PlantNetwork

Connecting gardens, sharing skills

Annual Conference 2018

18th & 19th April

Royal Botanic Garden Kew

@plantnetwork

Wednesday 18th April 2018		
10.00 – 10.45	Registration with coffee	
10.45	Welcome	Richard Barley Director of Horticulture, Learning and Operations at Royal Botanic Gardens, Kew & Simon Toomer Chair of PlantNetwork
11.00	Maximising soil health	Simon Parfey, Soilbiolabs.
11.30	Back to basics – product selection	Neil Williams, Petersfield. Growing Mediums
12.00	Soil types, issues and management options in horticulture	Andy Spetch National TOPSOIL Manager British Sugar plc
12.30	Engineered soils at the Eden Project.	Dr. Rachel Warmington, Plant Pathologist, The Eden Project
13.00	QUESTIONS and DISCUSSION	
13.30	LUNCH	
14.20	Water sustainability – moving beyond guesswork.	Richard Barley. Director of Horticulture, Learning & Operations Royal Botanic Garden Kew
14.50	Water hygiene	Katherine Hayden Royal Botanic Garden Edinburgh.
15.20	Water & urban greening	Gary Grant, The Green Infrastructure Consultancy
15.50	QUESTIONS and DISCUSSION	
16.00 17.00	Garden tour/demos	Sara Redstone. Plant Health & Quarantine Officer, Royal Botanic Gardens Kew
19.00	Conference dinner. The Greyhound. 82 Kew Green	

Thursday 19th April 2018		
9.30	Welcome	Simon Toomer, PlantNetwork Chair
9.40	Plant-parasitic Nematodes - An Introduction to their Hidden Life	Dr Sue Hockland Independent Plant Nematology Consultant
10.10	Tree monitoring and treatment	Kevin Martin, Manager of Arboriculture at Royal Botanic Gardens, Kew
10.40	Acute Oak Decline a Complex Disease of Native Oak Trees in the UK Investigating Investigating predisposition Factors in Acute Oak Decline	Sandra Denman Forest Research & Dr. Elena Vanguelova Senior Biogeochemist / Soil Sustainability Research Leader Forest Research
11.20	QUESTIONS and DISCUSSION	
11.50	COFFEE	
12.10	Group 1 – Kevin Martin - Technology for tree health Group 2 – Sandra Denman – Acute Oak decline and tree diseases	
13.15	LUNCH	
14.00 –	PlantNetwork AGM Simon Toomer PlantNetwork Chair	
14.40	Group 1 – Sandra Denman – Acute Oak decline and tree diseases Group 2 – Kevin Martin - Technology for tree health	
15.45 – 16.00	Back to lecture room, collect bags, conference close	

All presentations from our training and conferences are shared through our website. www.plantnetwork.org. Our website search facility also allows you to find previous newsletter articles, presentations and downloads.

Speaker Biographies

Richard Barley Director of Horticulture, Learning and Operations, Royal Botanic Gardens, Kew

Richard Barley was born in the Western District of Victoria, in Australia. After various roles in the agriculture sector, he joined the Royal Botanic Gardens Melbourne in 1980. He completed a Bachelor of Applied Science (Horticulture) at Burnley College (University of Melbourne) and then took on responsibility for the provision of guidance to the state of Victoria's many regional botanic gardens. From 1992 he moved into the role of manager and then director of the RBG's Melbourne garden site. He held this position until 2010, when he was appointed as CEO of Open Gardens Australia.

Richard was appointed to the new position of Director of Horticulture for Kew Gardens in 2013. He has responsibility for Kew's botanic garden and arboretum, display glasshouses, nurseries and the School of Horticulture. His role was expanded in 2015 to include Kew's Learning and Operations activities.

Simon Toomer PlantNetwork Chair and National Specialist for Plant Conservation with the National Trust

Originally trained in environmental biology and forestry, Simon Toomer has worked as a practical forester, land management advisor and arboriculturalist in both private and local authority sectors. In his current role with the National Trust, he is a national consultant for all areas of garden and parkland plant conservation including plant health and biosecurity, collections management and plant records.

