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Moisture and Mulch

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Mulch – Chunky vs. Fine

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A trial conducted by Yates and reported in Gardening Australia magazine and Landscape Contractor highlights a couple of important differences between chunky and fine mulches.



Twenty mulches with different particle sizes were tested for two properties – their ability to reduce evaporation from the soil, and their ability to ‘soak up’ water rather than allow it to travel through to the soil.

The mulches fell into four categories:

- **Chunky** – 100% of particles did not fit through a 5mm screen.
- **Mostly Chunky** – 65% of particles were too big to fit through a 5mm screen.
- **Chunky-fine Combination** – a mix of half chunky and half fine particles (able to fit through a 2mm screen).
- **Mostly Fine** – 65% of particles were able to fit through a 2mm screen.

Reducing Evaporation Rate

To test this, a layer of each mulch was added to soil to a depth of 25mm. Both soil and mulch were irrigated and the relative evaporation rate was measured over the next 13 days. Bare soil was rated at 100, so any number smaller than 100 meant that the mulch was reducing the amount of evaporation. A number larger than 100 meant that evaporation through mulch was even greater than that for bare soil.



Soaking Up Water

The tendency for mulch to soak up water rather than allow it to travel through to the soil and plant roots was tested by pouring 500ml of water onto each of the mulches (in pots).

The pots were weighed before and after the water was applied. A lower number suggests the mulch has a lower tendency to absorb the water. In other words, the lower the number the greater the amount of water that passes through the mulch and is available to plants.

Results

Refer to the chart below for the result details. Chunky mulch rated the best for reducing evaporation rate, and for allowing water to travel through. The blend of Mostly Chunky also rated well, but had a tendency to soak up twice the amount of water as the Chunky blend.

Mostly Fine mulch did not perform well. It did the poorest job of reducing evaporation and, worst of all, it actually robbed the soil of moisture. This is because water moves into fine mulch by capillary action, so that the water loss can be higher than from bare soil.

The fine mulches also soaked up over four times more water than chunky mulches. This means that only water from heavy rain or irrigation will actually reach the soil under a thick layer of fine mulch.

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Particle size	Relative evaporation rate	Irrigation water held per 500ml of dry mulch (ml)	Mulch ranking
Bare soil	100		

Chunky	100% chunky	40	38	Excellent
Mostly	65% chunky,	50	78	Good
Chunky	35% fine			
Chunky-fine	50% chunky,	65	112	Fair
Combo	50% fine			
Mostly fine	35% chunky,	110	172	Very poor
	65% fine			

Tips for home gardeners

If using mulch with fine particles that are 2mm or smaller, mix it with chunkier mulch with a particle size greater than 5mm.

Don't apply a thick layer of fine mulch, as it will hold a lot of water that plant roots won't ever benefit from.

The chunkier the mulch, the thicker it can be applied. Chunky mulches can be used up to 600mm in depth without concern for blocking rain and irrigation.

Posted by [Tracey Martin](#) at 12:20 pm

One Response to "Mulch – Chunky vs. Fine"

Paula Watts says:

02/04/2011 at 8:19 pm



1.

How do I identify chunky mulch in a nursery (I usually buy Bunnings products) j.e., what would be on the label which would/could identify "chunky" mulch? I have a compost bin and produce some compost. What equipment would I need – utensils common to a home- to assess where my compost fits on your scale? Is there a difference between compost and mulch other than that mine is home produced and not a commercial product? SGA provides a very important role in educating gardeners like me.

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