Wood components: a step towards a sustainable growing media

Since its inception in the 1980s-90’s, the use of wood fiber (or other wood components) has been a minor contributor as an alternative to the more traditional and accepted peat moss and pine bark materials. Why gaining interest

There are now various reasons why wood components are gaining more interest than before. Some of the reasons include: 1) more governmental regulations on peat harvesting and use; 2) governmental subsidies and incentives for peat-free materials; 3) a broader societal/consumer focus on sustainability and preference for local products; 4) an economic opportunity to reduce raw material transport distance, weight, and cost; 5) a more common thought from industry officials and substrate manufacturers that they cannot rely entirely on a single component such as peat as its major raw material in the long term future; and 6) a growing body of scientific data on the successful utilization of wood components in growing media. With interest and opportunity comes the need for understanding the differences in these products/materials and an even greater need for a systematic understanding of how wood components are manufactured and used.

Variables

There are many ways to produce wood components, and there are even more factors that influence the consistency and reproducibility of those components during processing. There are many types of machines that reduce trees/logs into smaller sizes: shredders, chippers, wood hogs, shavers, etc. There are also different techniques and machinery used to further reduce those smaller wood materials (feedstock) into various types of wood components, including extruders, disc refiners, hammer-mills, knife ring flakers, etc. No two types or methods will yield the exact same end-product. Regardless of the type of machine/machinery used, the variables that influence the engineering of the wood components have to be understood, accounted for, and minimalized as much as possible. As with all things “Engineered” there are standards, protocols, and guidelines for how to successfully reproduce a consistent
product. These principles also apply in the manufacturing of wood substrate materials.

**Potential substrates/components**

Many tree species and wood sources have been investigated over the years as potential substrates/components. The main species used to make commercial products are Pinus, Larix, and Picea. Factors that influence the usability of a particular tree species (or wood source) include availability, abundance of resource, other competing markets for the trees, toxicity of wood, rate or degradation and breakdown, grindability (ability to be easily processed/engineered), etc.

Wood materials can be sourced from freshly harvested whole trees, unused tree parts remaining after timber harvest, tree pruning waste, storm debris, etc. Wood materials should not come from commercial sources like construction debris, pressurized treated lumber, etc. as those materials can contain traces of heavy metals. Diseased or insect-infected timber should also be avoided as a source of wood/forest materials and instead be used for other potential purposes like biofuel generation.

Sourcing and acquisition of raw wood materials is important and must be monitored so that the quality of the produced wood fiber/components remain high. Other initiatives are also being considered by some substrate manufacturers to acquire land for the specific purpose of “growing their own substrate” by growing their own trees.

**Wood is not wood, is not wood**

Just as we know very well….peat is NOT peat, is NOT peat,….we must also learn and appreciate that wood is NOT wood, is NOT wood! The range of peat materials, fractions, sizes, and ages is extremely diverse and these different peats are used in different ways. The same mindset is needed when working with wood components. It is important that any grower or other potential consumer/user of substrates composed of wood components, be knowledgeable about these new materials, and that they ask many questions of the manufacturer to assure they know how to best use the wood material in their production operation. The commercialization of wood substrate components will only increase in the near future, as will the need for more information about their utilization. Much work is being done on the scientific side to support this initiative!