His particular interests lie in the areas of conservation and management of native habitats and the use of ornamental trees and plants in garden landscapes. He previously worked for 15 years as Curator and Director at Westonbirt, The National Arboretum where he was responsible for overseeing the management and development of one of the finest tree collections in the World. Simon has travelled in many parts of Europe, North America, Asia and Africa in pursuit of trees and is the author of 'Trees for the Small Garden' (Timber Press, 2005). In 2009 he completed a second book on the establishment and maintenance of tree collections and arboreta. He is a professional member of the Arboricultural Association and a trustee of the charity Tree Aid. In July 2015 he became Chair of PlantNetwork.

Simon Parfey Owner SoilBioLab and Soil Hub International

Simon's passion for helping people grow better plants and crops was born through extensive experience gained from working within a demanding commercial horticulture sector - supplying cut flowers to Retail Multiples in the UK. Simon decided to take an interest in soils a step further and move in to a role that enabled him to manage biological innovations and product design at a unique laboratory and large-scale compost site on one of the UK's leading Organic and Bio-dynamic farms.

Simon established SoilBioLab and Soil Hub International 5 years ago to use specialist scientific techniques to help growers understand and manage their soil and growing media better and provide high quality advice and solutions. This has led to involvement in high level projects and research, partnering with organisations such as the Soil Association on field-based trials on large arable crops and the British Institute of Golf and Greenkeepers Association (BIGGA) with annual microscope training workshops.

Simon also works for the UK's leading arboricultural consultancy Treework Environmental Practice.

Blog: http://soilhub.international/blog/

Twitter: https://twitter.com/peat_free

Neil Williams Petersfield Growing Mediums

Neil has worked for Petersfield for 27 years and is responsible for Sales, Marketing, Technical Support and Product Development as well as Raw Material / Ingredient selection and procurement. Since joining Petersfield, Neil has worked with many of the most prestigious Organisations, Plant Collections, Research Stations, Landscape Architects and Contractors, Growers and Retailers. This has led to a very interesting, diverse and valuable set of learning experiences.

Having worked continuously on the development of peat free composts since January 1991, Neil has unrivalled experience of this subject.

www.petersfieldgrowing.co.uk

Andy Spetch National TOPSOIL Manager British Sugar

Andy joined British Sugar in 1987 and has been National TOPSOIL Manager since 1999. Initially joining as an Agricultural trainee Andy has worked as an agronomist for the company in England and Poland. Andy holds the BASIS, FACTS and NEBOSH qualifications. In 1997 Andy took over the management of British Sugar's TOPSOIL business. This role involves managing the production, marketing and sales of the topsoil received with the beets.

www.bstopsoil.co.uk

Dr. Rachel Warmington Plant Pathologist, The Eden Project,

I work at the Eden Project, a botanic garden, educational charity and tourist destination, where I am responsible for detection and control of plant diseases, as well as keeping an eye on the health of our soil. Before pursuing horticulture as a career I worked as a tax adviser for eight years. I completed my horticulture degree at Pershore College,

whilst working part time work as a gardener, becoming a full time Head Gardener after I graduated. Two years later I started a PhD at Warwick University, working on a fungal pathogen which affects over 400 plant species. I was awarded the Marsh Horticultural Science Award in 2013 and when I finished my PhD in 2014 I started in my current role as the plant pathologist at the Eden Project.

Dr Katherine Hayden Mycologist & Quarantine Officer. Royal Botanic Garden Edinburgh.

Katy Hayden is a Mycologist and the Quarantine Officer at the Royal Botanic Garden Edinburgh, where she researches biosecurity and the evolutionary ecology of plant-pathogen interactions. She previously completed a postdoctoral fellowship at the French National Agronomic Research Agency, and a PhD in Environmental Science, Policy, and Management at UC Berkeley.

