

HYDROPONIC GROWING MEDIA FOR VERTICAL TOWERS

The two essential ingredients of a good growing media mixture for any hydroponic system are a balance of proper drainage and water retention. Aeration or porosity is the key to proper root development. For a more detailed description of various growing media characteristics and porosity please refer to "Growing Medias and Nutrient Delivery Systems for Greenhouse Vegetables and Other Crops" by **Tim Carpenter**, ASP Conference, Atlantic City, June 1996.

The media must drain well enough yet maintain enough moisture for root development in a six foot tower. Perlite is the most popular soilless growing media in the world because it is lightweight, porous, inert and doesn't decompose. It is silica sand that has been heated and popped like popcorn. With the addition of coconut fiber (or coarse vermiculite) you can have the ideal hydroponic soil. The percentages are not as important as the consistency. Strawberry plants require good drainage.

Watering cycles must be adjusted to the water holding capacity of the media. This means the more water holding capacity the less frequent the watering. Pure coconut fiber could and has been used, but the cost would be prohibitive in most crops and it would also be very heavy in a stackable system. If a recirculating system is used pure perlite could be used, but the watering would have to be much more frequent because the water retention is less.

At this time the mixture recommended is 85-90% perlite and 10-15% coconut fiber
One 4 cu. ft. bag of perlite is equivalent to 30 gallons
One 13 lb. Gro-block is equivalent to 3.0 cu. ft. or approximately 20 gallons when expanded
10% coconut fiber would be equivalent to 3 gallons per bag of perlite
15% would be 4.5 gallons per bag of perlite

Because coconut fiber is expensive you may want to experiment on a small scale with cypress mulch, aged fine pure bark, rice hulls, etc...

Expand the coconut fiber block with water (warm water if available). The instructions are on each block or brick. You may need to adjust the amount of water to get the maximum volume of expanded coco fiber.

A shallow tank is recommended for mixing. Hard plastic swimming pools work well and are relatively inexpensive. Slightly wet the perlite to reduce the dust and add the appropriate volume of coco fiber and mix with a garden rake until the color is consistent. This is the best indicator of sufficient mixing. A 55 gallon plastic drum can also be used. Please call for design information to make your own convenient mixer.

Vertical Gardening