Quality of growing media matters

Free Peat
Att: C. Kerdel
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7676 SH Westerhaar-Vriezenveensewijk
The Netherlands

Date : 28 of August 2019
Ref.nr. : MZ/U.19.19163-2
Subject : Declaration RHP certified substrate

Dear Mr. Kerdel,

Foundation RHP is an organization for quality control of horticultural substrates in Europe. RHP checks raw materials and compositions of substrates according to established standards and requirements. These standards are based on chemical, physical, phytohygienic and common aspects. After analyzing and approval, the substrate receives the RHP-quality mark.

Growing Media produced by **Free Peat** and delivered with the RHP quality mark, meets the RHP standards. **Free Peat** supplied the substrate 'Grow All Potting Mix'. This substrate is free of contamination with heavy metals, radioactivity, weed seeds and plant-pathogens (like harmful nematodes) and human-pathogens according to the RHP standards. Based on the results of monitoring, the growing media can be declared free of contamination.

The RHP quality mark requires full control of production processes in order to effectively exclude possible contamination in the supply chain.

Under the RHP-quality mark products can be traced back to the original constituents. The independent Certification Institute ECAS checks production files regularly to confirm that substrates are produced in conformity with the specifications.

Yours sincerely,

Hein Boon
Director RHP

Enclosed: Working method and some of the important RHP standards

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RHP Centre of certification and expertise for growing media

RHP is the knowledge institute for growing media and the organization for quality control of horticultural substrates in Europe. Growing media are an important basis for a successful crop.
It is important to optimize and secure the quality of the product and the production process. The RHP Quality Mark ensures that both are in accordance with established standards and requirements. These standards are based on:

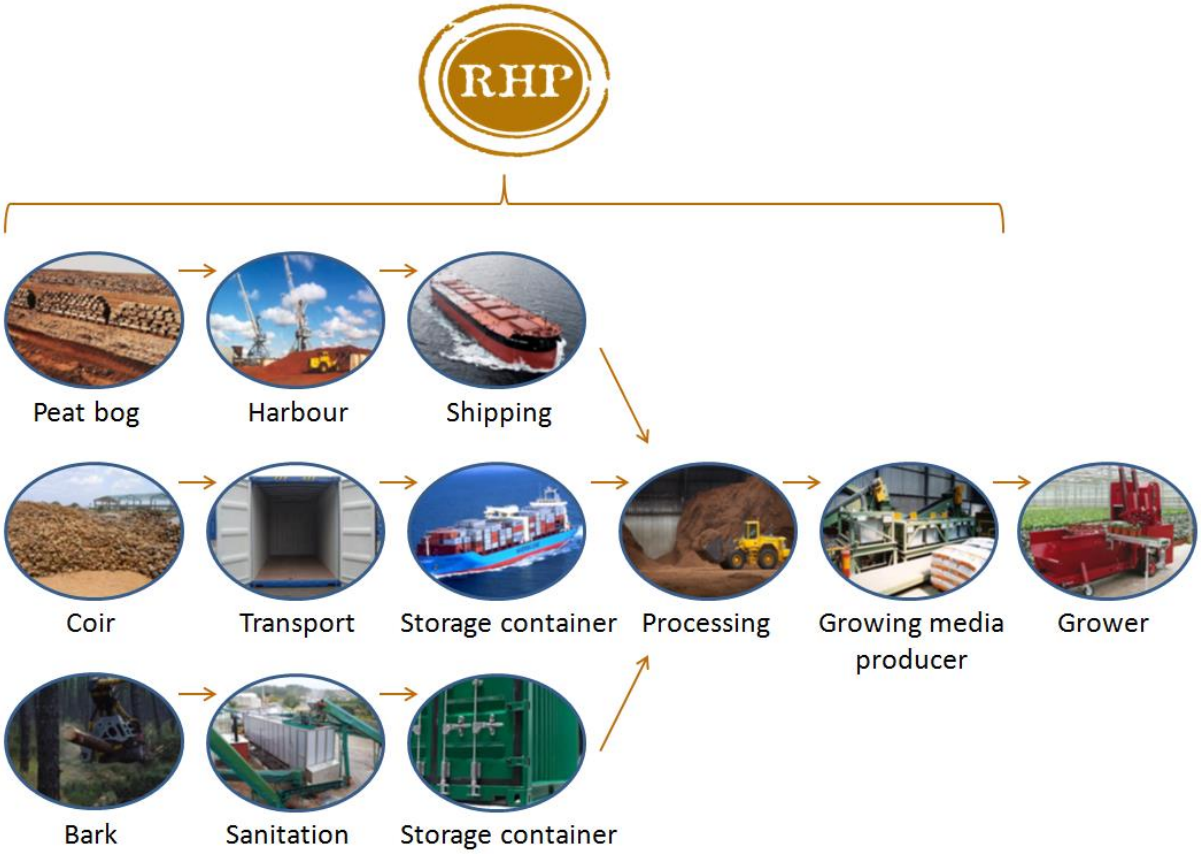
- general product requirements
- chemical product requirements
- physical product requirements
- phytohygienic and human-hygienic requirements

After analysing and approval, the product receives the RHP Quality Mark.