Gary Grant CEnv FCIEEM The Green Infrastructure Company and Director of the Green Infrastructure Consultancy

Chartered Environmentalist and Fellow of the Chartered Institute of Ecology and Environmental Management. Formerly a Director at AECOM Design + Planning, he is now Director of the Green Infrastructure Consultancy and thesis tutor at Bartlett Faculty of Built Environment, UCL. Has worked as ecologist on many planning and design projects, including the Whitehill-Bordon Eco Town; Rubens Hotel living wall; Lendlease HQ Roof Garden; Education City, Qatar; Saadiyat Island Abu Dhabi Masterplan; Deep Bay Link, Hong Kong; Zavidovo Resort, Russia; London 2012 Olympic bid, Olympic Park Biodiversity Action Plan and Olympic Park Management Plan. Author of The Water Sensitive City (Wiley 2016), Ecosystem Services Come to Town: Greening Cities by Working with Nature (Blackwell-Wiley 2012) and Green Roofs and Facades (BRE Press 2006) and was a contributor to Climate Design: Design and Planning for the Age of Climate Change (ORO Editions 2010) and Nature Based Strategies for Urban and Building Sustainability (Elsevier 2018)

https://greeninfrastructureconsultancy.com/

Sara Redstone BSc (Hons) Plant Science; MSc Plant Biotechnology, Kew Diploma(Hons), Plant Health & Quarantine Officer, Royal Botanic Gardens Kew

Sara's role at Kew includes leading a small team responsible for managing the Quarantine Unit and science glasshouses, dealing with incoming and outgoing plant material. The Unit is one of a number of single points of entry used at Kew to ensure incoming material complies with relevant legislation, including plant health, CITES and the CBD. She provides technical support and assistance to staff, helping them maintain and improve the health of the Living Collections at Kew and Wakehurst. Sara works with curatorial staff to develop appropriate policy and procedures and to manage biosecurity risks associated with Kew's activities. A key aspect of her role involves developing and delivering teaching and training to staff, students and external groups about invasive alien species, biosecurity, plant health, quarantine, the CBD and CITES.

Dr Sue Hockland

Sue has over 36 years' experience in plant nematology as a consultant, trainer and researcher, working now as an independent plant nematology consultant. She collaborates with national and international reference laboratories to provide a complete advisory and research service.

Plant-parasitic nematodes are often overlooked as a cause of poor quality, and consequently they can be unknowingly spread in trade, both locally and internationally. Her mission is to transfer plant nematology science into practical situations, working extensively both in horticultural and scientific centres of expertise and in the field to help improve plant quality and reduce economic losses. She has experience of working in the UK, Europe, Latin America and Australia, dealing with the identification, detection and control of plant-parasitic nematodes. Sue has also dealt with problems in plant health quarantine, both at a local level in glasshouses and laboratories and at an international level producing protocols for quality accreditation.

Kevin Martin Manager of Arboriculture at Royal Botanic Gardens, Kew

Kevin is responsible for managing the tree collection at Kew, tree risk management, management of veteran trees, and dealing with high target areas of foot fall. Kevin has 12 years' experience as a climbing arborist prior to becoming Manager of Arboriculture.

Sandra Denman. Senior Pathologist, Forest Research

Sandra studied Plant Pathology at the University of Stellenbosch, in South Africa where she obtained her PhD on Botryosphaeria canker disease of Proteaceae. She is a senior pathologist at Forest Research, Alice Holt, Surrey in the UK. She has extensive experience in soilborne and stem canker diseases of native woody plants. Over the past ten years her research has been dedicated to diseases of native oak trees, with a particular focus on Acute Oak Decline. She uses holistic, multidisciplinary research approaches to address health issues on oak trees in the UK.
Details of her work can be found on: https://www.forestry.gov.uk/fr/infd-84rb3w; https://www.forestry.gov.uk/fr/INFD-7UL9NQ

Dr Elena Vanguelova Senior Biogeochemist / Soil Sustainability Research Leader, Forest Research

Elena joined Forest Research in June 2003 as a biogeochemist. She studied for a BSc / MSc degree in Forest Engineering at The University of Forestry in Sofia, Bulgaria. Then she moved to the UK, where she obtained a PhD in forest soils from Soil Science Department, Reading University. Her current role as project manager involves conducting research to ensure that forest practices do not compromise soil sustainability, and investigating the effects of pollutant deposition and climate change on soil functions in order to support sustainable forest development. This work includes afforestation impact on soil carbon and nutrient status; soil health and functions; and linkages between different tree species and soil processes, functions and biodiversity.

