

Passive hydroponics

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Passive hydroponics, **semi-hydroponics** or **passive subirrigation** is a method of growing plants without soil, peat moss, or bark. Instead an inert porous medium transports water and fertilizer to the roots by capillary action. Water and fertilizer are held in a reservoir and conducted to the roots as necessary, reducing labor and providing a constant supply of water to the roots. In the simplest method, the pot sits in a shallow solution of fertilizer and water or on a capillary mat saturated with nutrient solution. Since routine maintenance is much simplified, passive hydroponics can reduce the labor required to maintain a large collection of plants.

The various hydroponic media available contain more air space than more traditional potting mixes, delivering increased oxygen to the roots. Allowing air to reach the roots is particularly important in preventing root rot in epiphytic plants such as orchids and bromeliads, whose roots are exposed to the air in nature. Passive hydroponics also may add additional ambient humidity through evaporation. It is important in passive subirrigation to wash out the system from time to time to remove salt accumulation. Plants that require drying between waterings or a dry dormant period may fail to thrive under the constant moisture of passive hydroponics.



Cattleya
transferred to
passive
hydroponics
culture 5 weeks
earlier. Rich
development of
surface roots.



Media

Many media are available for passive hydroponics, but the most common are expanded clay pellets, coconut husk chips, perlite, vermiculite, diatomite, charcoal, sand, shredded newspaper, and rock wool. These are frequently used in combination.

See also

- Hydroponics
- Gardening

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