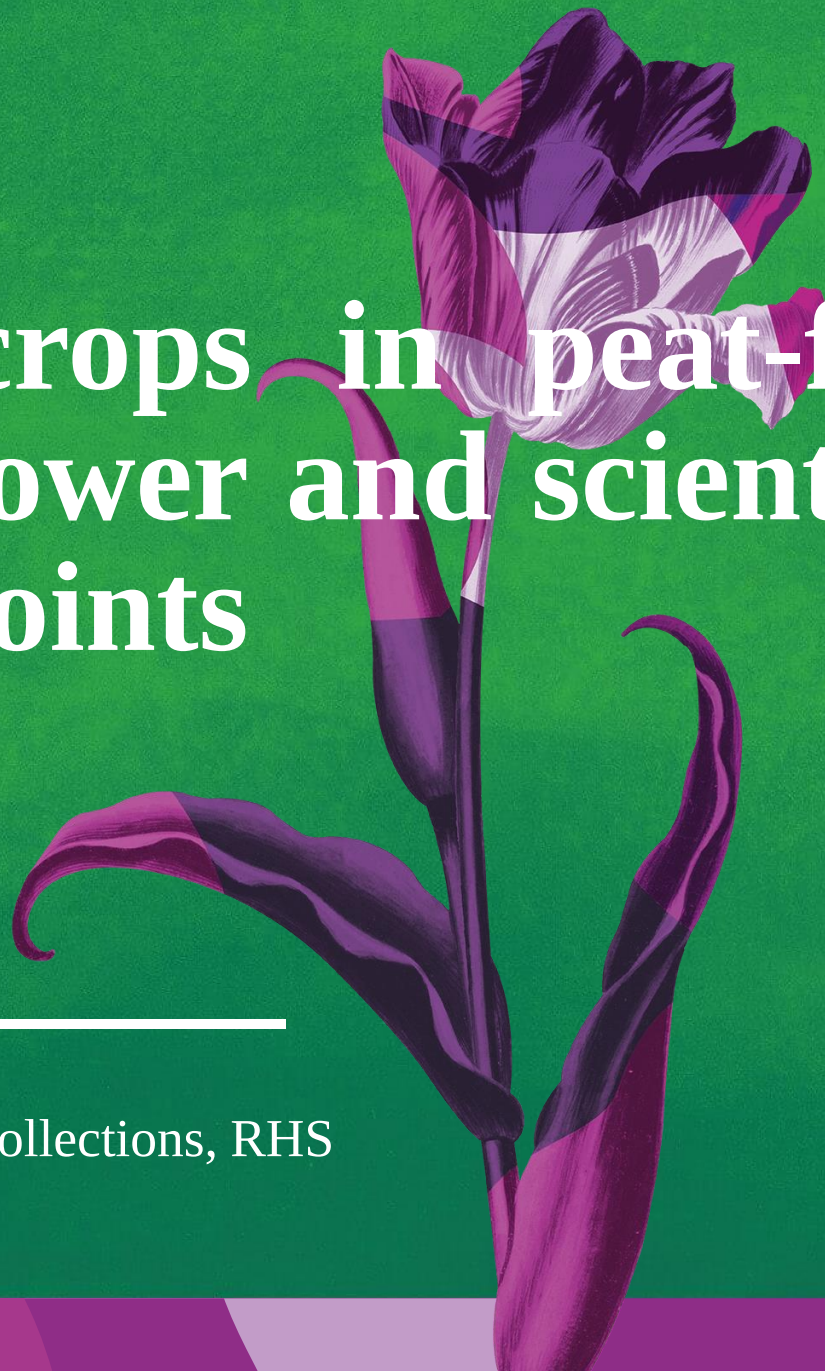
Establishment of crops in peat-free growing media – grower and scientific viewpoints

