
WOODFIBRE

Dr Eleni Siasou takes a look at peat alternatives



EXPERT ADVICE FROM THE WORLD OF HORTICULTURE

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With increasing interest in woodfibre for growing media Dr Eleni Siasou – ICL's Product Development and Quality Manager for Growing Media – together with Dr Brian Jackson – Associate Professor in Horticulture Substrates in the Department of Horticultural Science at North Carolina State University, USA – and Dorus Rijkers – ICL's International Technical Manager for Plant Nutrition, take a closer look at this popular peat alternative in the first of a two part series.

With the on-going drive to reduce the usage of peat in UK horticulture, interest in and use of other materials has increased. 'Classic' non-peat "inorganic" materials such as perlite, loam, sand and grit, and are only used in low percentages due to price and potentially undesirable physical properties. In addition there are three other products "organic materials" – widely used in the UK professional growing media - coir, bark and woodfibre



As you would expect, woodfibre means fibres of wood and is a general term that does not specify;

- i) the species or mix of wood species utilised to create the fibres,
- ii) the age or the parts of the trees (cuttings, branches, timber by-products, whole trees)
- iii) the mechanical manufacturing process – various machines are used 'extruders', 'hammer mills', 'disc refiners' and 'knife ring flakers'
- iv) the chemical manufacturing process – altering the C:N ratio by N fortification (impregnation).
- v) the physical structure and inherent chemical nature of the product

Signification variation

As a result, commercial woodfibre products from across the globe can vary significantly in physical and chemical properties; pH, porosity, water and nutrient holding capacity, and potential toxicity depending on the age and manufacturing process of the material.

For instance, in the U.S. yellow/loblolly pine (*Pinus taeda*) is mainly used, while in Europe European species of pine (*P. sylvestris*, *P. maritima*, *P. pinaster*, *P. nigra*) are the main sources. There are reports in the literature of *Larix* (larch) and *Picea* (spruce) species also being used for woodfibre production, as well as some anecdotal evidence of waste material from commercial wood products and crops being utilised to produce woodfibres for the horticultural market.

The wood component, most often referred to as 'woodfibre', was first used in the 80s-90s before becoming popular in the last decade. At the outset very little was known in terms of handling requirements for such growing media components and mixes. Increased demand for woodfibre in horticultural container crop production has acted as a catalyst for thorough scientific studies and trials culminating in more in-depth knowledge of how to manage these woodfibre mixes.



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To date, there have been over two dozen different hardwood and softwood tree species evaluated for their potential use as growing media components. Most have been found to be unsuitable due to poor plant growth, availability, cost, processing issues or other reasons.

Peat based mixes containing 20-30% woodfibre can constitute high quality growing media which can reliably produce good plant/crop growth in a variety of plant species. Peat works as a 'blank canvas' and can form exceptional growing substrates on its own, as well as in combination with coir, bark and woodfibre. The major challenge facing the UK growing media industry is the creation of peat free mixes based on woodfibre, coir and bark.