

# Urban Leaves

Integrating  
Learnings from Nature  
with  
Human Ingenuity

## Introduction: Creative Ideas from Urban Leaves

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Ref: "Plenty For All" – Prof SA Dabholkar
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[www.UrbanLeavesInIndia.com](http://www.UrbanLeavesInIndia.com)

Julis Rego : 9820074639 [xvr\\_rego@yahoo.co.in](mailto:xvr_rego@yahoo.co.in)  
Preeti Patil: 9819197071 [urbanleaves@gmail.com](mailto:urbanleaves@gmail.com)

# Creative Ideas from Urban Leaves

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## Integrating Learnings from Nature With Human Ingenuity

Being creatively involved with nature was the theme of the summer camps conducted at Maharashtra Nature Park by Urban Leaves team. Julius Rego was the chief instructor and Preeti Patil the chief co-ordinator.

Some of the creative processes for purifying water, mosquito control, enriching the soil, and self water cans will be elaborated in subsequent pages. These processes can be duplicated, improved, and introduced to the market for public use as convenient ecofriendly tools for creating a green planet.

1. **Composting kitchen waste** : Kitchen waste is a smelly affair and attracts flies and other insects. Using an Earthen Pot to compost this waste can be easy and avoids the bad smell and maggots that one has to deal with if a plastic container is used.
2. **Making nutrient rich Amrit Mitti** : Using easily available resources, come and learn how to mimic Mother Nature, in making nutrient rich soil. Convert dry, fallen leaves into top class manure.
3. **Vegetable and Butterfly Garden** : In this modern –chemical laden way of farming, come and see how simple it is to grow your own healthy vegetables around your home. Set up a butterfly garden around your home and you will be surprised by the beauties you will have flitting around you home.
5. **Create wet land** : a small shallow plastic container with water can act as a magnet for various plants, fish, insects and frogs.
6. **Self watering cans** : Re-use plastic water bottles to make a self watering container .
7. **Mosquito control without using chemicals** : Simple technique to trap mosquitoes in a plastic bottle. A practical method of keeping the mosquito population under control without using harmful chemicals.
11. **Build trellis and learn simple technique of drip irrigation** : Learn how to allow a vegetable creeper to climb on a trellis. Learn how to re-use a plastic bottle for drip irrigation.
12. **Recycle kitchen / wash basin waste water**: Use plants to recycle waste water from the kitchen sink or wash basin. The water can be used to water plants or for flushing the toilet.

# 1. The story of Amrut Mitti

-Prajakta Patil

Once upon a time Cinderella, Ginger bread man and Jack lost their way and wandered about in the jungle. The three of them were terribly hungry. Looking around for food, they spotted an apple fallen on the ground. They all pounced on it together. Each of them, terribly hungry, gave reasons as to why they should be the one eating it. Finally Cinderella said that it was wise to device a way to get more food rather than fight over one. So they shared the apple and decided to make a combined effort to find something to eat.

They wandered about and saw smoke coming from a far about chimney. They walked in that direction and came to a beautiful house. The house was made of chocolates and biscuits. Gems, Cadbury and perk! They were jumping with joy. They knocked at the door. Gretle opened the door. Seeing three strangers, she was scared at first. But then Cinderella explained how they had lost their way and had come in search of food. Gretle decided to help them. But the food in her house would not suffice all of them for long. They decided to chalk out a plan the following morning.



Next morning, Cinderella sat at the front yard, observing the carpet of leaves on the ground. The same seemed to have formed a sweet smelling black mass in some areas. Small saplings of fruit trees had taken root in them and were growing vigorously! She could see the way nature grew food for humans and she thought it would be brilliant if they would be able to copy nature and grow their own healthy food. They would never be hungry again! So she called Jack and put forth her views. Jack was very enthusiastic and they told the others about their plan.

They all sat for their own round table conference. Jack said that his grand mom had told him an age old secret as to how to build nutrient rich soil by copying nature. He said, "It's called the Amrut Mitti. It is made from dry leaves, top soil and "Amrut Jal". Amrut Jal is a solution of cow dung, cow urine and jaggery.