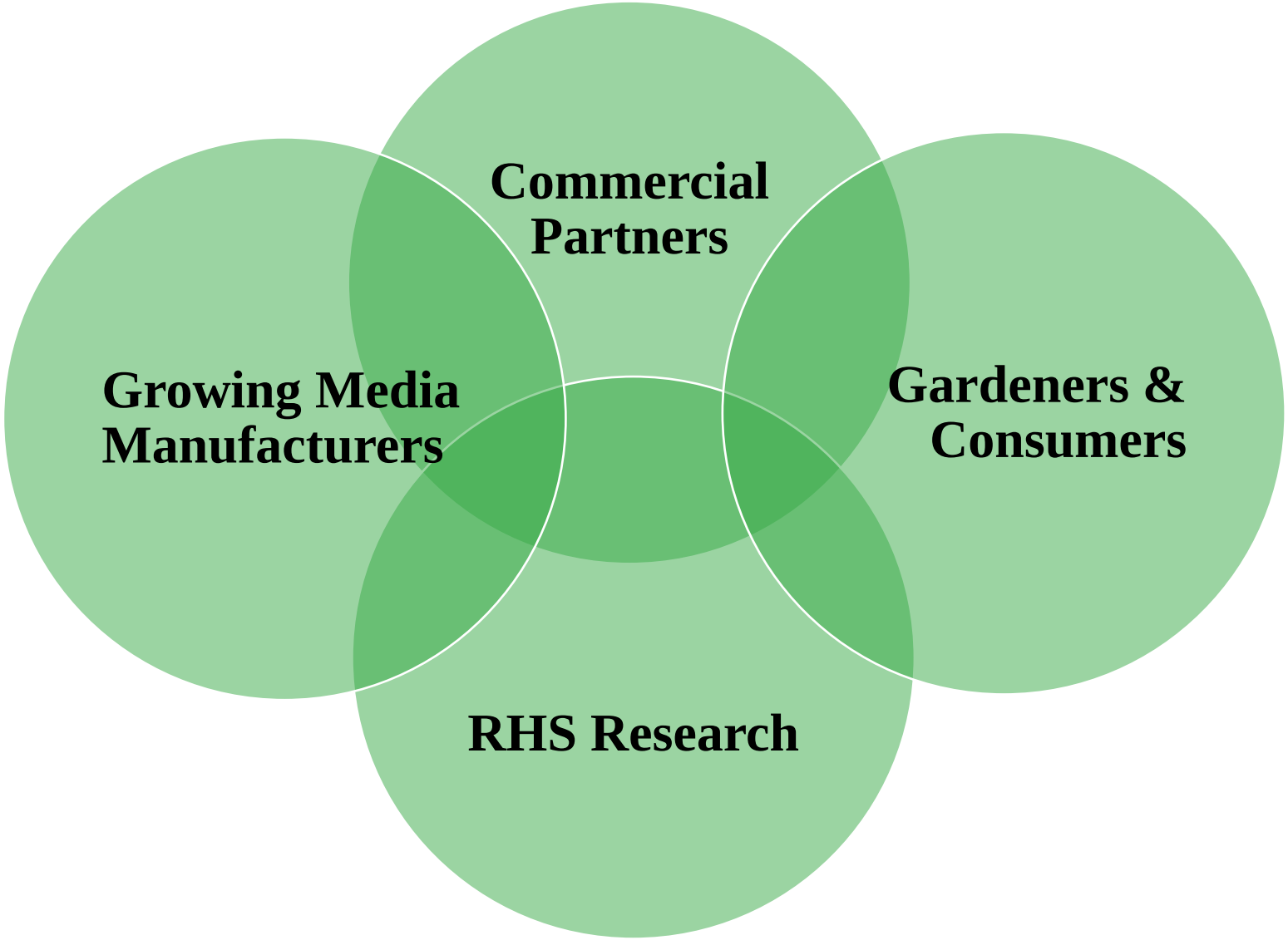


Dr. Raghavendra Prasad

Post Doc Fellow: Transition to Peat-Free Fellowship
Environmental Horticulture, Division of Science and Collections, RHS
raghavendraprasad@rhs.org.uk
+44 7955439897