More details can be found on her
webpage: https://www.forestry.gov.uk/fr/infd-64gb8s

Resources

British Sugar TOPSOIL

British Sugar TOPSOIL is the largest UK manufacturer and supplier of environmentally sustainable topsoil and topdressing products to the landscaping, construction and sports turf/amenity sectors, supplying over 250,000 tonnes annually.

TOPSOIL products are derived from the prime arable soils that adhere to the sugar beet delivered to British Sugar factories. Until, some twenty years ago, this soil was not recognised as a valuable resource, it was washed from the beet and disposed of. Since 1997 however, thanks to extensive research and development and the contribution of expertise by soil, landscape and horticulture professionals, TOPSOIL products have been, and continue to be, specified and used widely in landmark projects such as the Queen Elizabeth Olympic Park, the Wellcome Genome Campus, Kings College, Cambridge and RHS Hyde Hall Global Growth Vegetable Garden.

British Sugar TOPSOIL believes that continual knowledge exchange with horticulture professionals is fundamental to developing topsoil products that both preserve the environment and deliver the optimum conditions for growth. Its products are manufactured from fully traceable single-source topsoil and undergo extensive scientific trials and analysis on a continual basis to ensure they are safe, consistent, reliable and effective.

The support provided by TOPSOIL's technically trained sales team gives customers complete peace of mind, knowing they have the right product for project success.

TOPSOIL products, using BS3882:2015 compliant topsoil, include HortLoam premier planting topsoil, enriched with PAS 100 compost, for planting semi-mature trees, shrubs, perennials and vegetables; Sports & Turf topdressing for the construction of tees and for treating golf course approaches, tees, and ornamental lawns; and award-winning Landscape20 general purpose topsoil for seeding, turfing and for general landscaping works.

www.bstopsoil.co.uk

British sugar TOPSOIL are PlantNetwork Silver sponsors 2018

Green Infrastructure

Green Infrastructure or blue-green infrastructure is a network providing the “ingredients” for solving urban and climatic challenges by building with nature. The main components of this approach include storm water management, climate adaptation, less heat stress, more biodiversity, food production, better air quality, sustainable energy production, clean water and healthy soils, as well as the more anthropocentric functions such as increased quality of life through recreation and providing shade and shelter in and around towns and cities. Green infrastructure also serves to provide an ecological framework for social, economic and environmental health of the surroundings.

The provision of green infrastructure in and around urban areas is now widely recognised as contributing towards creating places where people want to live and work. The concept of green infrastructure is embodied in the Government’s Planning Policy Statements (PPS) 1 and 12. It is an essential component of good planning for urban and rural areas, particularly in the face of climate change.

However, increased awareness of the importance of green infrastructure does not always go hand in hand with a full

understanding of what it is, the range of benefits it can deliver and how it can be promoted and delivered through existing policies and process.

A number of organisations support and contribute to guidance on green infrastructure. A useful resource: Searchable GI database or downloadable pdf: https://www.tcpa.org.uk/green-infrastructure-research-database

Safeguarding our soils: A strategy for England

By 2030, all England's soils will be managed sustainably and degradation threats tackled successfully

Soil is a fundamental and essentially non-renewable natural resource, providing the essential link between the components that make up our environment. Soils vary hugely from region to region and even from field to field. They all perform a number of valuable functions or ecosystem services for society including:

- nutrient cycling
- water regulation
- carbon storage
- support for biodiversity and wildlife
- providing a platform for food and fibre production and infrastructure

Soils in England continue to be degraded by human actions including intensive agriculture, historic levels of industrial pollution and urban development. This makes them vulnerable to erosion (by wind and water), compaction and loss of organic matter. As the climate (including temperature and rainfall patterns) changes in the future, it is likely soils have the potential to be further degraded. This will happen both as a result of the direct and indirect impacts of climate change, for example as land managers adapt their practices and the crops they grow.

