

Terrarium: Living Ecosystem in A Jar

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A terrarium is a glass container that is used to grow small plants that can be opened for maintenance. Terrarium can be called as miniature greenhouse with self sustaining ecosystem. Nathaniel Bagshaw Ward is the man behind the discovery of terrarium. A closed terrarium creates an environment that mimics the natural ecosystem. The transparent glass lets in the light essential for the photosynthesis of plants, and the sealed lid keeps the humidity emitted by the plants in the jar so that there is nearly no need to add water. As long as these plants in glass receives a good initial dose of all the necessary elements to thrive (water, light, nutrients), they can live in this same ecosystem for a long time. Minimum maintenance is required for maintaining a terrarium.

Types of terrariums

1. **Closed terrarium (wet terrarium):** closed terrarium is a glass jar with a lid of glass, cork, plastic or metal lid. The lid helps in maintaining the moisture and can be opened occasionally to remove excess moisture. A transparent or translucent lid is best for use as it allows light to reach the top of the plant.

Plants from humid habit can be grown in closed terrarium. Eg. Ficus and ferns.

2. **Open terrarium (dry terrarium):** open terrarium is an open glass jar which do not maintain humidity. In this terrarium plants have access to fresh air and direct sunlight. Plants from arid climate are suitable for growing in open terrarium. E.g. cacti and succulents.

Elements of terrarium

1. **Container:** choosing right type of container is essential for terrarium. Any transparent glass container (to allow full spectrum of light to reach plant) with wide opening can be used for making terrarium.
2. **Small gravels and stones:** laying a bed of coarse gravels and stones will help in drainage of water from soil. Drainage helps in removing excess water from soil so that plant roots can easily breath.
3. **Soil or soilless media:** soil used in the terrarium is small in quantity so it must fulfill the requirement of the plants. Use right type of soil or nutrient rich soilless media as adding fertilizer is not effective in terrarium.



4. **Sand:** sand is used to bury a succulent in a arid landscape.

Table 1: Plants suitable for terrarium

1	Fern	<i>Nephrolepis exaltata</i> , <i>Adiantum raddianum</i> , <i>Nephrolepis cordifolia</i> , <i>Davallia fejeensis</i> , <i>Phlebodium aureum</i> , <i>Adiantum microphyllum</i>
2	Peperomia	<i>Peperomia rotundifolia</i> , <i>Peperomia tetraphylla</i> , <i>Peperomia caperata</i> , <i>Peperomia prostrate</i>
3	Air plants	<i>Tillandsia ionatha</i> , <i>Tillandsia bulbosa</i> , <i>Tillandsia stricta</i>
4	Foliage	<i>Araucaria heterophylla</i> , <i>Syngonium podophyllum</i> , <i>Fittonia albivenis</i> , <i>Tradescantia zebrina</i> , <i>Pilea glauca</i> , <i>Begonia maculata</i> , <i>Calathea orbifolia</i> , <i>Philodendron hederaceum</i>
5	Moss	<i>Thuidium delicatulum</i> , <i>Hypnum cupressiforme</i> , <i>Tortula ruralis</i> , <i>Selaginella kraussiana</i> , <i>Leucobryum glaucum</i>
6	Bromeliads	<i>Neoregelia</i> , <i>Cryptanthus bivittatus</i>
7	Orchids	<i>Paphiopedilum</i> , <i>Miniature Phalaenopsis</i> , <i>Masdevallia</i> , <i>Pleurothallis</i> , <i>Jewel orchids</i> and <i>Miniature Angraecum</i>
8	Succulents	<i>Kalanchoe thyrsiflora</i> , <i>Lithops</i> , <i>Aloe hemmingii</i> , <i>Crassula</i> , <i>Sedum</i> , <i>Aeonium</i>

5. **Plants:** Not all plants will survive in a terrarium. First consider the requirement of the plants and then assemble them in a terrarium.

- Choose plants that will not compete with each other at root level and at branches level.
- Choose plants that have the same basic requirements. Eg. We cannot grow moss and cactus together as moss require ample quantity of water and cactus require very less quantity of water. Whereas tree like aralia which grows well in acidic soil can be grown with moss as both having the same

requirement in terms of soil type and moisture requirements.

- Choose plant with vertical growth if the container is slim and plant with a little spreading habit if container is wide.



Water garden terrarium: In this terrarium the container is filled with plants that have their roots visible in the water. Distilled water or rainwater would support the plant's survival, or we can add activated charcoal to keep water fresh.

Plants suitable for floating terrarium

- *Pistia stratiotes* (Water lettuce)
- *Cyperus papyrus* (Dwarf papyrus)
- *Cyperus alternifolius* (Dwarf umbrella palm)
- *Caltha palustris* (Marsh marigold)
- *Eichhornia crassipes* (Water hyacinth)
- *Equisetum hyemale* (Horsetail rush)
- *Sagittaria australis* (Arrowhead)

Maintenance of terrarium

1. **Watering:** check the soil moisture timely and water when soil is dry. As closed terrarium live in self-sufficiency, they require very little water. While open terrarium requires watering weekly in summers and once in two- or three-weeks during winter. Apply soft water (free from calcium carbonate) or rain water with the help of plant mister.

2. **Trimming and pruning:** when foliage grows against the wall of the container either trim leaves or prune branches.
3. **Remove** the rotted leaves and rake the soil to aerate by using fork
4. **Temperature:** terrarium is suitable for indoor environment. Maintain optimum temperature for optimum plant growth. If the temperature rises then open it and add moisture to drop down the temperature as high temperature can cause leaf drop.

5. **Check insects:** timely observe the harmful insects and control them by using biological and chemical insecticide.

Conclusion

Terrarium can be beneficial for urban area where space is limited. They provide a way to enjoy gardening without a garden. They require less maintenance and are easy to take care for, making them suitable for a busy modern lifestyle.

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