



# Environment Portfolio

District 410E - August 2022



## Eco Gardens (also known as Circle Gardens/Ecocircles)



My first encounter with 'ecocircles' ('circles of cultivation') was in 2011-12, when this concept was introduced by the District 410B Chair for Environment, and many clubs in the district successfully implemented this way of growing vegetable gardens as a means not only to save on labour, but also to provide a unique and simple way of growing large amounts of food in small spaces using very little water. Not only can the method be effectively used by the home gardener, but it can also be used on a commercial scale, where its low-tech requirements reduce capital costs.

Professor Donald Langham, working in Venezuela, developed the idea of planting in circles instead of growing in straight lines in angular beds as a means of overcoming the difficulties faced by South American farmers; the same difficulties experienced in our country with an ever-increasing prospect of drought and, in some regions, floods, and the loss of precious topsoil.

We all know the devastation caused by the floods in KSN and the Eastern Cape earlier this year, and this concept provides the opportunity to replace much of the devastation in the communities served with relatively little effort and at low cost.

In my home club and other clubs in Gauteng, ecocircles have even been created with the use of two stacked truck tyres, forming a slightly smaller circle and use of a smaller bottle, thereby also reducing the amount of old tyres going into landfills!



## Benefits of growing plants & veggies in ecocircles:

- You can grow lots of food in small spaces. Each circle has a diameter of one metre (or one spade).
- Raised beds give an increased depth for establishing healthy root systems.
- There is a saving of up to 70% in water usage. Compost (or other organic material) added to the soil as the bed is constructed creates a sponge which retains the water. Mulching prevents evaporation, and the method of irrigating ensures that minimum water is used.
- 'Ecocircles' build soil fertility and help to prevent the unnecessary loss of soil to the erosive forces of wind and rain.
  - The basin shape of the completed bed funnels water into the centre where it sinks into the soil; it doesn't run off, carrying precious topsoil with it. In other words, the bed acts as a mini-water- harvester.
- Deep watering encourages good root growth. A strong, well-developed root system will ensure a healthy plant.
- Because it is such simple technology, it costs nothing to implement. Very important in this day and age of prohibitive costs.
- It requires almost nil land preparation. You don't even need to weed before you start. This means less work for those of us who are not up to wielding a spade.

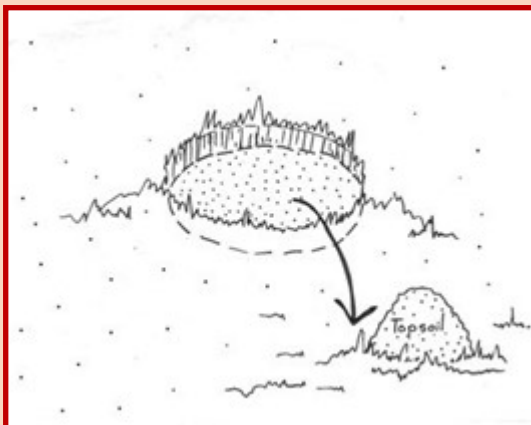
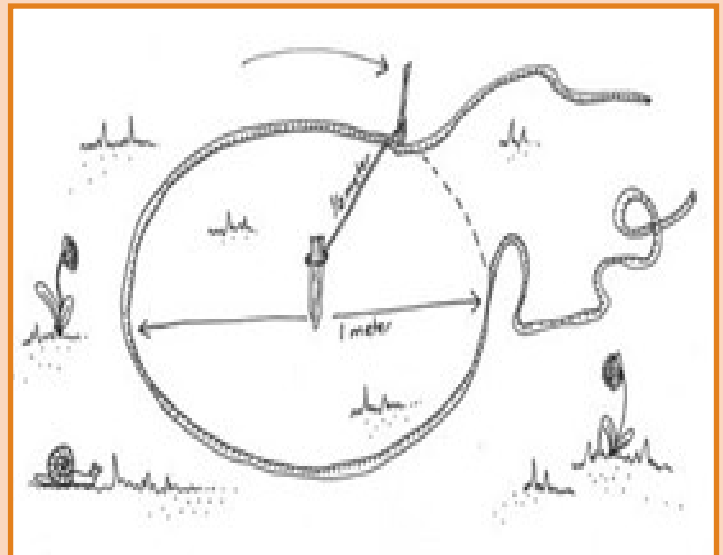
If you're ready to give it a go, this is how you go about creating your first ecocircle:





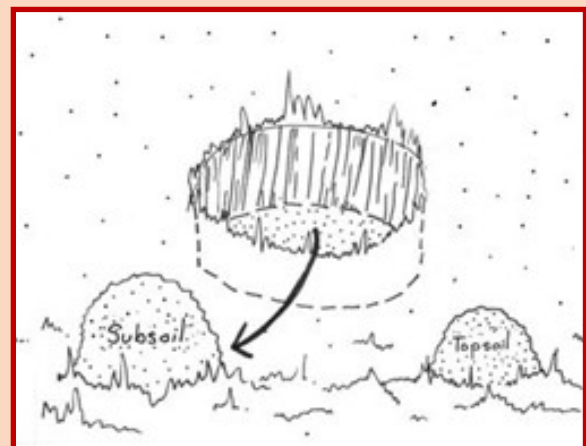
## How to make an Ecocircle

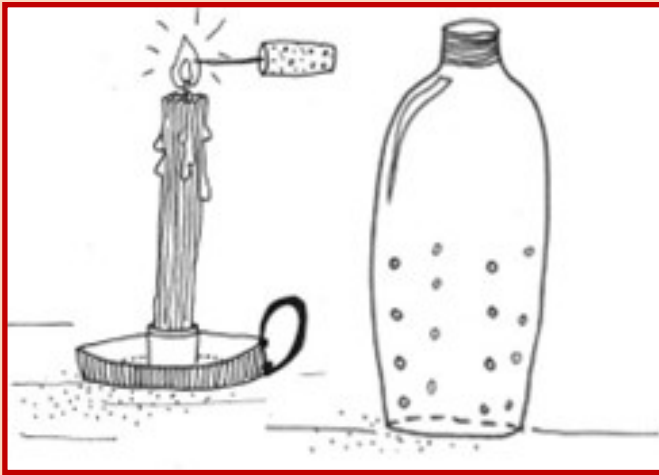
1. Mark out a circle (1 meter in diameter, or approximately the length of of an out-stretched arm) on the ground using two sticks and a piece of string. Alternatively, if you are the secret possessor of a hoola hoop, that will suffice to mark out the circle.



2. Remove the first 20 - 30 cm of topsoil and place in a neat pile next to the circle

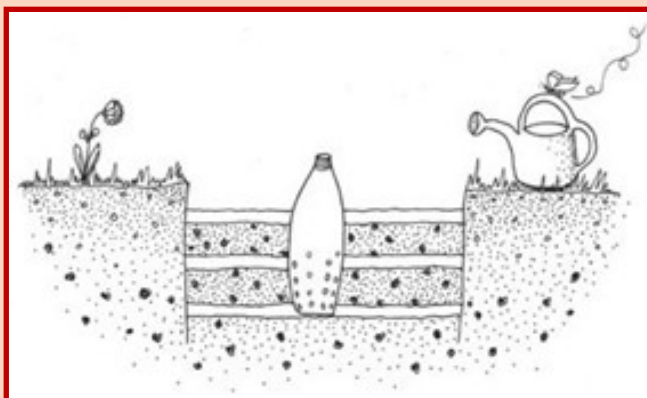
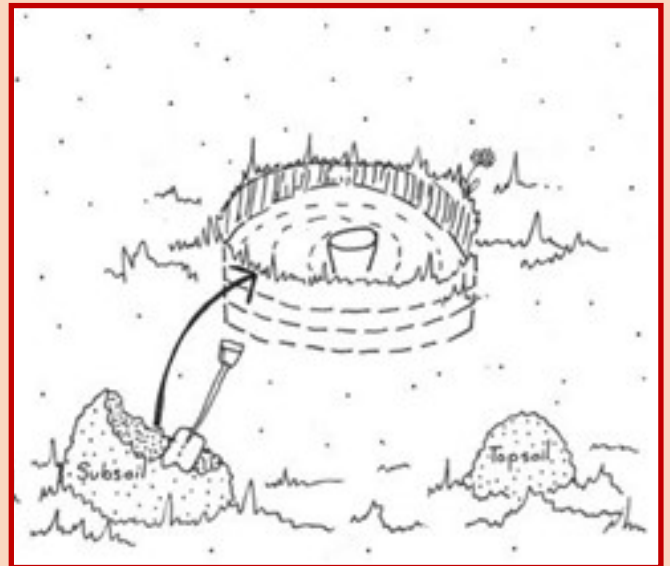
3. Remove 20 to 30 cm of subsoil and place it in a separate pile next to the circle. The depth of the hole should be 50cm (knee deep).