Project Partners and Collaborators

Department for Environment Food & Rural Affairs



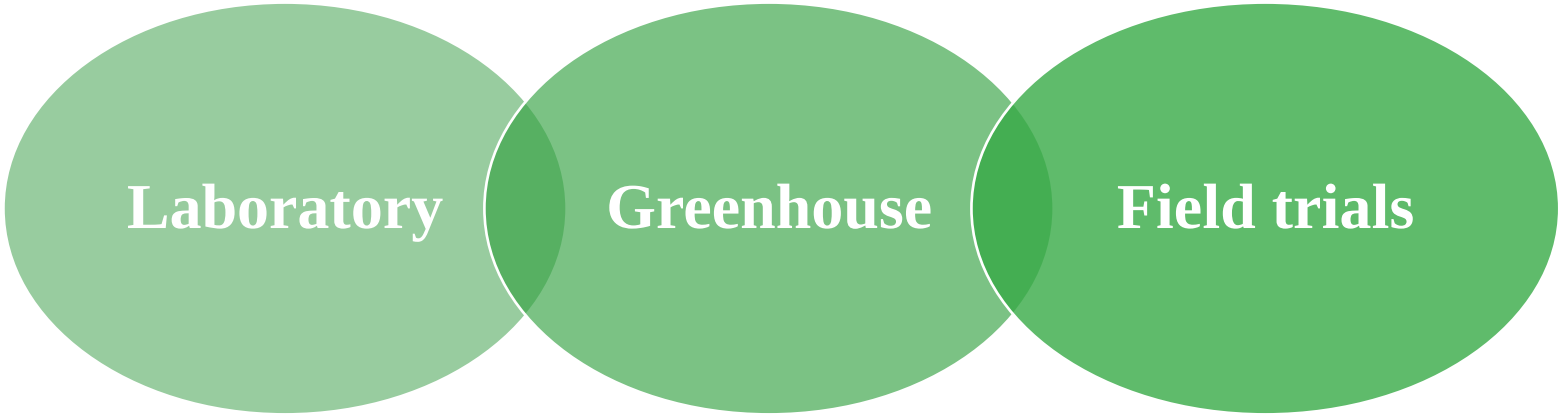
GROWING MEDIA association

Allensmore Nurseries Ltd.
Hillier Nurseries
hills
Johnsons Nurseries
Lovania Nurseries Ltd
the farplants group
Vitacress
Volmary

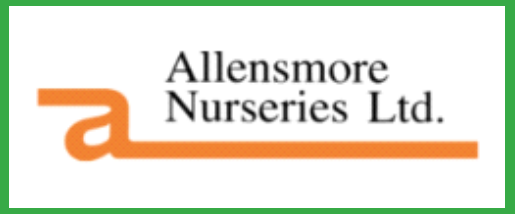
Research Trials

To meet the practical requirements of the production system in which peat-free substrates are being utilized

RHS and Commercial partners



Fellowship Progress

			
Peat Free Growing Herbaceous Perennials	**Peat Free House Plant Propagation and Growing**	**Peat Free Ericaceous Trials**	**Peat Free Growing** Shrubs
			
Peat Free Growing Alpines and Bedding	**Peat Free Propagation**	**Peat Free production of culinary herbs**	**Peat Free Propagation**

Growing Media Quality Control

In-house QC control:

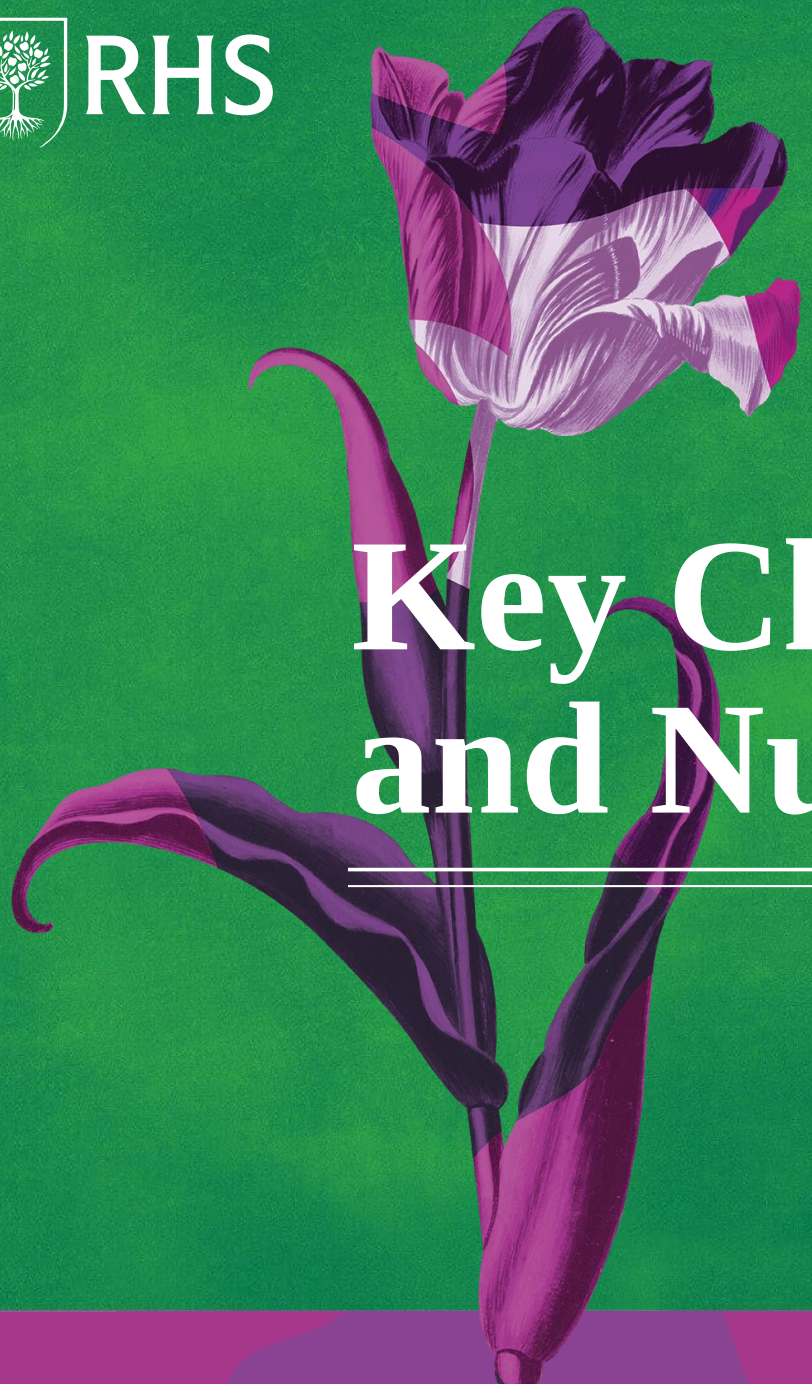
- Sampling the material
- Archiving some sample for reference
- Interpret key aspects from analysis

Key focus on better understanding:

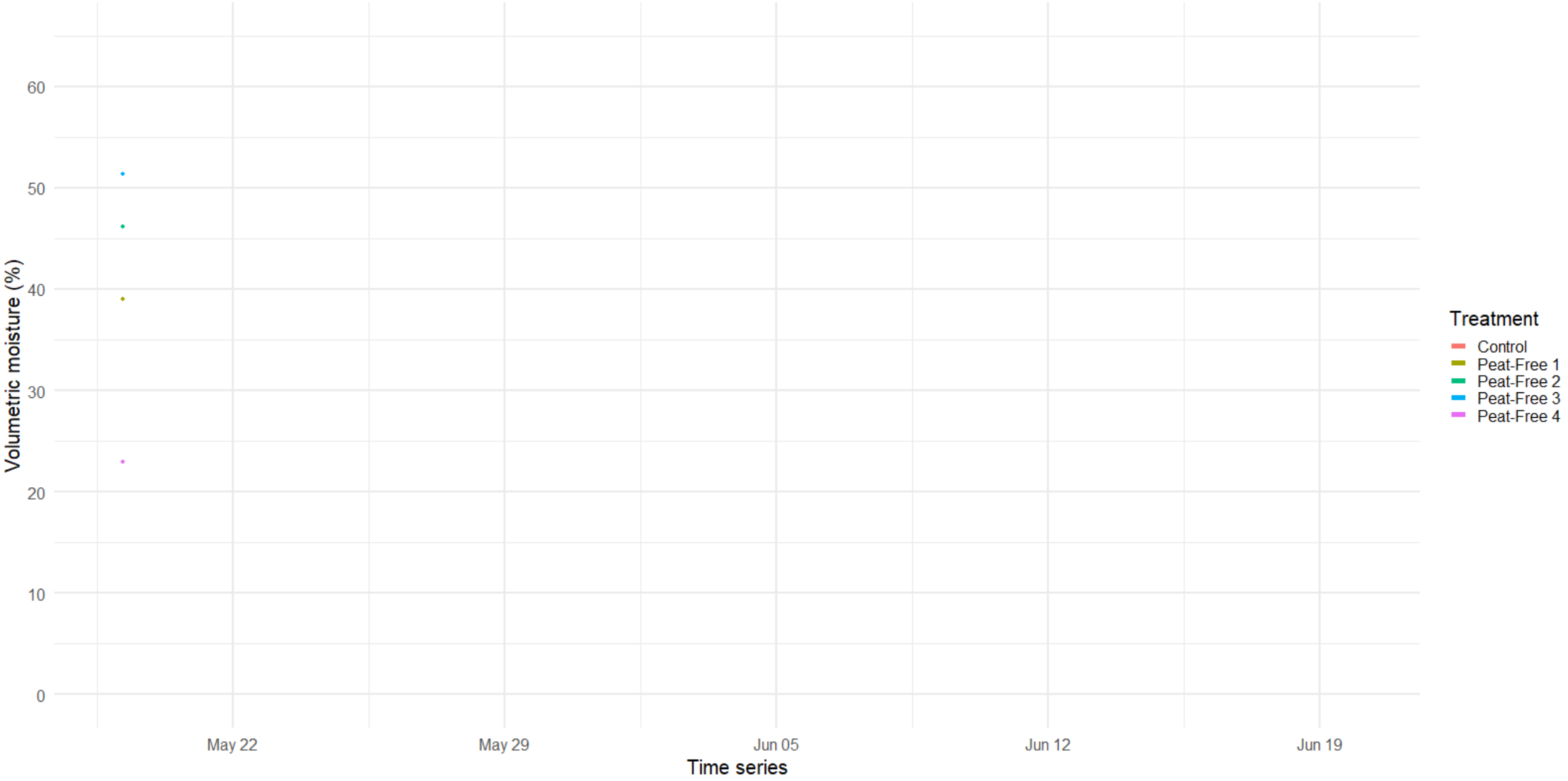
- Irrigation management
- Maturity/stability of the growing media
- Nutritional dynamics of growing media