Ginger bread man said, "Wait, and wait! Cow dung? Cow urine? Jaggery? Yuck! You must be crazy. Jack said, "Sorry to interrupt you, my friend, not crazy, but Jack. The name's Jack"



10 ltrs Water



1 kg cow dung



1 ltr cow urine



50 gms jaggery

Ginger bread man: Your sense of humor stinks. Just like the cow dung and cow urine. What good is it anyway?

Jack: The cow dung is full of microbes which are required to decompose the soil. And they multiply because of jaggery.

Grettle : All that is fine Jack. But how do they multiply without any nutrition?

Jack: The jaggery provides them sugar and cow urine various salts to grow and multiply in number.

Ginger bread Man: Wow. So cool Jack. You turned out to be one dude. So what's next?

Jack: So yes, you mix all these in water and keep for three days. On 4th day you dilute the concentrate by adding 10 times water and you get what I call, Amrut Jal. The dried leaves, biomass etc is soaked in this Amrut Jal for 24 hours. How about doing this and seeing what happens tomorrow?

Cinderella, Jack, Ginger bread man and Grettle get to work.

On the next day, Jack removes the soaked dried leaves.

Ginger bread man: Cool Jack. So cool! This is done? So simple? Ah! This was really simple. I could do this all by myself.

Jack: Not so soon, mate. Now you keep these soaked leaves in a heap and sprinkle some soil on it. You make multiple such layers and keep it for one month.

Ginger bread man: but what happens to this heap?

Cinderella : It'll turn into soil, of course. You're so silly. That's how it happens in nature. The leaves fall and get covered by soil and are decomposed by microbes and earthworms to give nutrient rich soil.



Ginger bread man: Earthworms? Those creepy crawlies? Yaikes! I'm so scared of them. And if you go close to the ground and look at them, they become bigger and bigger and bigger!

Cinderella: No silly, they don't become bigger. They move closer to you. And they're harmless creatures. They're friends of the farmers.

Grettle: Okay, so that means we'll have to survive on what's at home for the next 30 days.

30 days later.

Ginger bread man: Wohoo! The soil is ready! Yay! Can we sow the seeds now and hope for some real food? I am tired of all the junk food processed food we've been eating all these days.

Jack: We can. But there's something you missed. Have you noticed all kinds of leaves falling on the ground? Yellow-green leaves? Dark green leaves? Have you?

Grettle: Yes. They're such wonderful colours. But why do we need different leaves jack?

Jack : The yellow green leaves are called tender leaves and the dark green leaves are called matured leaves. Adding both these these leaves to the soil enriches it with nutrients. This is done by sprinkling different seeds in the soil. The many saplings attract lots of microbes. More the variety of microbes, the better it is for the soil! Remember my famous Bean stalk? How it had grown!



Ginger bread man: Jack, you're a smart chap. really. SO we put these leaves in our soil again?

Jack: we sow our seeds in this soil.

Allow it to grow for 21 days and then, we cut the tender yellow green leaves, dry and mix them in our soil.

We leave the cut plants to grow again for 21 days. The saplings will grow again and this time, we'll cut the matured leaves, dry and mix them again in the soil. After this, the saplings will grow again. But this time, we'll cut the entire plant, mix in the heap of our soil and allow it to decompose for another 30 days!



This is called "Greening the heap of Amrut Mitti"

Ginger bread man: Gosh! That is almost 100 days! This is quite a task. Thank God I have you guys. But I don't understand, why do we need to plant the seeds and cut it again? That too thrice? Isn't it silly?

Jack: I was wondering how none of you asked me that! Yes, I'll explain. Now suppose you go to a super market to buy your groceries. You will not get your vegetables and groceries in the same market. Similarly, there are a certain nutrients required by the soil which are made in the leaves. A few are made in the tender leaves, a few in the mature leaves and a few in other parts of the plant.

Cinderella: That is really smart. So let's wait for next 63 days and see what happens! 65 days later.

Their amazing soil is made. They hold the soft, crumbly soil in their fist and breathe in the heavenly smell of it! They feel refreshed, energized and joyful. They plant plenty of fruits, vegetables watch them grow. They relish them forever with their friends, and the birds' butterflies and bees! Now none of them wants to leave the cottage farm. They name it "Urban Leaves" and live happily ever after spreading awareness on the GREEN NATUECO REVOLUTION.