4. Using a candle and a needle (stick it in a cork to prevent burning your fingers) burn 16 holes in the side of a 2 litre plastic bottle which has a lid. The holes should be arranged in 4 vertical rows as shown on the left.

5. Place the bottle at the bottom of the hole, in the centre of the circle. Add a 2 cm layer (one finger) of compost (or well-rotted kraal manure, kitchen waste or dry grass) in the base of the hole and cover this with an 8 cm layer (four fingers) of subsoil. Water these two layers well

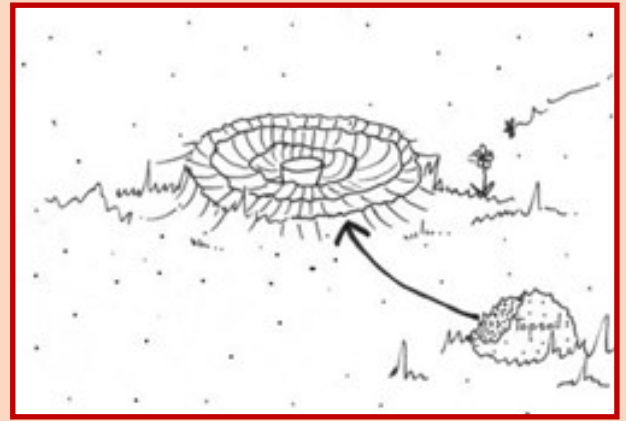


6. Continue replacing the subsoil, layering it with compost (or the other materials mentioned above) and watering each layer as you go until all the subsoil has been replaced.

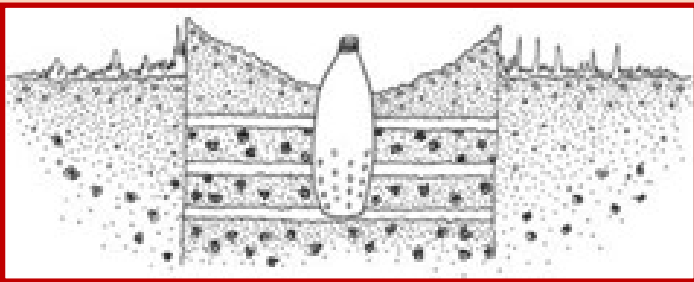
By adding organic matter and watering each level in turn a sponge effect is created which will retain water below the surface so that plant roots are encouraged to grow downwards, giving them greater strength. Surface watering tends to make plant roots stay near the surface.

The sponge effect is maintained by the burying of the bottle (or alternatively a tin can with holes in the bottom) into which water can be poured so that all the plants in the ecocircle can be reached with one watering session.

7. Having added all the subsoil, replace the topsoil. The surface of the bed will be higher than the surrounding ground. This creates a raised circular bed.



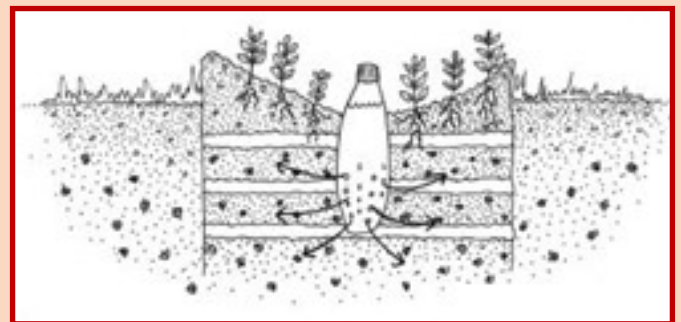
8. Scoop the soil from the centre of the circle to the outside to create a basin with the top of the bottle in the centre.



Mulch the surface of the basin and plant seeds or seedlings on the inside of the ridge, in circles. It is extremely important to keep the beds well mulched as this prevents water loss by evaporation. One bed can accommodate 3 bunches of spinach, a bunch of beetroot, 2 tomato plants and a whole stack of beans, interplanted with faster growing radishes and spring onions - try a variety of different crops.

Remember the following to maintain your 'ecocircle' in good health:

- Fill the bottle with water (it is only necessary to do this once a week if the bed is well mulched. This means that you are using only 2 litres of water per bed per week. Tighten the cap and then loosen a little but so that no vacuum is created once the water drips out into the soil.



- In areas of high rainfall, the surface of the bed should be flat to prevent water-logging. In dry areas the basin shape promotes the sinking of water.
- Very young seedlings planted in the centre of the circle are protected from wind.
- Records on planting and crop rotation can be kept easily and accurately to ensure good soil, and therefore, good plant health