

IAgrE Landwards Conference 2022

Tuesday 1st November 2022
Peterborough Suite, East of England Conference Centre,
Peterborough PE2 6XE

Engineering Sustainability in Agriculture

Conference Officers

IAgrE President	Steve Constable
Conference Convenor	Steve Constable
Conference Secretary	Sarah McLeod
Chief Executive & Secretary	Charlie Nicklin
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Conference Programme



0930	Arrival, Registration & Networking
1000	Introductory Remarks - Steve Constable, IAgrE President
1010	<p>Drilling without Tilling - Developments in Seed Drills</p> <p>George Sly – Horizon Agriculture Ltd</p> <p><i>George's presentation will provide and insight into his company's vision and the concepts being applied to their seed drill development. Their no-till approach is driving a number of innovative features and technology employed on their products. This importantly provides a host of efficiency benefits for the customer, whilst working towards a sustainable future.</i></p>
1100	Coffee Refreshment Break
1120	<p>Managing the Soil - the Science of Soil</p> <p>Paula Misiewicz – HAU</p> <p><i>Paula's presentation will provide an in depth look at the various research projects centred around soil mechanics and management, with a focus on ground compaction reduction methods, alternative tillage systems and precision agriculture methods. Paula will explain how science is providing the answers to sustainable land use and food production.</i></p>
1210	<p>Sustainable Mechanisation - a New Mechanisation on the Land</p> <p>Ole Green - AGROINTELLI</p> <p><i>This presentation will explore a new kind of agricultural mechanisation on the land, offering some great sustainability credentials. Agrointelli's Robotti product is light in its footprint to ease soil compaction, driverless in operation to reduce costs and perfect for tasks such as mechanical weeding to reduce chemical use. Robots will certainly play a part in providing a sustainable future for agriculture.</i></p>
1300-1400	Break for Lunch
1400	<p>Regenerative Farming</p> <p>Ben Taylor-Davies – RegenBen</p> <p><i>Ben's presentation offers a fascinating journey in his farming career, specifically how to farm sustainably in harmony with the environment. The audience will be taken through Ben's regenerative agriculture approach and how it is being practically applied in a commercial farming enterprise and what the future holds.</i></p>
1450	Q&A and Speaker Panel Discussion hosted by Andy Newbold, FarmSmart & Charlie Nicklin, IAgrE CEO
1530	Close and thanks - Charles Nicklin CEO IAgrE

Engineering sustainability in Agriculture



How can we use soil management techniques to feed the world?

IAgrE President 2022-24

Steve Constable MIAgrE

Steve Constable is the current President and trustee of the Institute of Agricultural Engineers. He holds qualifications in engineering from HAU and Lackham College and an MBA. Steve's working career began on a mixed hill farm with general livestock tasks and tractor driving, but he quickly moved focus to his passion of agricultural engineering. Then followed over 35 years' commercial experience within the agricultural engineering industry starting as an agricultural fitter moving on to 27 years at board level with the most recent appointment before semi-retirement, as Managing Director. He is a Member of the Institution of Agricultural Engineers and Fellow of the Chartered Management Institute.

The soil is one of the most valuable natural resources available to humans supplying 95% of global food production however over the years we have stretched its capacity further and further using every method possible to increase yields in the shortest and most economical way. With ever increasing demands for world food security, the real benefits of sustainable fertile soil structures such as nutrient capture, flood reduction and carbon capture are becoming more apparent to the general population and decision makers. Our annual conference will explore current and future developments in sustainable food production techniques, the mission to achieve net carbon zero processes and other environmental opportunities and challenges.

Welcome to the Institution of Agricultural Engineers Annual Conference 2022. This year our theme is all about the soil and the management techniques that can be adopted in order to protect and improve this vital resource. With guidance from our expert speakers, we will attempt to understand the fundamentals required for growers and producers to help ensure that the soil health is maintained and improved for the good of the planet and future generations. Focussing on new developments, and how research, education and industry are adapting and developing smart technology and farming practices to meet these challenges.

I hope that you find this conference enjoyable and informative.



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George Sly

Managing Director, Horizon Agriculture Ltd

George is the MD at Horizon Agriculture Ltd. The business Sly Agri was built on historical family ties with agricultural equipment and engineering practices. The 300 hectare Sly family farm in South Lincolnshire (UK), is at the heart of their product development process. In 2019, Sly Agri was rebranded as Horizon Agricultural Machinery Ltd, the future focus of which, would be the production of innovative agricultural machinery that would facilitate regenerative and conservation-friendly farming.



With the help of Innovate UK and investment from Local Government, they have been able to develop the manufacturing process that is integral to our business. This includes the construction of a purpose-built, semi-automatic blasting and coating facility and 4-bay assembly hall.

George's presentation will provide an insight into his company's vision and the concepts being applied to their seed drill development. Their no-till approach is driving a number of innovative features and technology being employed on their products. This importantly provides a host of efficiency benefits for the customer, whilst working towards a sustainable future.

Paula Misiewicz, Senior Lecturer

Harper Adams University



Dr Paula Misiewicz is the Senior lecturer in Soil and Water Management at Harper Adams University. Her teaching subjects include: Global Agricultural Production, Soil Use and Farm Infrastructure, Soil Management and Plant Nutrition, Soil and Water Management, Soil Tillage, Traction and Compaction, Forest Soils, Sites and Nutrition, Mathematics Applications and Statistics, Mathematical Tools and Techniques for Engineers.

