



Kwaliteit van substraat
is de basis



Grip on the new growing media

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RHP



Working method RHP

✓ Research

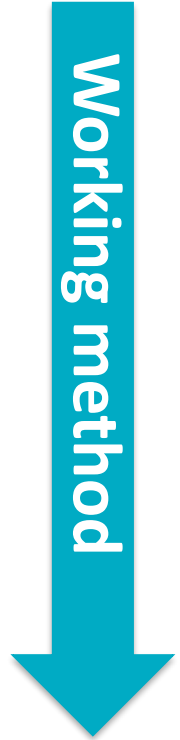
- ✓ Optimisation of substrates and raw materials
- ✓ Creating measuring tools – innovation support

✓ Consultancy

- ✓ Communication of new knowledge and bringing it into practise by company visits and training

✓ Quality mark (RHP)

- ✓ Testing whether new knowledge is being applied correctly and if products meet the standards





Overview

CERTIFIED
LOCATIONS

431

all over the world



CERTIFIED
COMPANIES

76

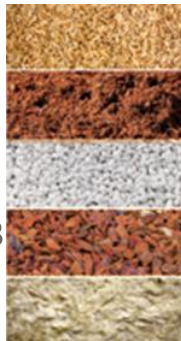
70%

international



CERTIFIED
PRODUCT

11.000.000 m³
per year



STANDARDS DEVELOPED
WITH USERS AND
PRODUCERS



PRODUCT
ANALYSES

15.584

per year

INSPECTION VISITS

1-4x

per year
(also unannounced)



Attention points for raw materials

We distinguish:

✓ **Safety**



*Heavy metals - stability -
free of plant diseases - ..*

✓ **Quality**



*EC – nutrients - pH –
nitrogen immobilization –
air content – water uptake
characteristic - ...*



RHP Control: the whole production chain





Covenant – all stakeholders

Gouvernement



Ministerie van Economische Zaken
en Klimaat



Ministerie van Landbouw,
Natuur en Voedselkwaliteit

Certification



responsibly produced peat

NGO



TURFVRIJ
peatfree

Industry



Vereniging
Potgrond- en Substraatfabrikanten
Nederland

Plantum



Glasmuinbouw
Nederland



TUINBRANCHE
NEDERLAND



Koninklijke
Nederlandse
Fruittelers
Organisatie



LTO Nederland
bomen, vaste planten
en zomerbloemen



Covenant – the basics

✓ The goal is:

To reduce the environmental impact of substrates

Reduction of peat is a consequence, but not a goal itself

✓ An alternative for peat must have less environmental impact

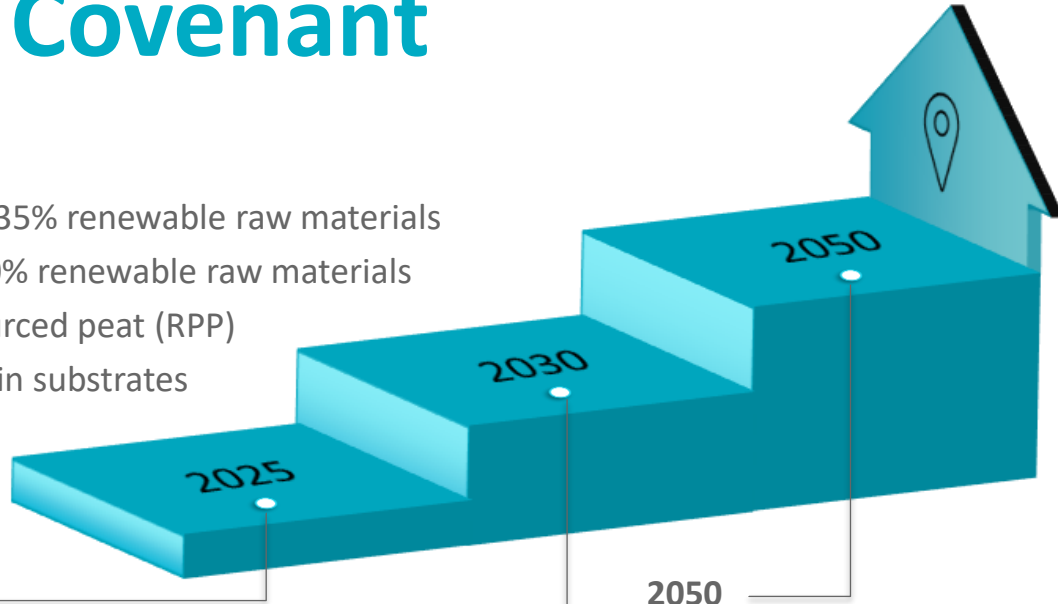
*A decent and accepted footprint calculation is leading
Not just CO₂ !!!*