Current policies focus on protecting English soils and the important ecosystem services they provide. Research is focused on addressing evidence gaps to adapt and refine these policies in order to strengthen protection and their resilience as the climate changes. A Soil Strategy for England was published by the previous government in September 2009, but sets out the current policy context on soils and a number of core objectives for policy and research.

http://defraweb/environment/land/soil/index.htm

APRIL 2017

White Paper

Assessing the effect of brewing time and added microbial foods on the quality of aerated compost tea.

Andrea Araujo, Jennifer Ings and Simon Parfey.
SoilBioLab, 213 The Commercial Centre, Picket Piece, Andover, SP11 6RU. UK info@soilbiolab.co.uk

Abstract
Compost tea (CT) is a water based microbiological inoculant containing high levels of bacteria and fungi produced from compost. This is applied to crops improve soil and plant health and increase plant growth. This investigation aimed to identify the optimum conditions to produce a CT containing the highest levels of active microbial biomass. By varying the components of the CT mix and length of time that it was brewed, an ideal mix of compost, molasses and humic acid with a brew time of 24 hours was identified as providing the highest overall active and total microbial biomass.

1. Introduction

Compost tea (CT) is a water based microbial inoculant (MI) ideally containing high populations of beneficial bacteria and fungi. It is produced by a method of 'brewing' in which compost is steeped in water for a defined period. The resulting 'tea' is popular with growers due to its benefits on soil fertility and disease suppression. It is thought that once the 'brewing' process is finished and the resulting compost tea is applied to the plants and soil it will add microorganisms to soil.

Whilst soil and compost based plant sprays have been used since the 1920's, more modern research began in this area in the 1980's. Results from scientific trials are still scarce with the limited results and experiences suggesting that plant diseases have been suppressed in some cases by treating with CT whilst in other instances no effect was observed on disease suppression or CT appeared to increase disease severity.

The full report is available on the PlantNetwork website

SoilBioLab Facebook: www.facebook.com/Soilbiolab

Soil Hub on Facebook: www.facebook.com/SoilHubInternational/

RHS Soil management research projects

The RHS Plant Soil Interaction team are involved in a number of projects:

•An experimental assessment of the long-term effects of applying different forms of organic matter on soil quality.

•Assessing the performance of composted green waste as a substrate for green roofs (WRAP contract).

•Effect of turning and vessel type on compost temperature

•An assessment of the suitability of home-produced green compost as a potting soil

•Improving gardeners' understanding of water management in peat and peat-free multi-purpose growing media

•An experimental assessment of the lime tolerance of several rhododendron cultivars.

https://www.rhs.org.uk/science/gardening-in-a-changing-world/soil-management-in-gardens/rhs-projects-on-soil

AHDB Horticulture

Formerly Horticultural Development Company (HDC), was established in 1986 with a remit to fund research and development and communicate results to growers

In general, mains and borehole-derived water are safe to use so long as they are stored properly and the irrigation system is kept clean, whilst surface-derived waters (ponds, ditches, reservoirs, rivers and runoff) carry moderate to very high disease risks. Treatment of surface-derived water to control plant (and potentially human) pathogens before use for irrigation is therefore highly desirable/recommended. Pasteurisation, ozonation, hydrogen peroxide, UV, slow sand filtration, chlorination and the use of chlorine dioxide (distinct from the use of chlorine as it does not form hypochlorous acid in water) are all established methods of water treatment (use of any chlorine product must consider the risk of chlorate and perchlorate residues in plant tissue, details can be found in AHDB Horticulture project

CP 154a 'Chlorine and its oxides - chlorate and perchlorate review') CP 064 - HDC: Development of a water strategy for horticulture project Leader J.W.Knox 2009

https://horticulture.ahdb.org.uk

Biosecurity

Plant health and biosceurity information on PlantNetwork website

https://plantnetwork.org/wordpress/wp-content/uploads/12568/parksbiosecuritysmall.pdf

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