

What is an Air Nursery ?

The Farmers' Handbook - "Near The House 2", Chapter 8 - Air Nursery

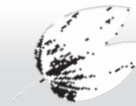
It's everyone's responsibility to plant trees and make the Earth green. But because of lack of skills to raise plants, many farmers don't do this important work. They may try to do it, but often the planting isn't successful. In this chapter we discuss the question of how

to raise seedlings using local resources and less work. There are many types of nursery to raise different types of seedlings. Here, we learn about a new and quite different type of nursery, called an *Air Nursery*.

An Air Nursery is a bed which is lifted above the ground, so there is empty air space between the bottom of the bed and the ground below.



Ram and Lilawati Gharti's Air Nursery



Why make an Air Nursery ?

The main purpose of the air nursery is to produce a good shape for seedlings' roots. It is mainly useful for those plants which develop a fast-growing tap root.

Seedlings are usually raised from seed sown in a nursery bed, or sown direct into polypots, or transplanted from one to the other. But it's very easy to damage the roots as young seedlings are transplanted from one place to another. Many plants can dry out. In polypots, roots need pruning regularly, and if this is forgotten or not possible at the right time, the roots grow into the soil and when lifted can break and damage the plant. The air nursery is especially for species that grow these fast, long roots in the nursery.



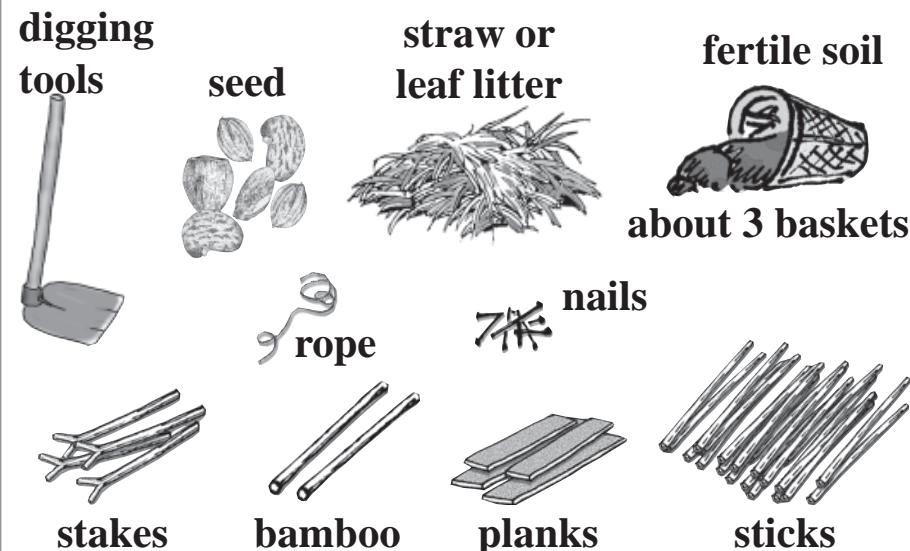
A small air nursery can be made in the corner of a kitchen garden

This chapter's Author :-
Mrs Belmaya Rana
Local Coordinator, Gumi,
Surkhet, Nepal



How to make an Air Nursery ?

Materials needed to make an Air Nursery



When to build an air nursery

The air nursery is built whenever normal nurseries are started. This is normally late winter for lower, warmer areas, and later in the spring for higher, cooler areas.

Building the Air Nursery

On the following pages the building method for the air nursery is described, with pictures and text.

