

# Compost: Mulching and Erosion Control



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# Mulches

- Suppress weeds,
- Conserve soil moisture,
- Reduce soil erosion, and
- **Modify the soil temperature.**  
(makes it cooler in the summer, reduces rapid decline and fluctuation in the winter).



# Mulches

Horticultural Parameters	Recommended Range
pH	6.0 – 9.0
Electrical Conductivity	10.0 mmho/cm max
Moisture Content	35 – 55
Organic Matter Content	>30
Particle Sizing	99% pass 3" screen >25% pass 3/8" screen
Maturity (Solivita)	6-8
Nutrients	N/A
Visual contaminants	<1% (looks are important)

# Mulches

- Compost often mixed with other material such as wood chips.
- Usually spread 1" to 4" depth.
- Do not place against base of plant.
- Be careful with sensitive plants.
- Moisten after placing on moist soil.

# Erosion Control

Erosion is the detachment and movement of soil by moving water. Splash erosion occurs when rain dislodges and detaches soil particles from unprotected sites.

If rain falls at a rate greater than the infiltration rate of the soil, the water is not absorbed and the dislodged soil particles erode away.



# Erosion Control

**Water erosion occurs in two ways:**

Sheet erosion occurs when raindrops strike the soil, bouncing loose particles that are then rinsed away with draining rainwater. It can be reduced by placing residues, such as compost over the soil :

- to absorb the energy of falling raindrops and
- to reduce slow runoff so particles that do dislodge have time to resettle.

Gully or “rill” erosion occurs when concentrated flows wear a channel into the earth. Over time, the rill becomes a gully.

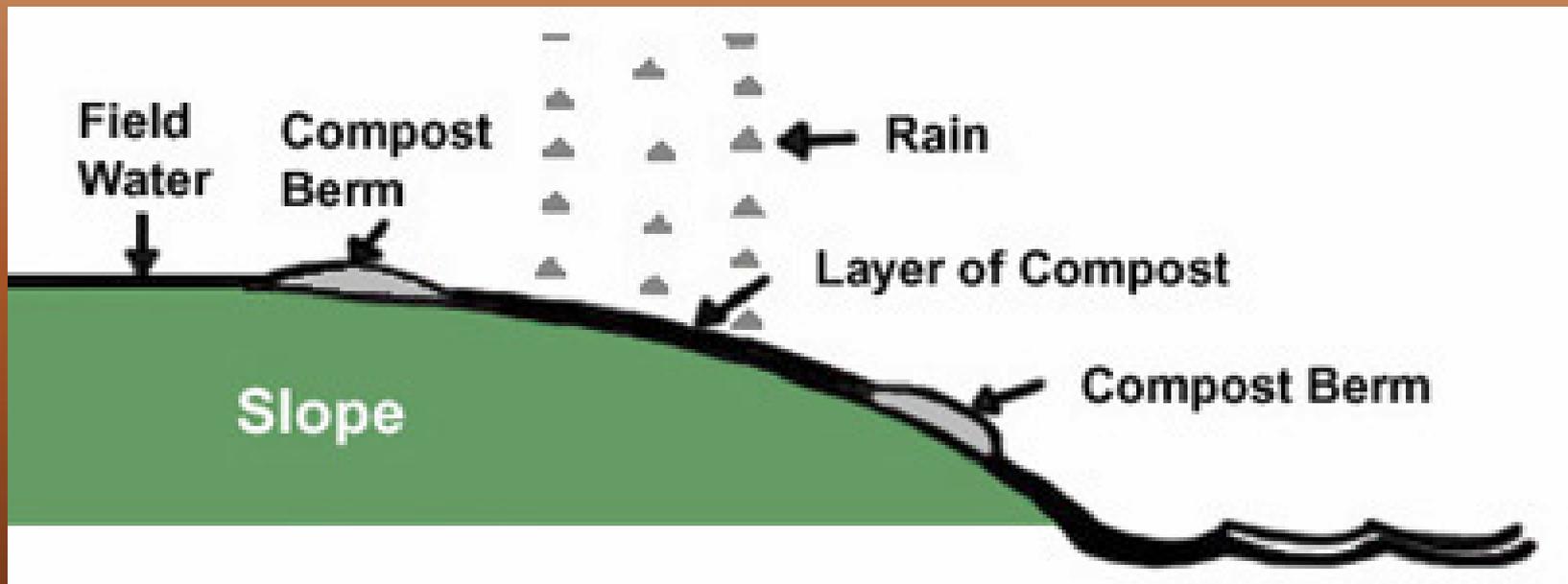


# Compost controls erosion by:

- ❑ Increasing water infiltration in to the soil surface.
- ❑ Reducing runoff and soil particle transport in runoff.
- ❑ Increasing plant growth and soil cover.
- ❑ Reducing soil particle dislodging.
- ❑ Increasing water holding capacity of soil which reduces runoff.
- ❑ New vegetation can be established directly into compost.

# Two basic methods for using compost in erosion control:

- *compost filter berms.*
- *compost blankets and*



# When used as a *filter berm*, compost:

- Reduces sediment reaching surface water by acting as a filter.
- Reduces fertilizers, chemicals, metals, and other pollutants from reaching surface waters in storm water runoff.
- Can be used as a waste reduction tool -- i.e., keeps used silt fences out of the landfill and uses recycled organic materials.



# Filter berms:

- ✓ Need a range of particle sizes. (coarse is important)
- ✓ Usually 1 – 2 feet high. 2.5 – 4 feet wide.
- ✓ Can be seeded.
- ✓ More berms will be
- ✓ needed on long slopes.
- ✓ Can be spread over slope
- ✓ After vegetating
- ✓ Always perpendicular to slope



# Compost blankets work by:

- Protecting the soil surface from the erosive energy of falling rain
- Absorbing water so that flows are reduced
- Distributing water so that when flow does occur, it is slower and dispersed
- Providing a growth media for plants to further reduce runoff and erosion
- Providing an opportunity for percolation into the soil



# Compost blankets are recommended for

- Controlling erosion on disturbed areas such as construction sites, roadways, and
- Other disturbed or excavated land areas with slopes of no more than 2:1 .

*( Studies at Iowa State University have shown that compost blankets applied to 3:1 slopes perform very well, even when measured rainfall totaled 2 inches in 30 minutes)*

# Compost Blanket application rates

- ✓ Range from ½- 4-inches deep
- ✓ <2 “ if area is to be vegetated
- ✓ 2 – 4 inches if vegetation is not planned
- ✓ Seed and fertilizer can be blended into blanket



# General specifications

## Compost Blanket

## Filter Berm

Particle size	3/8-1/2 in. screen 75%	3/8-1/2 in. screen 50%
	2-3 in. screen 100%	2-3 in. screen 100%
Moisture content	20-50%	20-50%
Soluble salt	3.0 - 6.0 mmhos/cm	4.0 - 6.0 mmhos/cm
Organic matter	30 - 70%	30 - 70%
pH	6.0 - 8.0	6.0 - 8.0
Nitrogen content	0.5 - 2.0%	0.5 - 2.0%
Human made inerts	0.0 - 1.0%	0.0 - 1.0%
Application rate/size	3/4 - 3 in. depth	1-2' H x 2.5-4' W
Maturity	Yes/High	Yes/Mod. High

# Compost Filter Socks

- Compost filter sock is a type of contained compost filter berm.
- Compost filter socks consist of mesh tubes filled with composted material
- Placed perpendicular to sheet-flow runoff.
- Same considerations and use as filter berms.
- Require some specialized equipment and knowledge.

