

Growing Media

In the protected cultivation of ornamental crops, the use of artificial substrates continues to grow worldwide¹. Each growing media has its own specific characteristics. Production protocols therefore vary according to the substrate used. Among the preferred materials are rockwool and coir – two substrates that illustrate perfectly the need for a different management approach, especially when making an analysis for fertilizer recommendations.



Substrate analysis – best choice for coir

Switching from one substrate to another is a choice for growers. The price of a substrate is commonly the number one reason to investigate alternative options. Fer Weerheijm, managing director Dutch Plantin, says, “On some horticultural nurseries, e.g. in Korea and Mexico we are also seeing that the choice for coir substrates has been based on the extra cost savings realized with coir compared to rockwool when disposing of the material after production is finished.” Replacing rockwool with coir, however, means more than the elimination of hazardous disposal problems. The growing protocol for each of these substrates is different. Weerheijm explains, “Coir mixes have both a high water holding

capacity and air-filled porosity; if the right coir mixes are used they can, therefore, never be too wet. At the same time it is not necessary to have an irrigation regime where 30-40% of the water and fertilizer is drained away. Since irrigation systems where drain water is re-circulated are very limited, this over-drain procedure (common to rockwool) not only incurs redundant fertilizer costs, it is also an environmental threat.” The combination of water holding capacity and a natural tolerance of salts is the main reason why over-drain can be moderated with coir based hydroponics (see Figure 1). Weerheijm likes to use the comparison of a yacht and a jet-ski saying, “Steering plant growth using coir products is like sailing a yacht,

while rockwool is comparable to driving a jet-ski (in other words the influence of changing climate or irrigation is felt immediately and effects the situation of the roots).”

Substrate, not drain water analysis

The buffering ability of coir substrates also means that the procedures for EC and pH measuring and control should be based on a substrate sample analysis rather than drain water. Drain water provides a spot measurement while a substrate sample can be used as a forecast for fertilizer recommendations over a two to four week period. Gert-Jan Krook, international sales manager Bgg, an agricultural laboratory, says, “The services we provide based on a substrate

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