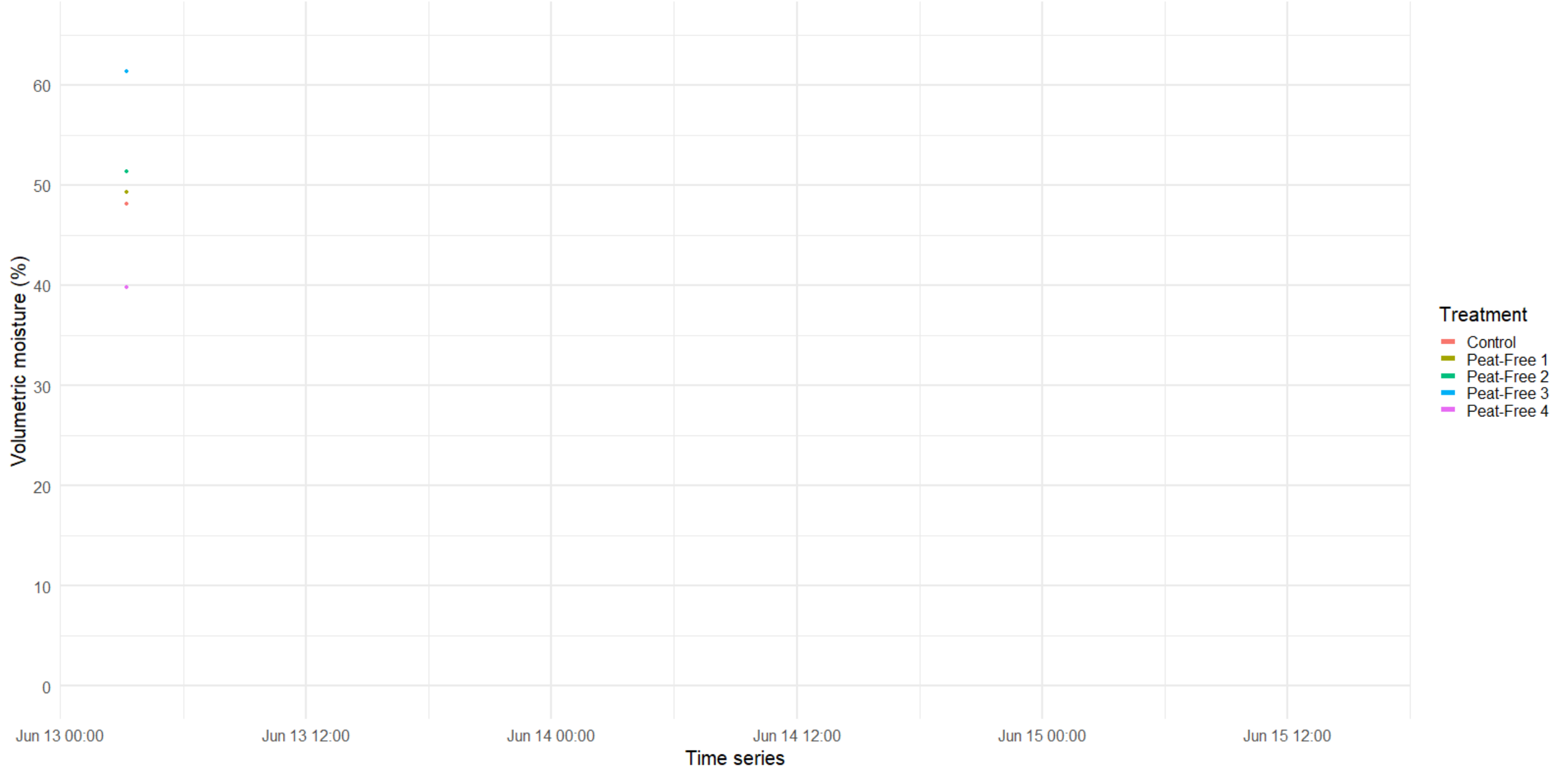
ANALYTICAL RESULTS *on 'as received' basis.*

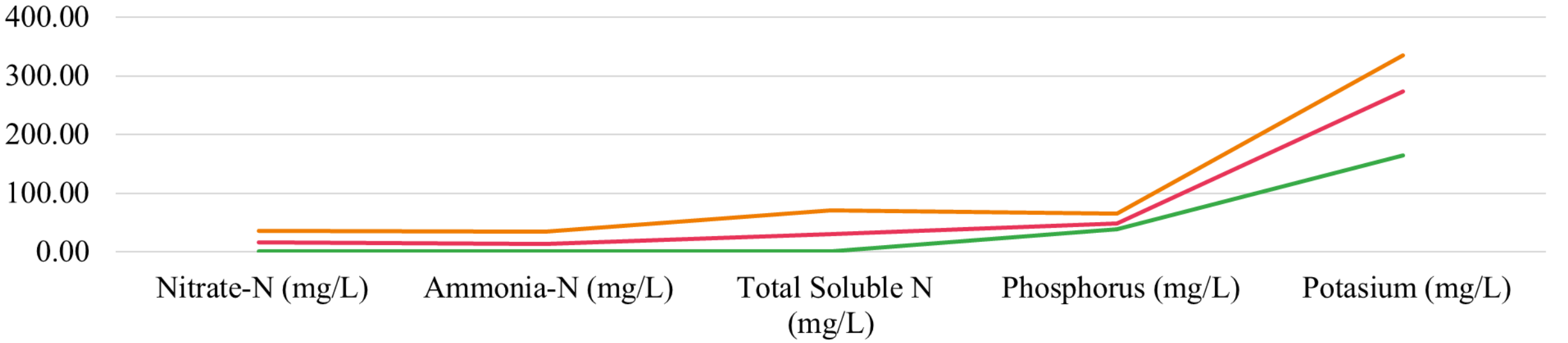
Determinand	Value	Units	Determinand	Value	Units
pH	5.3		Cond. at 20 C	129	uS/cm
Density	512	kg/m3	Ammonia-N	16.0	mg/l
Dry Matter	22.7	%	Nitrate-N	36.6	mg/l
Dry Density	116.2	kg/m3	Total Soluble N	52.6	mg/l
Chloride	8.6	mg/l	Sulphate	101.1	mg/l
Phosphorus	17.0	mg/l	Boron	0.19	mg/l
Potassium	54.9	mg/l	Copper	0.05	mg/l
Magnesium	13.9	mg/l	Manganese	0.12	mg/l
Calcium	20.3	mg/l	Zinc	0.15	mg/l
Sodium	5.2	mg/l	Iron	2.77	mg/l