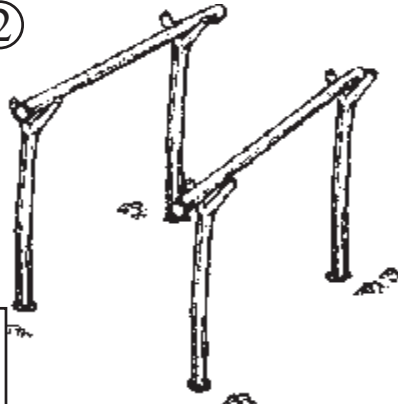


①



Dig holes at 4 corners of a square and drive in 4 strong stakes

②



Place strong sticks across the uprights

③



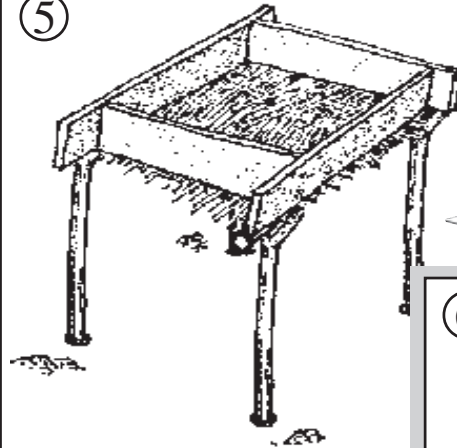
Place smaller sticks across

Add smaller sticks and straw to close all holes

④



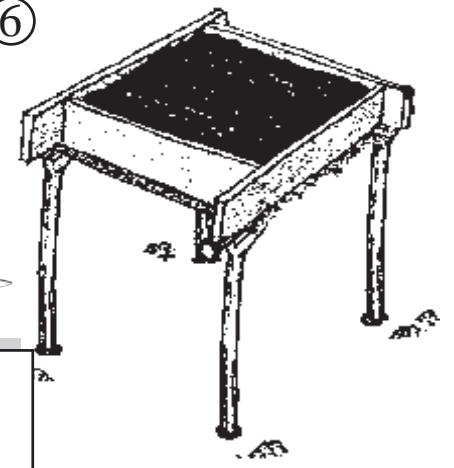
⑤



Strongly secure 4 planks around the top

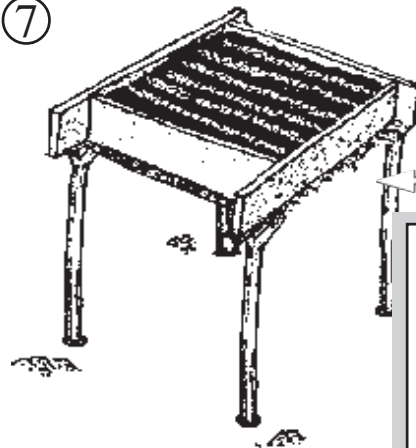
Fill with fertile soil

⑥



Plant seeds in lines

⑦



Cover the seeds with soil and cover the soil with a light mulch

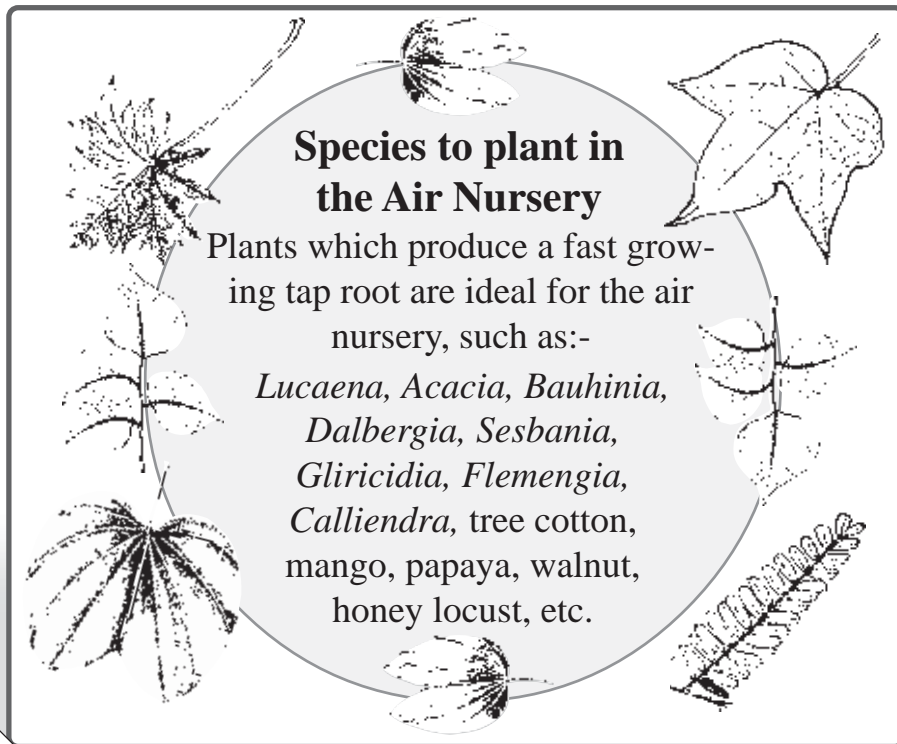
⑧



How to make

Dig in 4 stakes at the corners of a square, and between 50cm and 1 metre high, so they are strong and steady.

