Composting

Bible Reference Matthew 14:13-21

Jesus Feeds the 5000

"When Jesus heard what happened, he withdrew by boat privately to a solitary place. Hearing of this, the crowds followed him on foot from the towns. When Jesus landed and saw a large crowd, he had compassion on them and healed their sick. As evening approached the disciples came to him and said 'this is a remote place and it is already getting late. Send the crowds away so that they can go to the villages and buy themselves some food'.

Jesus replied 'they do not need to go away. You give them something to eat'.

'We have here only 5 loaves of bread and two fish' they answered.

'Bring them here to me' he said and he directed the people to sit down on the grass taking the 5 loves and 2 fish, he looked up to Heaven, gave thanks and broke the loaves. He gave them to the disciples and the disciples gave them to the people. They all ate and were satisfied and the disciples picked up 12 baskets of broken pieces that were left over. The number of those that ate were about 5,000 men, women and children.

God gives us all that we need. By composting your garden, you are providing the plants with nutrients to grow strong, healthy and fruitful.

Composting

Whatever we plant needs to be fed good nitrates and nutrients in order to grow well. Compost provides this as well as helps with drainage and sufficient water retention. Compost materials need to be collected when there is plenty of green material around. This is to allow enough time for the compost to fully mature before the next spring planting season.

Compost Ingredients

Compost is made of four main ingredients - nitrogen, green, woody and a dry component. Vegetables prefer bacterially dominated compost as compared to fungal dominated, therefore we reduce the woody component and increase our dry component.

You will need:

- Shovel
- Watering can
- Top soil
- Dry vegetative matter
- Kitchen waste (not meat or dairy)

Method

It is advisable to apply organic manure to your soil to ensure that it's healthy and produces healthy crops. You can make compost manure using plant residues, animal wastes and food remains which decay to produce a nutrient rich organic fertilizer.

- Make a pit of 30-45 cm deep and 2m wide with any convenient length.
- Chop dry vegetative matter into pieces and put a layer of 30 cm in the pit.
- Add a 10 Cm layer of old compost, any kind of animal manure or slurry in the pit.
- Add 10 cm of green materials. Maintain a ratio of 1:3 for greens and dry matter.
- Add kitchen wastes eg> left over food, fruit and vegetable peelings. Avoid wastes that attract pests eg. Meat and dairy products.
- Sprinkle some top soil taken from the top 10 cm of cropped land.
- Water the whole pile well.
- Repeat all these layers except the first layer of twigs until the heap is 1 to 1.5 m high.
- Cover the heap with 10 cm of top soil to prevent loss of nutrients.
- Water the heap twice a week. Turn the compost heap over every 3 weeks with a spade or fork and always cover it after turning. It will take about 6-8 weeks for the compost to mature.

Building the Pile

Establish two equal 2m by 2m wide squares using 6 poles to 2m tall. You will need 2.6m long poles so you can bury them 60cm deep to prevent them from falling over. When building the pile, it is very important that the right ratios are maintained. The simplest way to achieve this is to build using alternate layers of the 4 main ingredients. As you build each layer dunk the ingredients into a container of water before you place them, so that you wet the layers thoroughly. A good wetting at the outset will mean you will probably only need to add water maybe once or twice during the turning process. Start with 5cm woody, then 15cm dry, then 20cm of green, then 2 bags of well wetted, fresh manure on top of that. The picture below is only diagrammatic as you will have many more layers, just keep on layering until you get to the 2m height.

Turning the Pile

Within 3 days, the compost pile will have heated up and need to be turned. Mix the pile into the adjoining 2m by 2m position, using a fork or a hoe. The turning process maintains the correct temperature, mixes all the ingredients, brings material from the outside to the inside, aerates the pile with oxygen and allows for moisture levels to be checked and adjusted if necessary. If the pile is not turned it will result in poor quality compost and it will smell.

Temperature

The compost gets hot very quickly due to the bacterial activity. The compost needs to be maintained between 55°C and 68°C, to kill all seeds and unwanted pathogens. If the compost is not turned, the temperature will rise well over 70°C, which is too hot killing off the desirable microbes, as well as burning up and wasting carbon. Turn the pile before the temperature reaches 68°C. After inserting an 8mm steel rod into the pile for a few minutes, if it can be held for 5 seconds then the temperature is less than 68; if not it is ready for another turn. A really simple turning cycle is to turn the compost pile every 3 days for the first 3 turns and every 10 days for the next 2 or 3 turns. The temperature goes down after each turn and rises again until the next turn. When turning, mix the different materials thoroughly bringing the materials on the outside into the inside so that it also gets exposure to high temperatures and the inside materials to the outside so all the ingredients get exposed to the decomposition process.

Moisture Content

It is important to test whether the pile is moist enough, as the moisture lost by steam needs to be replaced. The moisture content of your compost should be 50%. Test this when turning the pile, by squeezing it in the hand:

- If moisture drips out, it is too wet.
- If no water drips out, but on opening the hand the material does not hold its shape, then it is too dry, so add water.
- If squeezed, no extra moisture drips out and on opening your hand the material holds its form, then it is close to the desired 50% moisture content.

Leave a gentle slope on the top of the pile and place thatch grass or grain bags on top to keep excess rain water off the pile, which can cool the pile too much.

Curing

After approximately 2 months the turning process is complete, but it should be left to cure thoroughly for another 4 months before being used. It no-longer requires turning, but should be stored in the shade or covered with a breathable material or thatch grass to prevent it from drying out. Do not cover the compost with plastic as this deprives the living organisms of oxygen. When complete, your compost should be a dark brown colour, smell sweet and rich, have a crumbly texture with thick fungal strands. When cured, the compost can be stored as is for years without degrading or losing its nutrients.