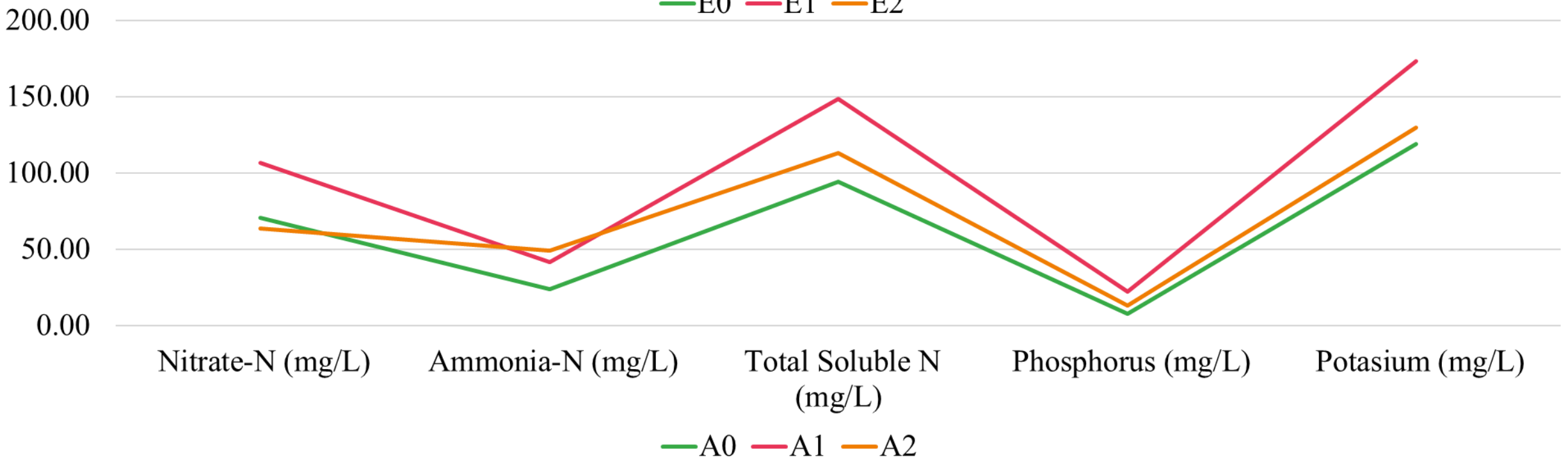


Key Challenges: Irrigation and Nutrition


Volumetric moisture (%)
60
50
40
30
20
10
0
May 22
May 29
Jun 05
Jun 12
Jun 19
Time series
Treatment
Control
Peat-Free 1
Peat-Free 2
Peat-Free 3
Peat-Free 4