Surround the top frame with planks or bamboo, and fill with up to 6 inches of fine, fertile soil to make the nursery bed. Dig a round pit 50 cm deep and 50 cm in diameter underneath the nursery. The soil from this can be used to fill the nursery above. This pit then has a second use when lined with plastic to make liquid manure in, and is shaded by the nursery above. Now the air nursery is ready to sow seeds in. After sowing, cover the seeds with a thin layer of soil and then a fine mulch, and water the bed well. Seeds will germinate quicker if first soaked in warm water for 1-2 days.



Let's See

how to make an Air Nursery



Making the hot bed in a shady spot behind the house



Making the pillars and frame to hold the bed



Use straw or leaf litter to stop soil from falling through



Enclose the space with planks, as shown here



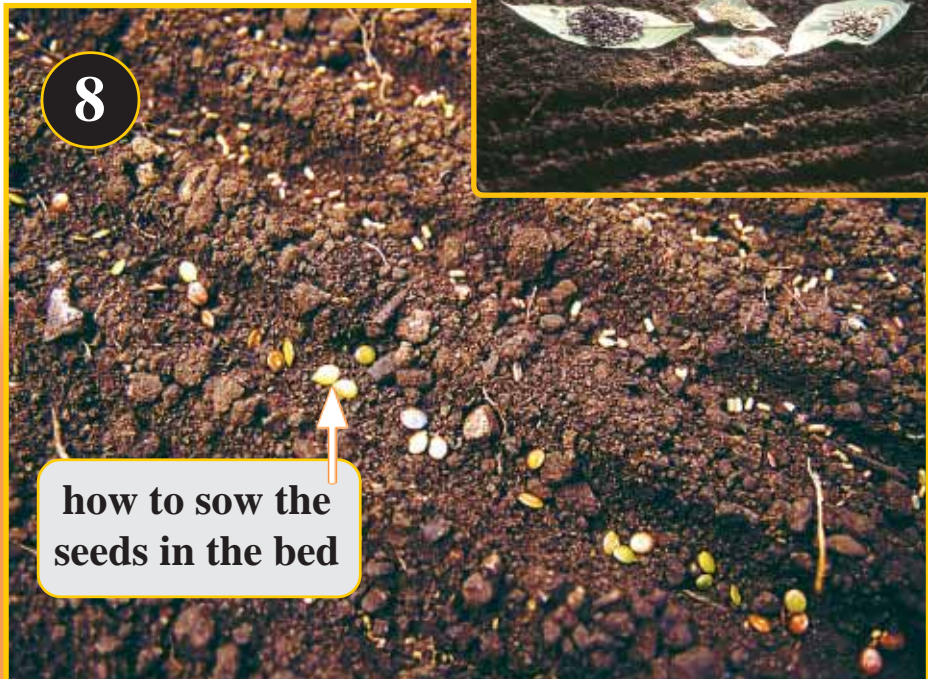
Inside this, put up to 6 inches of fertile soil



