

## EFFECTIVE WATERING WITH HORTICULTURAL PERLITE

Water shortages have become a major problem in many parts of the world. These shortages have affected virtually every phase of life and have created situations critical to life itself in many areas. Not the least affected by these water shortages are those engaged in the production of plant materials. Even in those areas where water is available, efficient use is the order of the day. In addition to the need for water conservation, irrigation costs have risen steeply. These factors impact dramatically on commercial growers worldwide.



*The Institute of Agricultural Research in Cyprus recommends an 85% - 90% horticultural perlite, 10% - 15% sphagnum peat moss mix for rooting olive tree cuttings*

### Perlite's Unique Water Holding Ability

Horticultural perlite particles have a closed cell structure with a multiplicity of tiny crevices on their surface. These crevices trap water and hold it against drainage and evaporation, yet making it available to plant roots on-demand. As a result, available water does not drain away but the optimum amount of water for plant growth is maintained where the roots need it to ensure optimum plant development. Particles of horticultural perlite will retain from three to ten times their weight in water.

Water retention by horticultural perlite is not an indiscriminate action. The amount of water adsorbed on the surface of perlite particles is a function of the particle size distribution. Coarser perlite particles adsorb less water than finer particles. Thus, by adjusting the range of particle size employed, the amount of moisture retained can be carefully regulated to suit particular requirements. This enables the grower to prepare the optimum mix for each type plant being grown.

### Olive Tree Propagation in Cyprus

Important agricultural products in the Mediterranean area are olives and olive oil. On the island of Cyprus, the traditional method of raising olive trees was from seed followed by grafting. The method was time consuming and not always successful.

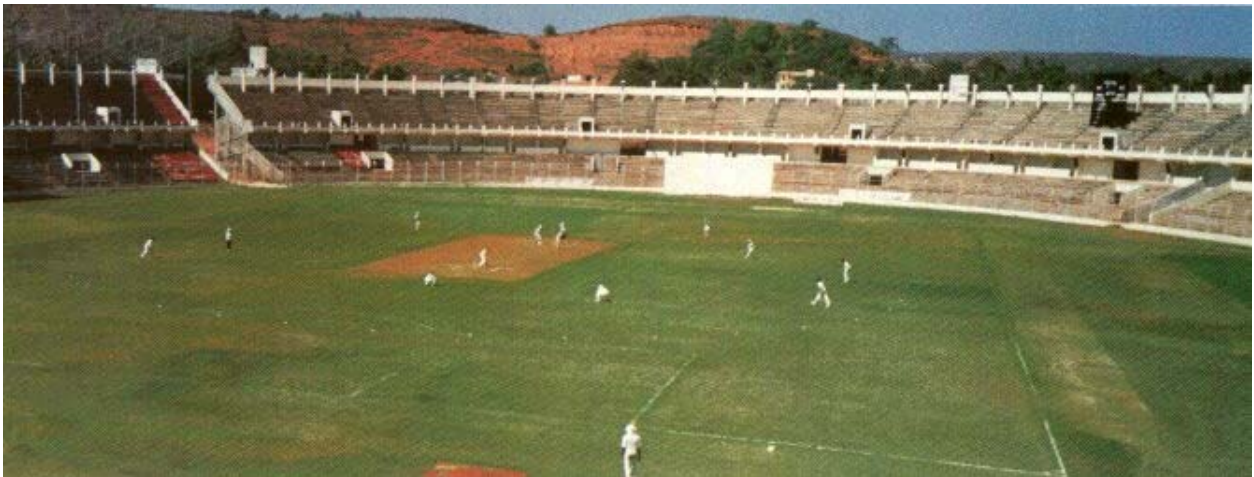
Now, through the use of cuttings rooted in horticultural perlite, the time to first production has been reduced by as much as 40%. Not only has water usage been dramatically reduced but labor costs have been cut and tree survival rates increased.

Following trials with several mix combinations, the Institute of Agricultural Research in Cyprus recommended horticultural perlite with 10% to 15% sphagnum peat as the best mix. Horticultural perlite has a normal neutral pH of 7 and sphagnum peat was added to lower the pH to 6.5-7 which is more suitable for olive tree propagation. Horticultural perlite was specified because it maintained a more uniform moisture and temperature level, was sterile and had good drainage characteristics.

## Stadium Turf in India

No grass is more highly stressed than stadium turf grass which is subjected to constant heavy traffic and compaction. Adding to this problem is irrigation, with water shortages or the lack of irrigation facilities creating an even greater barrier to maintenance of turf playing surfaces.

A case in point is the Jawaharlal Nehru Stadium in Goa, India. Grass management was dependent on limited irrigation October through March when there is no rainfall, intermittent showers in April and May and frequent rainfalls during the June to September monsoon season. In addition, the field was used almost daily for cricket, soccer, hockey and other athletic events. Because of this heavy usage, the field suffered from severe compaction and could not properly utilize available water. A test section of the stadium was renovated by tilling horticultural perlite into the top 6 inches (150 mm) of soil to create a 1:4 perlite to soil ratio and then reseeded. After two years of hard usage, the test section remains lush and green while the non-treated playing surface has brown areas and sections with no turf cover. In addition, the perlite treated section shows no evidence of compaction and is a more desirable playing surface. Excess water during the monsoon season rapidly drains away while an optimum amount of water is retained during the dry season. Although the frequency of irrigation is unchanged during the dry season, it has been determined that only 1/3 as much water is required on the perlite treated sections.



*The Jawaharlal Nehru Stadium, Goa, India, is used almost daily for cricket, soccer, or hockey and suffers severe compaction in sections not treated with perlite.*