Volumetric moisture (%)
60
50
40
30
20
10
0
Jun 13 00:00
Jun 13 12:00
Jun 14 00:00
Jun 14 12:00
Jun 15 00:00
Jun 15 12:00
Time series
Treatment
Control
Peat-Free 1
Peat-Free 2
Peat-Free 3
Peat-Free 4


400.00
300.00
200.00
100.00
0.00
Nitrate-N (mg/L)
Ammonia-N (mg/L)
Total Soluble N (mg/L)
Phosphorus (mg/L)
Potasium (mg/L)
E0
E1
E2


200.00
150.00
100.00
50.00
0.00
Nitrate-N (mg/L)
Ammonia-N (mg/L)
Total Soluble N (mg/L)
Phosphorus (mg/L)
Potasium (mg/L)
A0
A1
A2

Early Establishment in Peat-Free Media

Questions need to be asked:

- Quality of young plants
- Growing media used in propagation (peat-based, peat-reduced or peat-free) and growing

Physical properties of mixes vary

- AFP, WHC etc. which might have knock-on effect during early stages of establishment

Two scenarios:

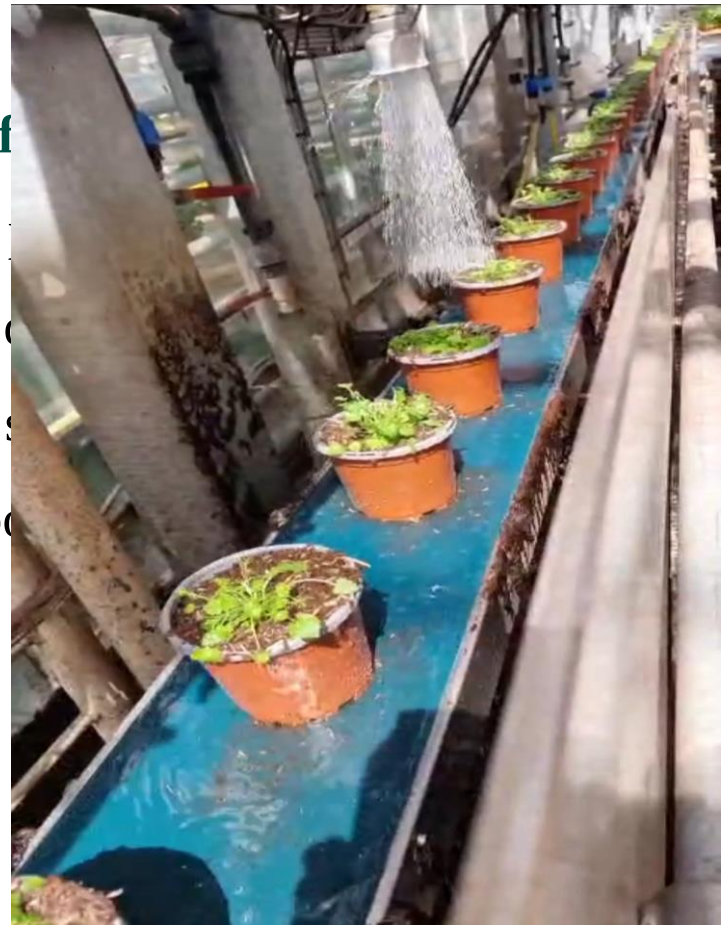
Dry plug potted in to wet/moist potting mix

Wet plug potted into a dry potting mix

Early Establishment in Peat-Free Media

Key factors influencing the perf

- Varying physical attributes of
- Uneven moisture distribution
- Spikes of pH and EC in early
- Higher levels of nutrients in p



Technical interventions:

- Treating incoming materials – irrigation
- Extra care on the first event of irrigation
- Monitoring growing media using hand-held sensors/equipment

Acknowledgements

RHS

Allensmore Nurseries Ltd.

hills

Hillier

GROWING MEDIA association

the farplants group

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Lovania NURSERIES LTD

Department for Environment Food & Rural Affairs

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Thank you

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Post Doc Fellow: Transition to Peat-Free Fellowship

raghavendraprasad@rhs.org.uk

+44 7392 747046