Dutch Covenant

2025

- ✓ Professional market: 35% renewable raw materials
- ✓ Consumer market: 60% renewable raw materials
- ✓ 100% responsibly sourced peat (RPP)
- ✓ 300,000 m³ compost in substrates



2030

- ✓ Independent research into the availability of raw materials
- ✓ Professional market: new objectives based on research
- ✓ Consumer market: 85% renewable raw materials

2050

- ✓ Substrates are climate neutral and have no negative environmental impact
- ✓ 90% renewable materials on average



Raw materials transition

- ✓ RHP has been conducting research for years, to enable higher doses of new raw materials safely and responsibly
- ✓ Starting point: the materials must be **safe** and meet **quality** criteria (*fit for practice*) !!!



performance



Risks can lead to damages - *Safety*

What are the biggest risks of renewable materials with regard to safety?

- ✓ Plant diseases and pests
- ✓ Plant toxic substances
- ✓ Residues of pesticides or medicines
- ✓ Human pathogens
- ✓ PFAS, micro plastics
- ✓





Residues in raw materials - *Safety*

RHP is monitoring the presence of pesticide residues in renewable materials

(certified and uncertified products)

Product	Samples containing residue
Bark	35 %
Wood fibre	18 %
Coir	5 %
Composted green waste	69 %
Organic fertilizer	65 %
<i>Peat</i>	<3 %



Risks can lead to damage - *Safety*

When safety or quality is not up to the mark, there will be loss of yield or even damage !!





Renewable raw materials - *Safety*

Renewable raw materials have a greater risk e.g. of carrying plant diseases

- ✓ Limit the risks – choices based on risk assessments and control
- ✓ Developing processes to make a product suitable e.g. sanitation, buffering etc.





Renewable raw materials - *Quality*

What has to be done:

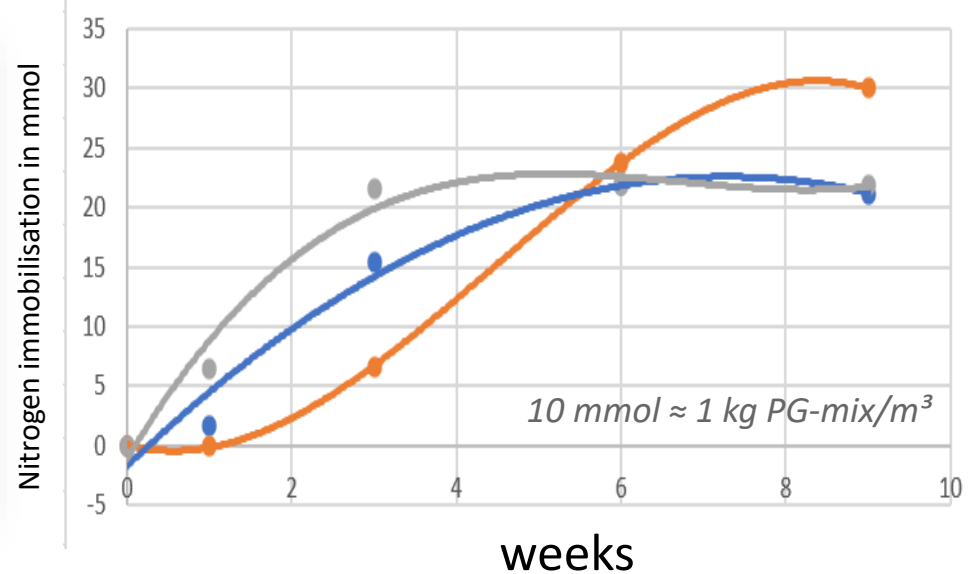
- ✓ Developing *knowledge* on how to grow on a new growing media – regular adjustments necessary
- ✓ To facilitate this (new) tools are developed to measure
 - ✓ Nitrogen immobilization
 - ✓ pH buffer
 - ✓ Water uptake
 - ✓ Respiration
 - ✓ Potting behaviour
 - ✓ 1:5 HCl method
 - ✓



