Quality of growing media

matters

Annual report 2024

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FOREWORD

We are proud to present our annual report 2024. We can look back on a year full of developments in the areas of quality, safety and sustainability.

Quality, safety and sustainability
The quality and sustainability of products go hand in hand. After all, a product that is produced responsibly with a low environmental impact only has value if it also has the quality to serve its intended purpose. Conversely, the demand for sustainable products is growing to such an extent that good quality alone no longer justifies a higher environmental impact than comparable products.

This trend can also be observed in the substrate sector. The demand for high-quality and safe substrates and substrate raw materials remains consistently strong. At the same time, increasing demands are being placed on how these are produced, and there is a growing call for more transparency regarding their environmental impact, both during production and in their use.

In 2024, RHP once again supported its affiliated companies worldwide with research and developments in the field of quality and safety. Knowledge was also shared with, among others, research institutions, growers and the retail sector about the importance of good substrates. In doing so, RHP represents all raw materials; it is ultimately up to the market to decide which raw materials will and won't be accepted.

At the same time, RHP is continuing to develop in areas such as environmental impact (LCA) and responsible production. In the future, these themes will be inseparably linked to the demand for high-quality products. In terms of responsible production, work has been done on developing a scheme to safeguard the social and environmental aspects of coir production. At the end of 2024, a pilot phase was launched to test this scheme in practice. Additionally, RHP also contributed in 2024 to the further development of the substrate footprint of Growing Media Europe.

New raw materials
We are seeing that companies increasingly want to experiment with new raw materials in order to continue meeting future demand. To avoid being limited by the requirements of the RHP quality mark, *RHP Innovation Support* has made it possible — under certain conditions — to conduct tests with raw materials that have not yet been certified. If these tests prove successful, a process can be started to bring these new raw materials under the quality mark. In 2024, this approach made it possible to certify spent substrate under the RHP Consumer quality mark, and standards were introduced for plugs. By the end of 2024, the first steps were taken towards setting up a development committee for cultivated plant fibres, with the aim of developing standards for crops such as miscanthus.

New certified companies
We are pleased to report that, once again in 2024, we were able to hand out new certificates, bringing the total number of RHP- and RAG-certified companies to 75, up from 71 at the end of 2023.

All in all, it was another interesting year, and we are pleased to tell you more about it in this annual report. We hope you enjoy reading it.

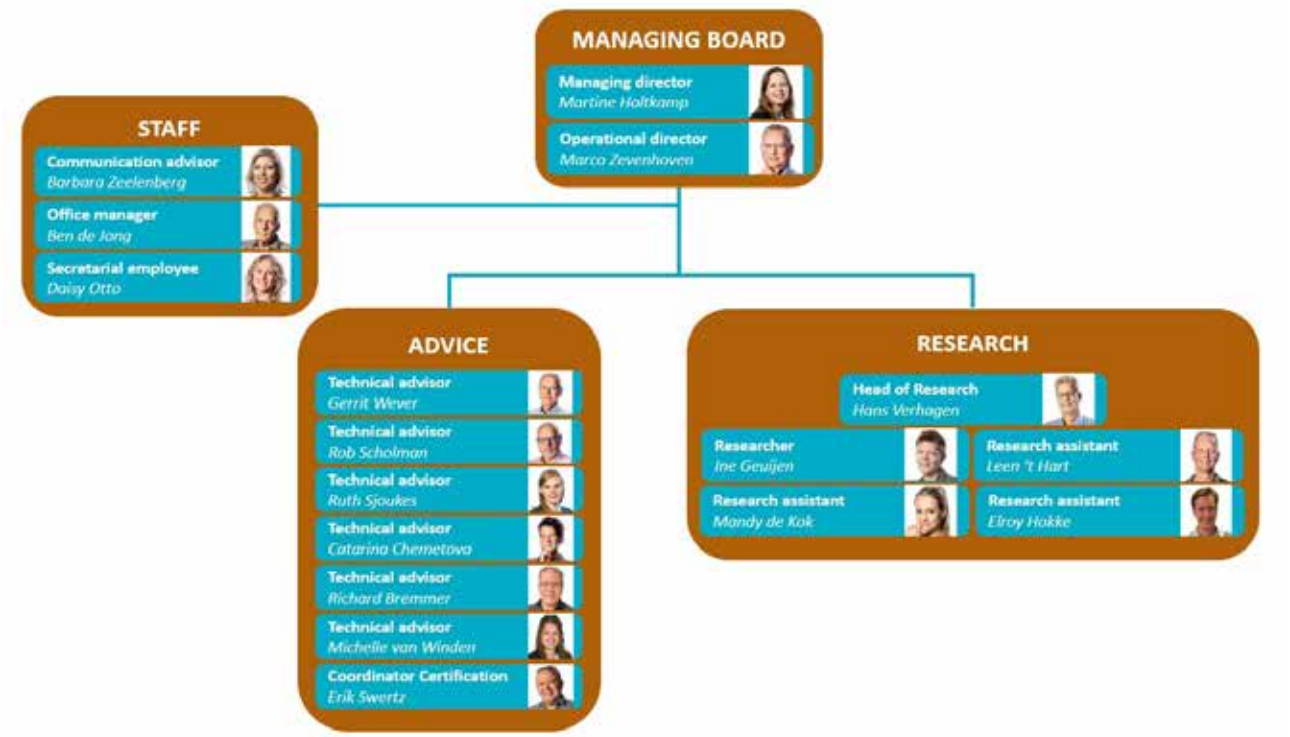
's-Gravenzande, The Netherlands, June 2025