Make the soil fine and even



Make lines to sow the seeds into



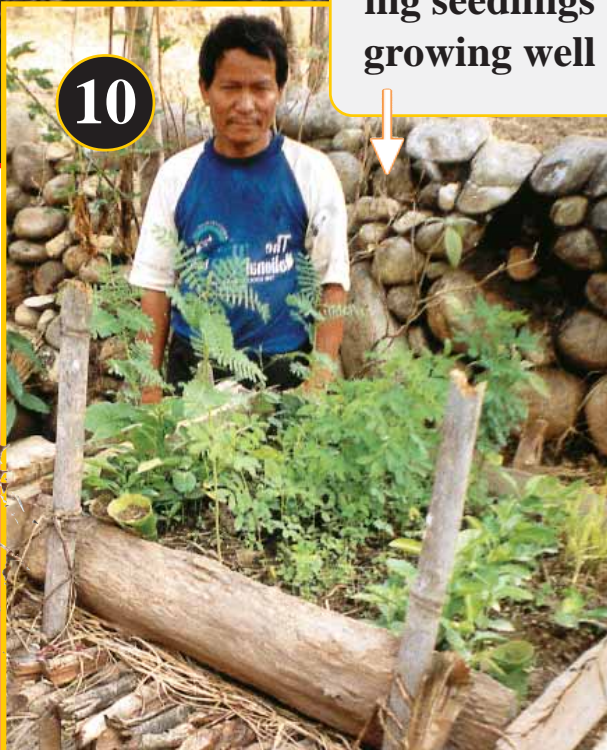
how to sow the seeds in the bed



9

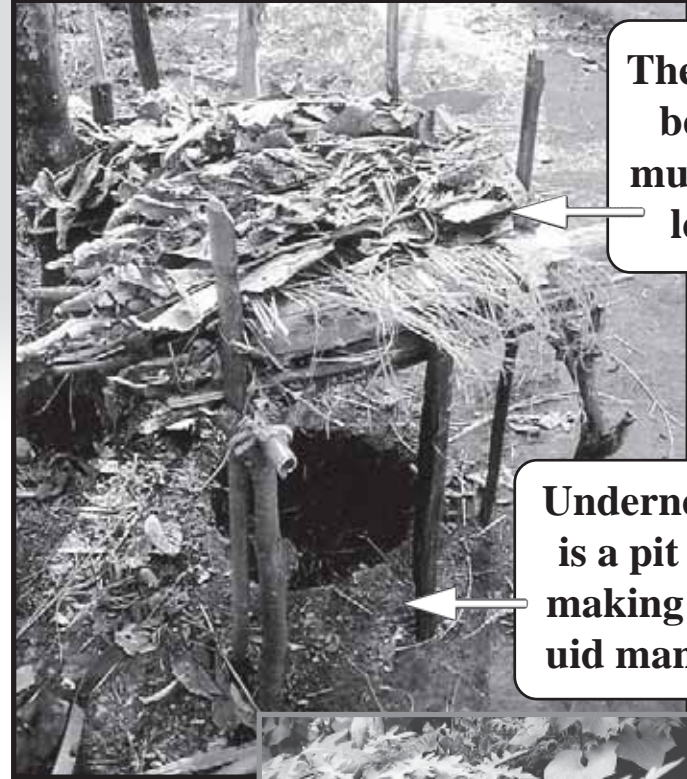
Cover with mulch and water well and regularly

The roots of a papaya grown in an air nursery are short and well bunched



10

After 3 months, showing seedlings growing well



The top of the bed is well mulched with leaf litter



Underneath is a pit for making liquid manure



Ms Chandra Pun shows the roots of a papaya grown in the air nursery

Both roots shown below belong to the papaya plant. One is grown in a polypot and the other in an air nursery. What difference can you see ?

In a polypot



In an air nursery



The roots are in a fine root ball, easy to dig out and plant

Because of the long tap root, digging up is difficult and damages the plant

Maintenance

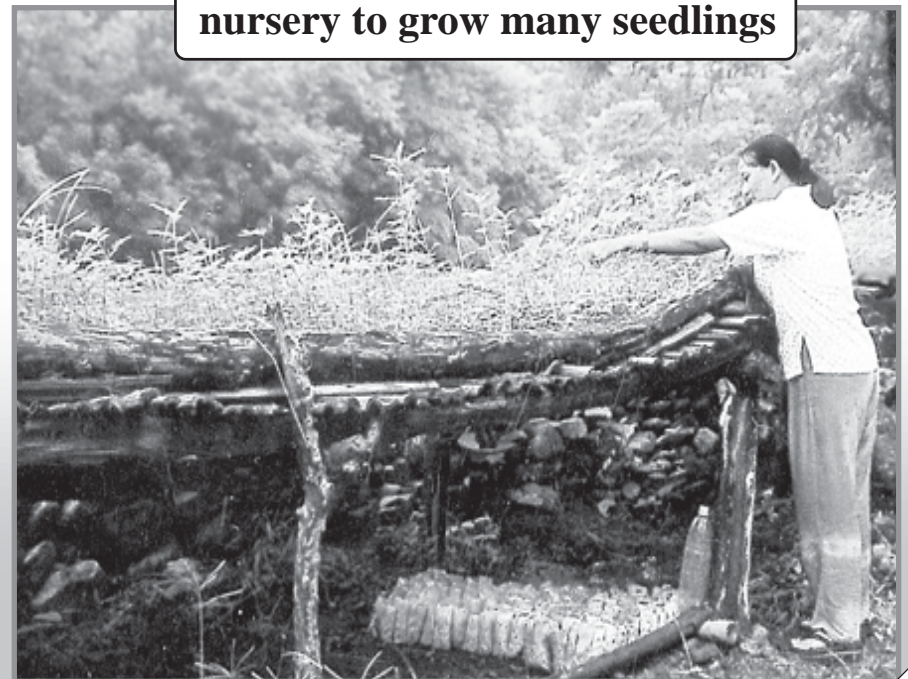
How to maintain an Air Nursery

This is how the plants in an air nursery grow well. From time to time regular maintenance of watering and weeding is needed, and liquid manure can be used.

