Film Vessels for Heterotrophic and Photoautotrophic Growth and Acclimation

Description:

Plant propagation systems are used in horticulture to efficiently produce plants with great uniformity. To do this, plants must be kept inside an enclosure or container until they are capable of photoautotrophic growth. These containers must be able to promote gas and nutrient exchange, as the plants need these elements in order to grow and mature. Many current vessels for this purpose are made of hard plastic, but these cause several inconveniences, including their weight, which makes shipping and transport difficult, and their irregular and rigid shapes, which create inconvenience in packing and storage. The proposed invention discloses an apparatus which comprises a flexible transparent enclosure, potentially made from a polymer such as polyethylene. This new material can adjust gas and nutrient concentrations inside the vessel as needed, while also exposing the plant to sunlight when necessary. Most importantly, the structure of the apparatus provides a flexible but stiff mechanical resistance that protects the young plant throughout the growth process. The flexibility of the vessel also promotes convenience in packing and storage and also in vessel transport.

Applications:

- Method for propagation and transportation of young plants

Benefits:

- Low cost
- Flexible but stiff material gives good structure for plant growth
- Compressibility leads to easy packing and storage
- Greatly reduces risk of bacterial pathogen infestation in culture

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