Martine Holtkamp
Managing Director RHP

1. BOARD & ORGANISATION

1.1 The organisation in 2024

RHP is located in ‘s-Gravenzande in The Netherlands and is a foundation. At 31 December 2024, RHP had 17 employees.



RHP hired three new employees in 2024: two in the role of technical advisor and one research assistant, who succeeded a departing colleague.

Employees in 2024

Number of employees

17
15 FTE

Average age

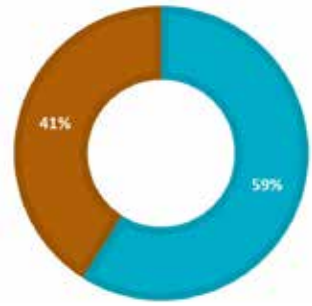
48
years

Duration of employment

12
years

Male/female

41% female **59**% male



1.2 Composition of the Supervisory Board

The Supervisory Board is the supervisory body of foundation RHP. The Supervisory Board consists of persons who feel involved with growing media from their function or personal affinity. They represent substrate producers (certified companies), users and the chain. The Supervisory Board meets every quarter, together with the management of RHP. The composition of the Supervisory Board in 2024 was as follows:

Name: Bernard Koeckhoven
Position: chairman
Since: 1 January 2020

Name: Ronald Grootscholten (Florpartners)
Position: member
Since: 22 September 2022

Name: Jaco Dijkshoorn (Kekkilä-BVB)
Position: member
Since: 1 January 2020

Name: Daphne Bronckhorst (Klasmann-Deilmann)
Position: member
Since: 1 January 2024

Name: Piet Kuivenhoven (kwekerij Kuivenhoven Poeldijk)
Position: member
Since: 1 June 2024

2. STRATEGIC POLICY

2.1 Vision and strategy

In consultation with the Supervisory Board, a new vision and strategic plan 2024-2027 were established at the beginning of 2024. Based on this, the plans for the coming years were set up.

Our vision is:
"RHP is the international centre for knowledge about and certification of growing media in the field of quality, safety and sustainability."

RHP aims to incorporate sustainability in the coming years, making it the only organisation to offer a unique, convenient three-in-one offering for certification of growing media and (an increasing number of) substrate raw materials. This is visualised as follows:

✔ **Product safety and quality**:
RHP serves the growing media and substrate raw material producers (primary) and other parties in the chain (secondary) with advanced knowledge about the safety and quality of traditional and renewable raw materials.
The demand for knowledge about (renewable) raw materials and growing media continues to grow among the current group of certified companies as well as other stakeholders. The current combination of research, consultancy, training and the quality mark for product safety and quality, is the strong foundation that provides opportunities for a solid positioning in the raw materials transition and expansion into sustainability topics. Thereby, it is of great importance that RHP can switch fast and provide the sector with knowledge about and possibilities to work safely with renewable raw materials.

✔ **Substrate footprint**:
RHP is the implementer (advice and validation/certification) of the substrate LCA tool developed by Growing Media Europe.
The development of the substrate footprint was initiated by Growing Media Europe (GME) in 2019. This substrate footprint calculates the environmental impact of growing media on 16 different themes (including CO_2, soil and water pollution, ecotoxicity and fossil fuel depletion). The methodology of the substrate footprint is in line with the European accepted standard for LCA calculations within the floriculture sector (the FloriPEFCR) and the fruit and vegetable sector (Freshfel Environmental Footprint). RHP's ambition, together with GME and other relevant stakeholders, is to take the footprint calculation to the

next level and eventually become the implementer in the field of consultancy, verification and certification.