## 2. From Waste to Wealth, Haste to Health

Hunger is manmade. Mother Earth has plenty for all.

If we follow her way, no one will ever remain hungry!



How does one do that?

Take two earthen pots and drill holes at the bottom. Keep the pots on a tri pot stand. At the bottom add some coconut fibre, sugarcane bagass, or dry leaves mixed with fistful of soil. Now keep adding your kitchen waste to the pots. No need to buy any earthworms or any other stuff. Just keep sprinkling some red earth in the pots from time to time. Once in a way if you feel that the waste has become too wet, add newspaper, dry leaves, and soil to cover it completely.

Keep stirring it from time to time. These are magical pots whichever fill! When one pot is full, shift to the other and rest the first one. Come back to it, when the second one looks full. As the compost matures, rate of decomposition increases. One fine morning, after three months remove the compost, take a fist full and smell its heavenly fragrance. Use it to plant your herbs and veggies.



### 3. Self Watering Cans come to your rescue!

So how do you start the GREEN REVOLUTION? Homework, Tutions, and hobby classes! Phew! You forget to water the plants....How can they grow?

Plants need moisture and not water. Most of the pests' attacks on plants, even after using good soil are due to excess watering. When we put too much water it fills up all the air gaps in soil, making it difficult for microbes and soil organisms to breathe and they die. This affects the health of soil and plant as most nutrients from soil are made available to plants by microbes.

Using self watering cans helps us in many ways. Here are some.... We want you all to observe the plants and write some more of your observations:

- It enables the plant to take in only as much moisture that it needs.
- It helps conserve water, otherwise wasted due to over watering.
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**This is how you get started!**



Observe the difference between plants in regular pots and those in self watering cans. Draw your observations and share with friends!



## 4. Mosquitoes Vector Control

But what happens when people and the government stop you from doing this for fear of breeding mosquitoes in stagnant water?



Take a medium sized earthen pot ( matka ) and place it around your house where mosquitoes are known to roost in the day time,( in a corner of the compound that has plants and is shady). The pot can be of any colour. Place some dry leaves in the pot. The pot should be kept on its side. Keep the pot in the night. As mosquitoes like cool and shady place to roost in the day time, they will come into the pot once it becomes bright. Select a bottle with a wide mouth - mouth of the bottle should just fit into the mouth of the matka, remove the cover of the bottle and place the mouth of the bottle into the mouth of the matka, ensure that there is no gap for the mosquitoes to fly out. Now lift the matka along with the bottle and keep them firmly on a curved surface (lid of a bottle would do). As you shake the matka the mosquitoes will try to fly out, quickly lift the bottle and insert a piece of cardboard/plastic between the bottle and the matka. Quickly put the cover of the bottle and fasten it. You will have trapped most of the mosquitoes in the bottle.

Now as you shake the bottle vigorously observe what happens:

**Add some Guppy fish in container! And adopt .....the coolest way to control mosquito menace!**

## 5. Recycle and Recycle Kitchen waste Water



### Material Required:

1. 4 to 6 nos 15 ltr used plastic oil cans with taps at the bottom and wide mouth.
  2. Soil, saw dust and sand
  3. 4 to 6 nos Canna plants.
  4. 100 ltr drum or tank
  5. Any species of water plants like Water Hyacinth, Water lilly, Water cabbage, Bulrushes etc. (can be got from any stagnant water or ponds)
- Mix equal quantities of soil, saw dust and sand.
  - Fill the plastic cans 2/3rd with this mixture and Plant a sapling of canna in it.
  - After a week of planting allow water from the kitchen sink to pass through the cans in serial order.
  - The first can water should empty into the second can and so on.
  - The cans should be kept appropriately.
  - The water from the last can should be collected in the 100 litre drum or tank.
  - In case you feel that the water is clean enough after flowing through the 4th can, you can stop at the fourth can.
  - Put some sticky mud at the bottom of the drum.
  - Add water plants and Guppi fish to the drum water.
  - Your water filtration system and wetland is operational.
  - As time goes by , the wetland will attract frogs, snails, alge, dragon flies.
  - Birds will come to drink and bathe.
  - Don't be surprised if the beautiful Kingfisher pays visits for the frogs and fishes.