Things to note :-

Water will dry out faster than normal in the air nursery, so watering is needed more often. In the hot season water once or twice a day, and in the cold season once every 2 days is enough.

Here's a big, community air nursery to grow many seedlings



So the roots will grow down as the leaves and stems grow up. As the fast-growing tap roots grow down, they meet the base of the bed and grow into the air space. Here, they will dry up and die, which stops the deep root growing - this is automatic root pruning. Instead, many fine roots will grow higher up.

When this is done, it becomes much easier to dig up seedlings for planting out, and roots are not damaged. No harm is done to the seedling. Just trim off the dead roots when it is time to plant out.

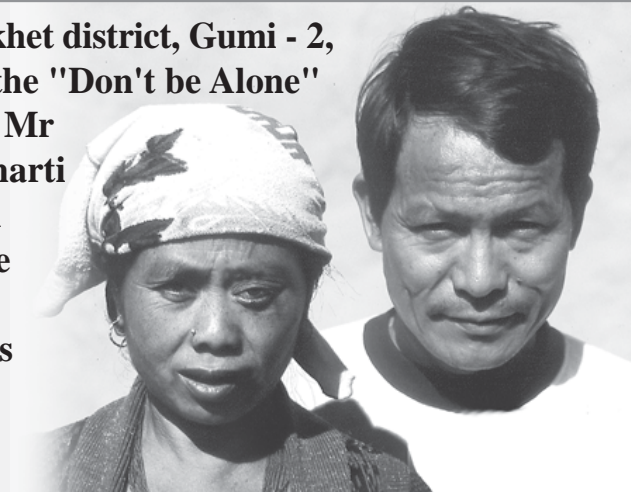


A layered system with air nursery on top and other plants below to fit more into a small space. Sunrise Farm, Kathmandu

Farmers' Experience

Mr Ram Bahadur Gharti and Mrs Lilawati Gharti

From Nepal, Surkhet district, Gumi - 2, and members of the "Don't be Alone" Farmers' Group, Mr Ram Bahadur Gharti and Mrs Lilawati Gharti have made their own Air Nursery. Now let's hear about their experience.



“ At first we didn't believe a nursery could be in the air ! But then the Homestead Programme (JPP) taught us and we built our own. We didn't think we had the materials to build one but managed to find bits and pieces and eventually in only half an hour we'd built an air nursery. If we'd known how to build it before it would've been much easier because it's a much better way of growing seedlings, to dig up without damaging the roots. We made the nursery taller to protect the seedlings from being eaten by the chickens and pigs. It's just right for growing seedlings for planting on our own land, and we give to friends as well. But I've said I'm not giving any next year so they'll have to make their own nursery. They've agreed to that, at least. ”



Read On !

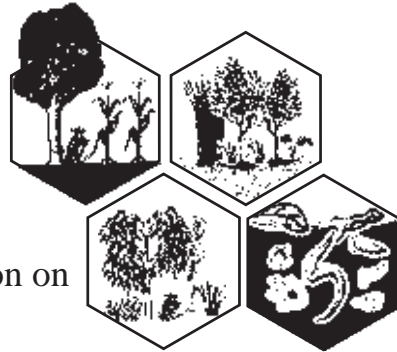


Subjects Related to the Air Nursery

Good benefits can be had from the information in this book about making and using an air nursery. However, this information is also linked to other methods. For extra benefits let's read, learn and practice from other related chapters.



Agroforestry, Living Fence, Fruit Orchard and Soil Conservation chapters



The air nursery is for growing strong, healthy plants. Information on how and where to plant fruit and multi-purpose seedlings for better production and less work is given in these chapters.



Home Nursery chapter

Around the homestead you need to plant many different plants for different functions. Information on different nurseries to grow various types of plants is given in this chapter.