✔ **Responsible production**:
RHP is provider of a uniform scheme with which responsible production of growing media and substrate raw materials can be guaranteed.
The way products are created and the impact this production has on the local environment is increasingly on the agenda of civil society organisations and NGOs. Responsible production is about the way growing media and substrate raw materials are produced. Hereby, the social aspects (including working conditions) and the impact of the activities on the direct environment (e.g. water consumption and its impact on the local population) are central. RHP has the ambition to guarantee the responsible production of growing media and substrate raw materials with a uniform certification scheme.

2.2 Knowledge development and knowledge sharing

Research at RHP continued in full force in 2024. Through the collective research programme, attention was devoted to knowledge development in areas such as pesticide residues in substrate raw materials, the influence of packaging on substrate, human pathogens, and the structural stability of raw materials.

The knowledge generated through these studies was shared with certified companies via company visits, webinars and meetings. The factsheets regularly published by RHP are publicly accessible and provide insights into specific topics

including fungal growth, pesticides and DNA research.

In 2024, RHP also held discussions with and gave presentations to various (inter)national organisations: scheme owners, trade associations, research institutes, interest groups, traders, retail and professional growers. These conversations focused, among other things, on market needs regarding the sustainability of raw materials and substrates in relation to the RHP quality mark. With substrates containing an increasing proportion of renewable materials, the cultivation methods used by professional growers were also an important topic of discussion.

2.3 Collaborations

Hort2theFuture
The European collaboration project Hort2theFuture was launched in 2024. In this project, 28 European universities and organisations are conducting research into scalable, affordable and easy-to-use growing media based on raw

materials from within the EU with a low environmental footprint. RHP's role in this project is to develop an online calculation tool for growing media.

Roadmap and opportunities map
At the end of 2023, it was announced that the Top Sector Horticulture & Propagation Materials had made funding available for the development of a roadmap combining research questions concerning renewable raw materials. In 2024, two workshops were organised for this purpose, attended by a broad representation from across the sector. The final result is a 'Roadmap and opportunities map' in which, based on eight different themes (routes), necessary actions have been formulated. In many cases, RHP will be actively involved as action leader or participant in carrying out these actions.

Public-private partnership project microbiome in growing media
RHP's participation in the Top Sector research project on microbiological

quality in growing media was also continued in 2024. Together with other parties, we are working towards ultimately realising growing media with guaranteed microbiological activity, including sound cultivation advice to maintain the right microbial properties during the culture. The full name of this project (public-private partnership) is 'Towards a standard for measuring the microbiological quality of growing media based on renewable raw materials'. The project management is in the hands of Glastuinbouw Nederland; Wageningen University & Research is conducting the research. RHP and other private parties contribute with knowledge and expertise. Knowledge and methods resulting from this project are important for RHP and its affiliated, certified companies.

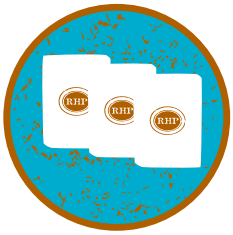
3. KEY FIGURES

CERTIFIED COMPANIES

75

Including 4 new certified companies in 2024: **Van Egmond Potgrond** from the Netherlands, **Harte Peat** from Ireland, **Naujasis Kalcitas** from Lithuania and **Comgoed** from the Netherlands.

CERTIFIED RAW MATERIALS AND END PRODUCTS



29

Including 3 new certifiable raw materials in 2024: **topsoil substrate**, **spent substrate** and **plugs**.

MEETINGS

PRODUCT GROUPS **18**

TECHNICAL COMMITTEE **2**

CENTRAL COLLEGE OF EXPERTS **2**

428

CERTIFIED LOCATIONS

15.052

PRODUCT ANALYSES

11.000.000 m³

CERTIFIED PRODUCT

FINANCES

NETTO TURNOVER: € 2,191,072

RHP is a non-profit foundation. Part of the result is intended for laboratory renovation; the remainder is added to the reserves for the continuity of the foundation and research and development for the substrate sector.

