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After retirement, Dr. Padmashri R.T. Doshi, started working on his farm at Kamshet, near Pune, and discovered the immeasurable problems faced by farmers. He discovered that if farmers include the cost of their labour in the calculation of farm profit and loss, all farms would be unprofitable. This led him to think very seriously about reducing the costs of farming and labour. Dr. Doshi has experimented with a number of farming practices that enable city dwellers to grow their own food on every available square inch of urban space, including terraces and balconies.

City Farming - the Natural Alternative, Experiences in India

An example of sustainable agricultural and sustainable initiative, using traditional and indigenous knowledge and appropriate technology

One of the innovations recommended involve high costs, nor does the farming require long hours of work. Every member of the family can be involved in the maintenance of the city food garden, including the elderly. The farm can provide the family with ample nutrition from plant sources, eliminating the need to purchase one's vegetables and fruits from the market, where inflation makes a mockery of housewives' budgets.

INNOVATIVE EXPERIENCES

High-density polyethylene bags are used for the growing vegetables and cereals (the kind used to pack 50 kg of cement or fertilizers), with a diameter of around 22.5 cm and a length also of 22.5 cm. For crops like sugarcane, bags with large diameters are essential (35 cm). Fruit trees like fig, guava and mango have to be grown in bags, which have a diameter from 45 to 52.5 cm. The bags must be open at both ends; hence the base of the bag must be cut open.

made in the house, or purchased from garden stores. At the institute compost is produced by putting cow dung, organic material and water in polyethylene bags and leaving them to break down for six weeks (as illustrated in Figure 1). Compost can be made in many ways, but the suggested method requires the least amount of labour. It is ideal for city homes since the bags are kept closed and therefore, there is little change of them being infested with vermin or other undesirable insects like cockroaches.

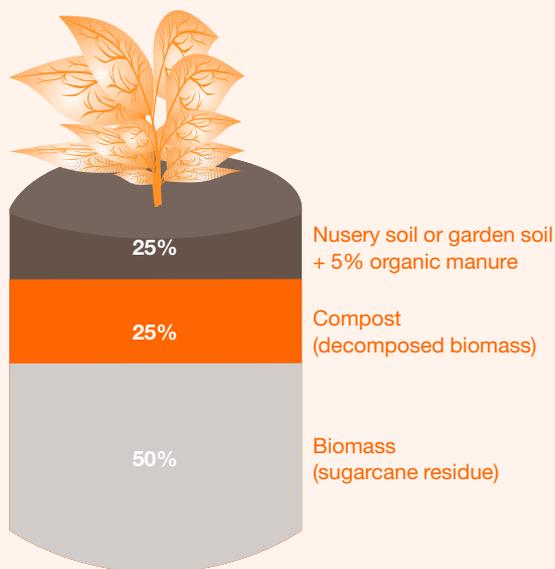


Figure 1. The different layers required in the containers to grow the plants

After selection of the appropriate bags according to size, the next step is to fill them with soil. If soil is put as it is into bags, it will fall out the other end, which has also been opened. To prevent this, the bottom half of the bag is tightly packed with biomass of any kind. Dr. Doshi often uses waste sugarcane stalks, collected from a sugarcane juice vendor outside his house. The material is for free and sugarcane juice vendor is glad to get rid of it. Functioning as a kind of giant plug, the stalks keep the soil in the bag, but at the same time, are sufficiently porous to allow the water given to the plant, to drain out easily.

The remaining space at the top of standing bag is filled with normal garden soil; approximately 2 to 4 kilos of soil would be required for every 0.11m² of area. The bags are soaked with water two to three times and the water is allowed to dry. It is now ready for planting.

Seeds should be carefully selected. They can be taken from one's own kitchen (groundnut, cereals like wheat), or bought from the store. The important point here is how one plans the planting. The Institute recommends "chain-planting", where plants are grown to provide for small quantities of vegetable at staggered intervals and not a large quantity all at

After the base is plugged, half of the remaining space inside the bag is filled with compost, either

Dr. Doshi set up the “International Institute of City Farming” which is headed by Miss Vandana Shah – CEO (Chief Executive Officer) and Mr. Sunil R. Doshi – President. They started out with modest expectations and have been blessed with grand success. A patent for Dr. Doshi’s scientific invention known as “in-situ compost” has been granted. The United Nations, World Bank, BBC, local newspapers, radio and TV have provided media coverage. The Institute conducts lectures and awareness programmes, provides consultancy services, develops publications, and provides assistance in setting up city farms.

once. Seeds, cuttings or grafts can be placed in the bag and with the right amount of watering; they begin to take root and flourish. Seeds may be placed 1.5 to 2 cm below the soil level and three weeks later, the plant would have fully emerged from the soil. Leaves may be given foliar sprays and pests should be dealt with, as far as possible, using non-toxic, home made solutions.

Water use in this so-called “Doshi System” is also considerably less than in conventional soil farming. Since the plant grows in sealed bags or other cylindrical bags or containers, considerably less water is needed when compared to growing on fields, where most of the water would evaporate.

The system is suitable for any scale of operation and in any open space. Dr Doshi uses these bag systems to grow a variety of fruits, vegetables and cereals. He has also grown 1,0000 sugar cane plants. Both small and large farmers can use this method, since it is easily replicable and depend, very much, on materials available in the local environment.

Dr. Doshi’s good practices could have a significant impact on policies relating to food production. Today, most governments have fallen into the trap of reallocating all the food production to the countryside. New policies supporting such forms of urban agriculture should now be encouraged.

Urban farming brings health and other benefits (including recreation and physical exercise) to city folk. Farms of the kind promoted by Dr. Doshi can also reduced food prices. Even if the vegetables and fruits produced are not destined for the market, their availability to households in the cities can help to reduce food scarcities.

Photo: M. Gayathri Devi



Rooftop with plants using kitching

waste (according to Mr. Doshi’s technology)

Recycling of Kitchen Waste at Central Kitchen, Mumbai Port Trust

After a training programme on “city Farming” given by the international Institute of City Farming, Mumbai Port Trust has developed an organic farm on the terrace of it’s central kitchen (which is about 3000sq ft (279 m²) area). The farm was started firstly to dispose of kitchen organic waste in an eco friendly way. All kitchen staff members, after their daily work in the kitchen, tend the garden, which has about 275 plants. Besides the eco-friendly disposal

of waste, the employees, who are not professional gardeners, experience creative pleasure in a friendly social environment.

In a span of five months fruits like pomegranate, guava, sugarcane, and a range of vegetables like ladyfinger, tomatoes, and radish are produced. Many people visit the farm, and the workers take pride in showing them around the garden. The positive response has helped add to their self-esteem. This can be seen from their enthusiasm and changed attitude. The farm was awarded the 2nd prize by the National Council of Friends of Trees in the annual show held in February 2003.

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