Quality of growing media matters

PRODUCT SHEET

COIR PRODUCTS

Coir products are renewable substrate raw materials originating from the husk of the coconut. They combine a workable structure with favourable water and air management properties and are therefore widely used in substrates worldwide.

What are coir products?

There are different types of coir products, including coir pith, coir chips/crush and coir fibre. These materials are obtained from the husk (mesocarp) of the coconut palm (*Cocos nucifera*). Coir pith is the fine fraction and can be used both as a pure growing medium and in substrate mixtures. Coir fibre consists of short-cut fibres that are mainly used to improve water distribution of substrates. Coir chips or crush are coarser fractions that provide additional air porosity in the substrate. After processing, coir products are chemically stable and suitable for use in professional substrates and consumer potting soils.

Origin

Coir products originate from countries where coconuts are cultivated on a large scale, including India, Sri Lanka, Côte d'Ivoire and the Dominican Republic. The raw material becomes available as a by-product of coconut processing for other applications, such as the food and fibre industries. Coir pith is the residual material remaining after fibres have been extracted from the coconut husk. Coir chips or coir crush are produced by coarsely cutting or shredding the entire husk.

Properties

Coir products naturally contain relatively high levels of salts and are therefore not immediately suitable for use as substrate raw materials. To reduce the salt content, the coir must be washed. However, even after proper washing, salts may still be released from the so-called adsorption complex. The release of these salts during cultivation is highly undesirable. This can be prevented by buffering the coir. Coir buffering is a process developed by RHP in 1996 and must be carried out under controlled conditions.

Coir products are characterised by a favourable balance between water-holding capacity and air-filled porosity. Coir pith differs from other products because of its relatively high air content despite its fine particle size. It can also retain large amounts of water and is generally a homogeneous product. Coarser coir products, such as coir chips and coir crush, have a higher air content depending on particle size. In addition, all coir products rewet and absorb water very quickly. This is regarded as an advantage for many crops.

Coir products must be physically stable. To achieve this, coir pith must undergo a controlled coir ageing process. This

stabilisation process prevents coir pith from decomposing during use.

An overview of the properties of RHP certified coir products:

Chemical

Nutrient level	very low*
Unwanted salts	very low*
pH-H_2O	5.0-6.5
pH-buffering capacity	moderate
Nitrogen immobilization	low**
Pesticide residues	occasional

Physical

Air content (%-v)	15-40
Water uptake characteristic (WOK)	very fast
Water retention capacity	high
Stability	high**

Biological

Viable (tropical) weed seeds and plant pathogens	low***
Susceptibility to saprotrophic fungi	moderate
Human pathogens	depending on origin

* *After proper processing and buffering in accordance with the RHP standard.*

** *After a proper ageing process for coir pith.*

*** *Only when the entire chain is under control. Other wise, the risk is high.*

Purpose of use

Renewable raw material, fast rewetting/ water uptake, good water availability, stable structure.

Application

Coir pith is used as a pure growing medium and as a component in potting soils and substrate mixtures. It is used in vegetable, flower, potted plant and tree nursery production. Coarse coir products are added to provide substrates with a coarser, more open structure and to improve drainage. Due to their fast rewetting, good water availability and stable structure, coir products are among the most widely used renewable substrate raw materials worldwide.

Distinctive RHP quality

Producing a high-quality coir product requires attention to chemical, physical and biological aspects. RHP therefore sets requirements for production sites, process control and production by well-trained personnel following established protocols. Coir products often contain high levels of potassium, sodium and chloride. RHP sets requirements for the washing and buffering of coir. The buffering process, developed by RHP in 1996, ensures a stable nutrient balance and prevents unwanted nutrient exchange during cultivation. In addition to buffered coir, the RHP certification scheme includes the category ‘intensively washed’ under specific conditions. RHP also sets requirements for material stability and the control of biological risks. The stability of coir pith is ensured through the respiration method developed by RHP.

Biological (phytosanitary) aspects are assessed during frequent inspections of production sites, with particular attention given to storage conditions. Storage and drying on paved surfaces are mandatory, and the immediate surroundings are also inspected. Risks are controlled as early as possible in the chain and minimised through process control in subsequent chain stages. As a result, risks such as viable (tropical) weed seeds, plant diseases and contamination with mineral particles are prevented as much as possible. RHP conducts e.g. weed seed tests at a high frequency to verify compliance with its requirements.