Wood fibre is not wood fibre – *Quality*



N immobilisation of 3 types of wood fibre



Adjust your fertilization!



Nitrogen deficiency

Insufficient information concerning the Nitrogen fertilisation to the Platycodon grower



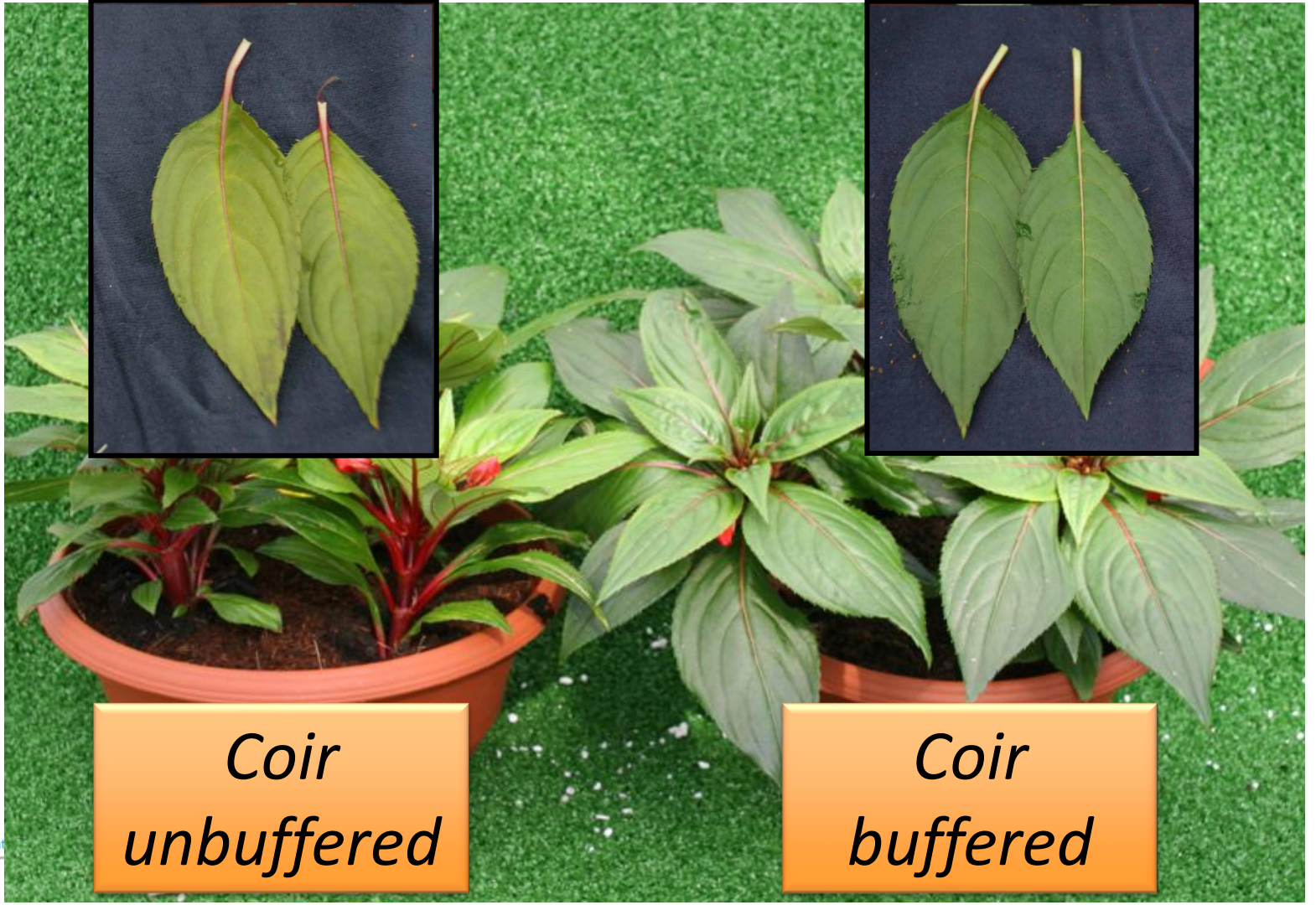


Coir needs attention

- ✓ Coir is a valuable raw material for growing media
- ✓ It has to be weed free !!
- ✓ Because it has an adsorption complex that adsorbs calcium, buffering is desirable for many crops
- ✓ It has to be physically stable (aged)