Her research interests are centred around Soil and Water Management and Precision Farming. Her current research projects are focused on exploring traffic and tillage interactions using field scale experiments: Conventional tyre inflation pressure, Low tyre inflation pressure, Controlled traffic farming, deep, shallow and zero tillage systems.

She is also interested in soil mechanics, specifically in soil and tyre interactions: The Evaluation of The Soil Pressure Distribution and Carcass Stiffness Resulting from Pneumatic Agricultural Tyres.

Paula's presentation will provide an in depth look at the various research projects centred around soil mechanics and management, with a focus on ground-compaction reduction methods, alternative tillage systems and precision agriculture methods. Paula will explain how science is providing the answers to sustainable land use and food production.



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Ole Green Founder, Agrointelli

Ole Green, who comes from a family of farmers, is one of the most prominent practitioners of agri-robotics and precision farming technology in Denmark.

While most agricultural robots have a single function or require the farmer to commit to closed systems, Agrointelli combines artificial intelligence, machine vision and robotics into a flexible platform solution that is built from the ground up to answer the core needs and challenges of many farm owners. Helping them improve their environmental footprint and ensuring flexible capability to carry out tillage, drilling, weeding and precision spraying.



Ole's presentation will explore a new kind of agricultural mechanisation on the land, offering some great sustainability credentials. Agrointelli's Robotti product is light in its footprint to ease soil compaction, driverless in operation to reduce costs and perfect for tasks such as mechanical weeding to reduce chemical use. Robots will certainly play a part in providing a sustainable future for agriculture.

Ben Taylor Davies RegenBen



Ben Taylor-Davies, born and raised on a farm in Ross-on-Wye before studying geography at Liverpool University. A job as an agronomist was going extremely well until 2012 when his young son was involved in a horrific horse accident, which changed everything, forever and had a huge impact on his mental health.

A Nuffield scholarship in 2015/16 ensued, where he studied blackgrass, but much more than that was fortunate to travel the world and look at all aspects of farming. The ideas of regenerative agriculture resonated with his farm ethos of hedge planting and increased biodiversity and spaces for nature and soon decided it was time to put the fun back into farming!

Since this decision they have regenerated their farm, environment, family and mental health – “its been an incredible journey”.

Ben's presentation offers a fascinating journey in his farming career, specifically how to farm sustainably in harmony with the environment. The audience will be taken through Ben's regenerative agriculture approach and how it is being practically applied in a commercial farming enterprise and what the future holds.



Engineering sustainability in Agriculture

Panel Discussion chaired by

IAgrE Past President

Andy Newbold CEng FIAgrE

Andy publishes the IAgrE's Landwards Journal as well as Precise magazine, focused on practical implementation of technology in agriculture. He is a Chartered Agricultural Engineer, a Fellow of the Institution of Agricultural Engineers and a former president of the Institution.



If you have a question that you feel will stimulate discussion please do make a note and hand it to Andy prior to the forum.

Speakers taking part in the discussion:

Steve Constable, IAgrE President

Charlie Nicklin, IAgrE Chief Executive

George Sly, Horizon Agriculture

Paula Misiewicz, Harper Adams University

Ole Green, Agpointelli

Ben Taylor Davies, Regen Ben



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Delegates & Speakers

Sophia	Bahddou	Cranfield University
Clare	Butler Ellis	SSAU
Robert	Carpmael	Marks & Clerk LLP
Joe	Cluey	AICC
Steve	Constable	IAgrE President
Nicholas	Corker	UK Centre for Ecology & Hydrology
Andrew	Court	Court Farming Partnership
Hugh	Crabtree	Farmex
Laura	Cumplido Marin	Chap Solutions
Nikeshia	Davis-Shanks	City Farm Systems
Andrew	Duguid	AGCO
Alex	Day	CLAAS UK
Kit	Franklin	Harper Adams University
Dick	Godwin	Emeritus Professor
Ole	Green	Agrointelli
Bruce	Grieve	Manchester University
Harry	Henderson	AHDB
Paul	Hemingway	
Stephen	Howarth	AEA
Ray	King	Small Robot Company
Jonathan	Lodge	City Farm Systems
Athanasios	Mandis	De la Tierra Ltd
Joanna	McBurnie	AHDB
Stuart	McClimont	AEA
Paul	Miller	SSAU
Paula	Misiewicz	Harper Adams University
Andy	Newbold	Landwards Editor
Izzy	Newbold	Student
Charles	Nicklin	IAgrE CEO
Steve	Parkin	EiC Biosystems Engineering
Martin	Parsons	Wildlife Trust BCN
Sven	Peets	Harper Adams University
Barnabas	Pickford	Student
Alan	Plom	Douglas Bomford Trust
David	Purdy	John Deere
Richard	Reynolds	Anglian Water
Jane	Rickson	Cranfield University
Richard	Robinson	Autoguide
Charlie	Rollason	AGCO

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Stephen	Scoones	
Richard	Shepherd-Barron	Agricultural Journalist
George	Sly	Horizon Agriculture Ltd
John	Stafford	Silsoe Solutions Ltd
Mike	Stephenson	
Ben	Taylor-Davies	RegenBen
Kieren	Thomson	Marks & Clerk LLP
David	Tinker	
William	Tuer	W S T Rural Ltd
Alastair	Tulloch	
William	Waddilove	
James	Walsh	CLAAS UK
Chris	Watts	
Jonathan	Wheeler	Agricultural Journalist
Luke	Wheeler	AICC
Mike	Whiting	Newmac Ltd
Rhodri	Williams	Harper Adams University
Chris	Wiltshire	John Deere