WEBINARS 4 of which:

> for certified companies

- Online Research Updates (March, June, October) **3**
- hybrid meeting 'From research to practice: RHP insights and testing new growing media' (December) **1**

IMPROVEMENT ANALYSES **214**

RISK ANALYSES **30**

HYGIENE PROTOCOLS **24**

INTERNAL AUDITS **36**

CONSULTATION IN THE CONTEXT OF SUPPORT AND ADVICE **162**

DAMAGE/PRACTICAL PROBLEMS **22**

COMPANY VISITS TECHNICAL ADVISORS

TRAININGS 8

> for certified companies

- Training RAG Landscaping A (in-company) **1**
- Training Potting soil & Substrates (Dutch) **1**
- Training Growing Media A (Dutch) **1**
- Training Growing Media B (Dutch) **1**
- In-company trainings **3**

> for auditors

- Training and harmonisation day for auditors of the quality marks RHP and RAG **1**

PRESENTATIONS

On several occasions in Europe, a representative of RHP presented our organisation, quality marks, our research on raw materials and growing media and/or developments within the sector. For example during:

- a visit to Tamil Nadu Agricultural University in Coimbatore, India (December)
- information meetings for the Dutch (garden) retail & wholesale (November)
- the knowledge meeting 'Building a strong miscanthus chain in potted plant cultivation' (October)
- the Pot and bedding plant day of Glastuinbouw Nederland (October)
- the Baltic Peat Producers Forum, Latvia (September)
- the fair 'Vakbeurs Openbare Ruimte' (September)
- the Knowledge Day Substrate 'In depth with new growing media' (April)
- the technical meeting for certified companies in the Baltic States and Scandinavia (April)
- HortiContact (March)
- a visit to Kingfisher, UK (February)
- the job fair in the World Horti Center (February)
- the digital symposium 'Peat in potting soil and the search for alternative substrates' (January)
- IPM in Essen (January)
- Strawberry Day (January)
- various meetings at certified companies.

INTERNATIONAL VISITORS

In addition, RHP received (inter)national visitors, including from: Royal Horticultural Society (UK), students of Lentiz MBO Westland, Ministry of Agriculture, Nature and Food Quality, Responsibly Produced Peat, the Association of Potting Soil and Substrate Manufacturers in the Netherlands, and (potential) certified companies.

Safe innovation with new materials

In 2024, RHP launched *RHP Innovation Support* to enable certified companies to safely and responsibly innovate with new substrate raw materials at their RHP locations. In addition, RHP increased the maximum dosage of RHP compost in substrates in 2024.

Since 2022, a signed covenant has been in place between the substrate sector, market parties, NGOs and the Dutch government, with the aim of reducing the environmental impact of substrates and increasing the share of renewable raw materials in growing media. Innovation with new raw materials is crucial, but requires careful practical trials to continue guaranteeing the safety and quality of growing media for growers.
Since 2024, RHP has been offering certified companies technical advice and support for innovating with new, non-certified raw materials at their RHP locations. Because these materials can pose risks to existing production processes and product quality, careful handling is essential. With *RHP Innovation Support*, RHP offers certified companies the opportunity to develop and test new, non-certified raw materials at their own production location, without this affecting their certified products.

Through a step-by-step exemption process in two phases, companies are granted permission to test new materials in a controlled manner. In phase 1, small-scale practical trials are carried out, followed by an evaluation and a comprehensive risk assessment. If the outcome is positive, phase 2 can begin, in which larger volumes may be tested. Throughout this process, RHP acts as an expert sparring partner.

With 'RHP Innovation Support' we enable safe innovation for certified companies.

In addition, in 2024 RHP increased the maximum dosage of RHP compost. For consumer potting soils, this percentage has been raised to 40%, and for professional substrates to 30%. This increase is based on new insights and practical trials, and aligns with the Dutch covenant Environmental Impact of Potting Soil and Substrates.

RHP is also researching the possibilities of sanitation of new renewable raw materials through co-composting. In this process, a new raw material undergoes the full composting process together with compost to eliminate harmful organisms. This increases the opportunities to safely incorporate a wider range of renewable raw materials into substrates.

Innovation with new materials, without compromising on quality and safety.

In this way, RHP enables certified companies to develop future-proof substrate solutions while maintaining the quality of their products. This allows the sector to continue innovating within safe boundaries and to contribute to the sustainability of growing media.

Collective research

Both primary and renewable substrate raw materials were the main theme of the collective research in 2024.

Calculation models
In 2024, work was carried out on the development of calculation models for substrates. These models make it possible to calculate the physical properties and fertilizing value of growing media based on their composition. In 2025, the models will be converted into an online calculation tool.

Behaviour of packaged growing media
Research was also conducted into packaged growing media. The study examined the effect of airtight packaging on the quality of substrates. New techniques were used to monitor the oxygen content in packaging such as big bales. The research showed that the development of anaerobic conditions (oxygen deficiency) in airtight substrate packaging can lead to the loss of nitrogen in particular from the substrate. This topic will be further explored in 2025, with a focus on preventing anaerobic conditions in packaged growing media.

