 cm around each plant.

In sub-tropical regions are mainly used herbaceous residues, leaved on the soil by grass or weeds (fig. 2), shrubs (fig. 3), leaves of banana trees (fig. 4), cuttings of trees, organic materials present in the forestry subsoil.



**Figure 2. Herbaceous residues.**



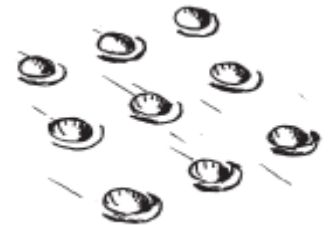
**Figure 3. Shrubs residues.**



**Figure 4. Leaves.**

In addition there is the possibility to use this type of materials to make compost and, subsequently, utilize it as organic mulching.

Compost is localized in a pit, about 10 cm depth, that is dug around each plant (fig. 5). And the layer of this mulching, that is put in the pit, should reach 5-6 cm above the ground level (fig. 6).



**Figure 5. Localized application of compost.**

#### ADVANTAGES OF MULCHING APPLICATION

The agronomic technique of mulching presents some benefits for the crop-soil system, in fact it:

- controls/reduces the growth of weeds;
- allows to maintain constant the soil moisture;
- reduces the oscillation of soil temperature;
- allows the growth of roots, consequently the wellness of the crop;
- improve soil fertility;
- protects the soil from erosion and water run-off;
- avoids that vegetables are covered and dirty from the soil particles.



**Figure 6. Compost mulch layer.**