RHP covers all safety aspects for plants, people and environment

Creating security by controlling the entire supply chain

The RHP Quality Mark applies for substrate producers, substrate suppliers, extraction- and production sites of raw materials, storage locations, harbour locations and logistic processes. Companies that work according to the requirements of the Product Certification Scheme of the RHP Quality Mark, are allowed to use the RHP Quality Mark only for products for which they are certified.



The RHP Quality Mark guarantees the quality of the product in the chain from extraction till processing at the grower. The production site, the operating processes, storage facilities and logistic processes are monitored, as well as the product.

The RHP Quality Mark requires full control of production processes in the supply chain

In the Product Certification Scheme all standards and requirements are described that participants have to comply with: general process requirements, audits, document and data management, necessary training, the control of inspection measuring equipment and test equipment, and controlling products with defects. Participants of the RHP Quality Mark implement all standards and requirements in a quality system.

Inspections and audits

Certification for the quality mark is carried out by an independent Certification Institute, which is accredited for RHP by the 'Council for Accreditation' (RvA). Acceptance by the RvA means objectivity, transparency and international recognition. Inspections and audits are done at extraction areas and the production and storage locations by specialised inspectors. Frequently the inspection visits are not announced.

A part of the RHP product standards and requirements

General requirements
The RHP Quality Mark ensures that RHP certified products:

- comply with legal requirements of the country in which they are produced and processed
- contain no quantities of chemical compounds that would be harmful for plants
- are not radioactively contaminated, <370 Bq (Cs 134 + Cs 137)
- are not contaminated with impurities e.g. materials like stone, glass or wood
- that consists of several raw materials must be mixed in such a way that the properties of the batch are the same throughout the batch

Chemical requirements
The RHP Quality Mark sets requirements to the composition of additives (e.g. fertilisers) which are added to the substrate. It gives insight in the chemical properties of substrates, e.g.:

- specification of pH
- specification of EC
- assessment on N-P-K
- maximum filling elements (e.g. salts)
- trace elements
- heavy metals

All soil samples are analysed at RHP acknowledged laboratories. All raw materials must be classified in the nutrients table, unless otherwise indicated in the product specific requirements.

Physical requirements
The RHP Quality Mark secures the physical composition of the growing media to guarantee an optimal culture. RHP developed parameters to measure and specify:

- moisture and air content
- water uptake characteristic (WOK method)
- biological stability
- structure stability

Phytosanitary safety
Growing media and constituents which have the quality mark RHP Horticulture are clean and pure, therefore they are not contaminated with:

- live roots or green parts of plants
- plant pathogens, e.g. specific bacteria, viruses and fungi (zero tolerance)
- plant pathogenic nematodes (zero tolerance)
- dangerous human pathogens
- insects (visual inspections)
- viable (weed) seeds or club root, according to the RHP standards

Monitoring of processes by assessment of 3 indicator organisms: weeds, nematodes and club root
The product must comply with the specific RHP standards for **human pathogens**

Human pathogens	Standard	Human pathogens	Standard
Salmonella	Target value: 0	Enterobacteriaceae	< 10.000 cfu/g (indication standard)
Campylobacter	Target value: 0	E. colli	< 1.000 cfu/g

RHP maintains a zero tolerance for harmful plant nematodes. These nematodes are identified by family and genus.

Nematodes family	0-tolerance for Genus	"Specie" which must be specified on the analysis , if found	Nematodes family	0-tolerance for Genus	"Specie" which must be specified on the analysis , if found
Aphelenchoides	besseyi	besseyi	Paratrichodorus	spp.	nanus
	fragariae	fragariae			pachydermus
	ritzemabosi	ritzemabosi			renifer
	subtenuis	subtenuis			teres
Bursaphelenchus	xylophilus	xylophilus	Paratylenchus (Gracilacus)	spp.	bukowinensis
Criconema	spp				dianthus
Criconemoides (Criconemella)	spp.				nanus
Ditylenchus	destructor	destructor			projectus
	dipsaci	dipsaci	Pratylenchoides	spp.	
Globodera	spp.	pallida	Pratylenchus	spp.	bolivianus
		rostochiensis			convallariae
Helicotylenchus	spp.				crenatus
Hemicriconemoides	spp.				fallax
Hemicycliophora	spp.				flakkensis
Heterodera	spp.	avenae			neglectus
		betae			penetrans
		bifenestra			pratensis
		carotae			scribneri
		cruciferae			thornei
		glycines			vulnus
		goettingiana	Punctodera	spp.	punctata
		mani	Radopholus	spp.	similis
		schachtii	Rotylenchulus	spp.	reniformis
		trifolii	Rotylenchus (Pararotylenchus)	spp.	buxophilus
Hoplolaimus	spp.				goodeyi
Longidorus	spp.	attenuatus			robustus
		caespiticola			uniformis
		elongatus	Trichodorus	spp.	primitivus
		leptocephalus			similis
Meloidogyne	spp.	arenaria			viruliferus
		chitwoodi	Tylenchorhynchus	spp.	dubius
		fallax			claytoni
		hapla	Xiphinema	spp.	americanum s.s
		incognita			bricolense
		javanica			californicum
		naasi			diversicaudatum
Nacobbus	spp.	aberrans			rivesi
Paralongidorus	spp.	maximus			

The majority of nematodes in the world are not harmful to plants and may be present in the RHP substrates. The levels of these harmless nematodes usually are low, but may vary based on the constituents applied in the growing medium.