All RHP certified coir is buffered, checked for tropical weeds and stability



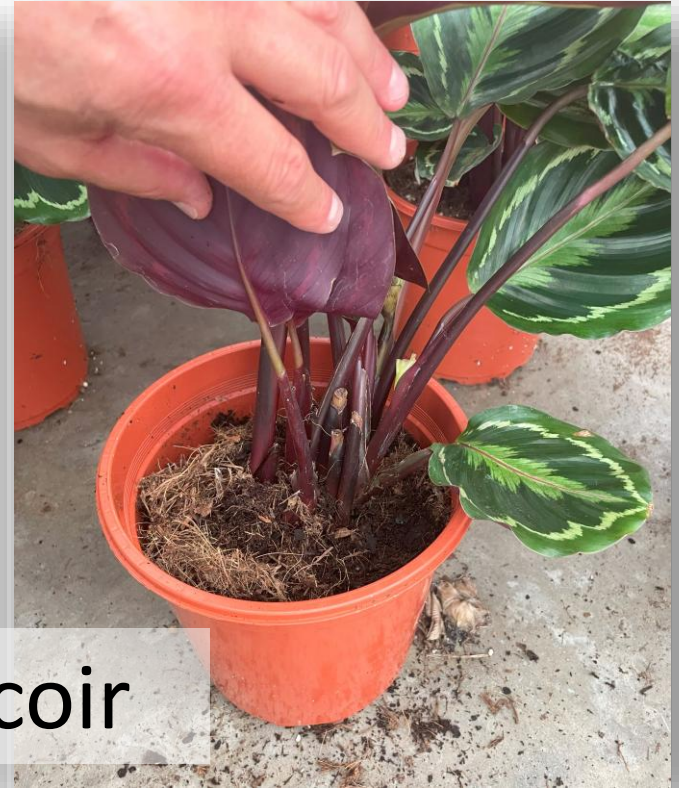


*Coir
unbuffered*

*Coir
buffered*



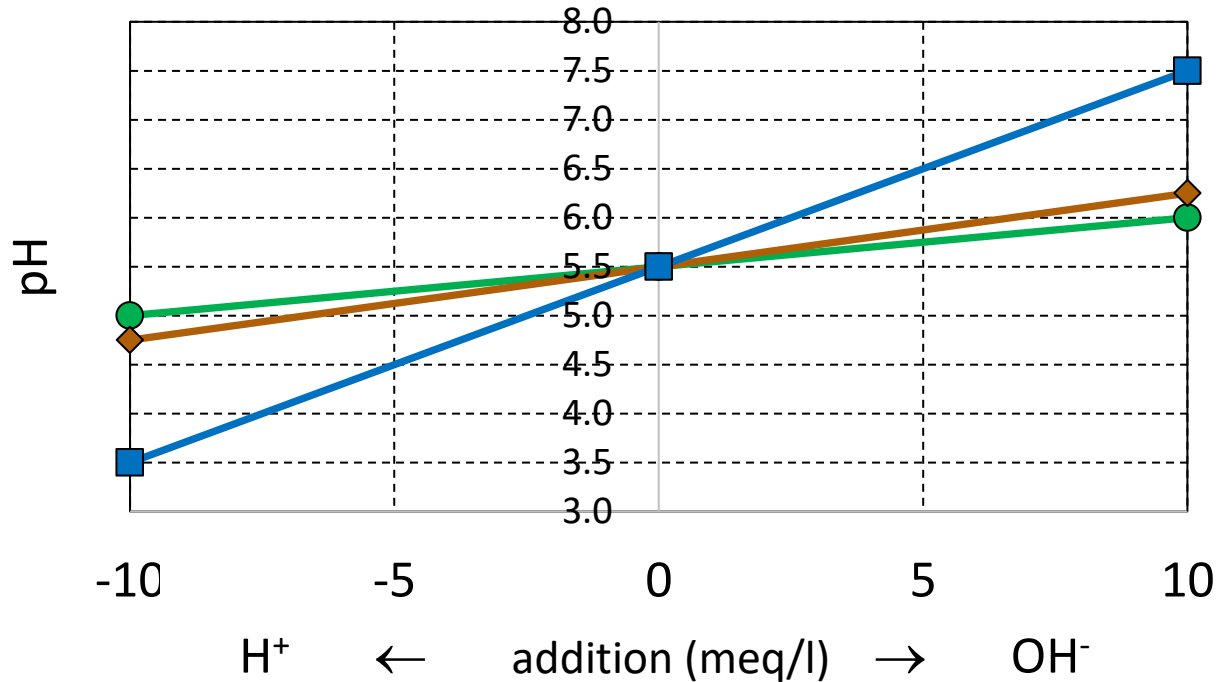
Stability of coir



Young coir



pH-buffer can vary seriously – *Quality*



- 100% peat
- ◆ 50% peat
25% coir
25% wood fibre
- 75% coir
25% wood fibre

*pH buffer new mixtures becomes (significantly) smaller.
This requires more precise fertilization by the grower.*



Influence of the physical aspects

- ✓ Physical aspects of potting soil play the most important role during the marketing phase
- ✓ Many renewable raw materials retain less water than coir and peat
- ✓ The risks of dehydration increase especially with:
 - ✓ Warm weather
 - ✓ Shops (supermarkets/hardware stores) where no watering is provided





Are there any solutions yet?

- ✓ Watering plants well for transport
- ✓ Use more clay products (is mineral and heavy)
- ✓ Adding (synthetic) polymers?
- ✓ Larger pots
- ✓

More research into shelf life on future potting soils is desirable





Consequences for the grower

- ✓ A sustainable substrate should not lead to more environmental impact for the grower
 - ✓ More (pest) control, because the substrate attracts more saprotrophic fungus or insects
 - ✓ (Much) more fertilizer
 - ✓ More water (in case there is no recirculation)
 - ✓ More energy
 - ✓





RHP Factsheets



- ✓ Factsheets have been launched to provide information about a variety of topics
- ✓ Publicly available via the RHP website
- ✓ Topics:
 - ✓ Saprotrophic fungi
 - ✓ Heavy metals
 - ✓ Do's and don'ts of DNA analyses
 - ✓ Fungus gnats
 - ✓



Summarized

- ✓ New renewable materials cannot simply be implemented. Risks have to be avoided, with special attention to plant diseases
- ✓ New renewable materials have to be characterized properly
- ✓ Not all existing tools are sufficient, new tools are necessary



What should you do ?

When your growing media changes:

- ✓ Be well informed (analyses / advice...)
- ✓ Don't make too big steps when switching
- ✓ Be careful with (uncertified) raw materials
- ✓ Perform good tests
- ✓ Be extra careful with sensitive crops – cuttings - seedlings





Thank you !!!

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