Residue in raw materials
Research into residues in 2024 provided insight into the presence of pesticide residues in renewable raw materials. In addition, a study was conducted into the "No Effect Level" of two commonly found herbicides. This forms a basis for future standardization.

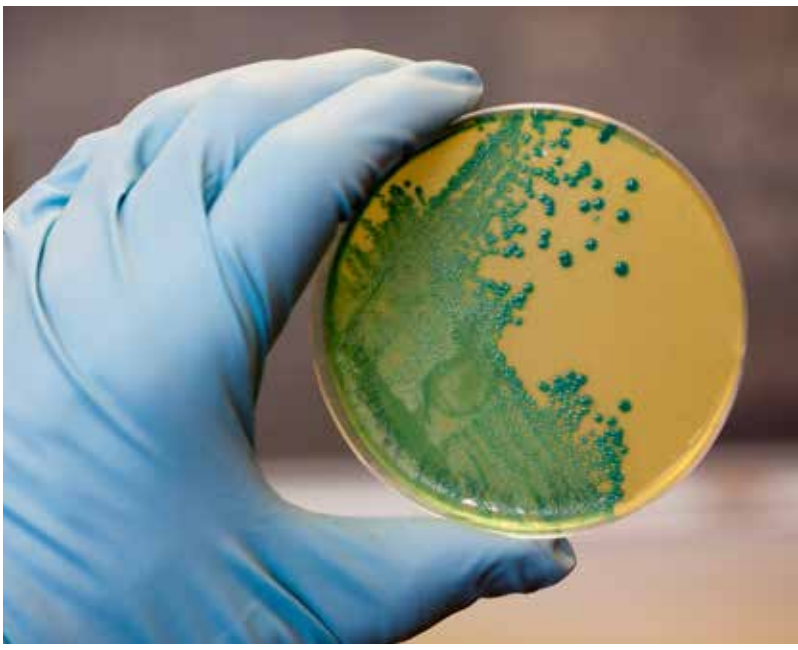
In 2025, work will continue on:

✔ Development of the online calculation tool for growing media:
The online calculation tool will be developed within the framework of the EU project Hort2theFuture.

✔ Structural stability of raw materials:
Raw materials will be tested for their structural stability in an incubation setup, monitoring the loss of structural strength over time.

✔ Human pathogens in raw materials and growing media:
The research aims to provide insight into the presence of human pathogens in raw materials and their development in growing media.

✔ Behaviour of packaged growing media:
This year, the focus will be on practical measurements, specifically analysing which factors are important in preventing anaerobic conditions in packaging.



5. QUALITY MARKS

The foundation RHP manages 2 quality marks for substrates and potting soil, the RHP quality mark and the RAG quality mark, with a total of 6 different fields of application:

RHP *Certified for* **Horticulture**

RHP *Certified for* **Mushrooms**

RHP *Certified for* **Consumer**

RAG *Certified for* **Landscaping**

RAG *Certified for* **Green Roof**

RAG *Certified for* **Soil Improvement**

Further development of RHP quality mark
On 1 February, the standards for the RHP quality mark were updated. These content-related adjustments are made annually to the RHP product certification scheme, partly based on developments within the sector. The affiliated, certified companies were then given three months to implement these changes within their operations and quality management systems. The new requirements came into effect on 1 May.

New products to be certified
In 2024, two new products were added to the RHP product certification scheme: plugs and other small preformed growing media (RHP Horticulture) and spent substrate (RHP Consumer). For the latter product, the first company also obtained RHP certification in 2024. Additionally, a new product was introduced to the RAG product certification scheme in 2024: topsoil substrate.

Safe innovation with new materials at production site
In 2024, through *RHP Innovation Support*, RHP took important steps that contribute to the objectives of the Dutch covenant Environmental Impact of Potting Soil and Substrates. Thanks to this initiative, certified companies were given the opportunity — under specific conditions and with advice and expert support from RHP's technical advisors — to safely and in a controlled manner test new, non-certified raw materials at their own RHP production location. Through a carefully structured two-phase exemption process, companies were able to start innovating with new materials in 2024 without posing risks to their certified products on site.

Online registration module Hermes
In the second half of 2024, several certified companies began using Hermes, the online registration module for product samples. The initial feedback was positive and, based on the experiences from these trials, RHP implemented a number of optimisations to further improve the system. In 2025, all certified companies will be gradually transitioned to Hermes, digitising the process for submitting product samples.

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