

MULCHING OF VEGETABLE CROPS

02-May-17 Dr. Muhammad Rashid Shahen

MULCHING

- Mulching is the covering on the soil surface to conserve soil moisture by materials like polyethylene film, maize cobs and straws, which are employed to reduce the evaporation or loss of moisture from the soil surface.
- Mulching is one of the important cultural practices in the growing of vegetable crops.

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ADVANTAGES

- **Surface insulation**
 - to conserve moisture
 - to moderate extremes in temperature
 - to control weeds
- **Soil amendment**
 - to improve soil aggregation and granulation
 - to increase water absorption and retention
 - to prevent soil compaction and improve aeration

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ADVANTAGES

- **Beautification**
 - to make surface areas more attractive
 - to make surface areas more usable for paths, play and sitting areas
 - to make areas easier to maintain
- During summer this improves both root growth and nutrient availability.
- Winter mulches reduce the risk of root damage.
- Soils are improved with organic mulches as lower layers decompose and become incorporated into the soil. These can be incorporated into the soil to increase organic matter content.
- Reduce the incidence of mud-splashed flowers and vegetables after heavy rains, and decrease the frequency of vegetable rot caused by soil contact.

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DISADVANTAGES

- The application of mulch requires labour of varying degrees, depending on the material selected.
- Mulch moisture around newly emerging seedlings or perennials can provide an ideal environment for disease, such as damping-off or crown rot. Intensity of disease is increased by long periods of rain. Disease may over frost in the mulch.
- Insects and rodents who find it an attractive habitat, can cause plant damage. These problems can be minimized by avoiding direct contact between plant and mulch.
- Premature applications of organic or black plastic mulches may retard soil warming and hence the growth of the plants preferring warmer soils (tomato, pepper and egg plant). **Exception is clear plastic mulch.**

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DISADVANTAGES

- A very thick mulch or one prone to caking can impede the uptake of water and air by the soil.
- Mulches with carbon-to-nitrogen ratio greater than 3:1 can steal nitrogen from the soil during decomposition, causing nitrogen deficiency in mulched plants.
- Dry mulches which are combustible may be a fire hazard
- Woody mulches can be a vector for termites

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IMPORTANT POINTS ABOUT MULCHING

- A practical mulch should be easily available, cheap and easy to apply. Availability and cost vary from region to region.
- Mulching materials may be found in yards, gardens, centers, lumberyards, sawmills, dairy farms, tree-service firms, breweries, and food-processing plants.
- A suggested depth is 0.5 to 10 cm; too little will give limited weed control and too much will prevent air from reaching the roots.
- Mulches should be applied prior to active weed growth and summer droughts (summer mulch) or before the ground freezes (winter mulch)
- For warm season crops, the mulching should be delayed until blossoms appear.

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TYPES OF MULCH

- Many types of material, organic and inorganic, may be used as mulch.
- **Organic mulches** may break down in one season or less or persist for more than one season.
- Organic mulch is used mainly in vegetable and flower gardens or around newly planted trees and shrubs. They are usually decomposed enough by the end of the growing season that they can be spaded or plowed under, increasing the organic matter content of the soil and thereby improving soil structure.

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TYPES OF MULCH

- **Inorganic mulches** may be gravel, crushed stone or some manufactured product. Most of these materials are not as beneficial to plants as the organic mulches are because they do not improve the structure or nutrient content of the soil.
- Black plastic mulch is useful in the vegetable garden.

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Examples of Mulch Types

- Inorganic: lava rock, crushed brick, river stone, or pea gravel.
- Organic: tree bark, wood chips, grass clippings and shredded leaves, recycled wood, or ground corn cobs.



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MULCH MATERIALS

- Bark
- Hulls
- Compost
- Corn cobs
- Grass clippings
- Ground tobacco stems
- Leaves
- Newspaper
- Peanut shells
- Peat moss
- Pine needles
- Polyethylene films
- Straw, hay, salt-marsh hay
- Sawdust
- Stone
- Sugarcane (crushed)
- Wood chips

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MULCHING VEGETABLES

- The primary reason for mulching vegetable is to conserve soil moisture.
- Crops most practical to mulch are beans, peppers, sweet corn, tomatoes, vine crops and other long-term summer crops with large amounts of foliage.
- Long-term crops started in the cool season, including broccoli, cabbage, cauliflower and potatoes, will also yield better when they are mulched.
- Asparagus and rhubarb should be kept constantly mulched to conserve soil moisture and reduce weed problems.
- Some of the best mulches for annual vegetable crops are composts, straw, hay or other materials that will be largely decomposed at the end of the season.

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