Eusun Han
Assistant Professor
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Short presentation

I am a Digital Agronomist having a wide range of research interests in crop science. My research aims at testing and optimising novel agronomic managements to overcome the aggravating agricultural challenges such as year-to-year variation in water availability, soil physical and chemical constraints and low nutrient availability. I have a special focus on crop root systems by utilising and developing innovative techniques for root phenotyping, isotope-techniques, and soil-root investigations.

Qualifications

Agricultural Science, Ph.D, University of Bonn
Apr 2012 → Mar 2016

Sustainable International Agriculture, M.Sc, University of Göttingen
2009 → 2011

Agriculture, B.Sc, Tamil Nadu Agricultural University
2005 → 2009

Employment

Assistant Professor

Section for Crop Sciences

Taastrup, Denmark
1 Jan 2021 → nu

Publications

Temporary growth cessation of wheat roots following defoliation
Han, Eusun, Kirkegaard, J. A. & Thorup-Kristensen, Kristian, 2024, (E-pub ahead of print) In: Plant and Soil.

Usefulness of techniques to measure and model crop growth and yield at different spatial scales
He, D., Wang, E., Kirkegaard, J., Han, Eusun, Malone, B., Swan, T., Brown, S., Glover, M., Lawes, R. & Lilley, J., 2024, In: Field Crops Research. 309, 10 p., 109332.

The Chlorophyll Fluorescence Parameter F_v/F_m Correlates with Loss of Grain Yield after Severe Drought in Three Wheat Genotypes Grown at Two CO_2 Concentrations
Sommer, Søren Gjedde, Han, Eusun, Li, X., Rosenqvist, Eva & Liu, Fulai, 2023, In: Plants. 12, 3, 18 p., 436.

The enhancing effect of intercropping sugar beet with chicory on the deep root growth and nutrient uptake
Czaban, W., Han, Eusun, Lund, O. S., Stokholm, M. S., Jensen, Signe Marie & Thorup-Kristensen, Kristian, 2023, In: Agriculture, Ecosystems and Environment. 347, 12 p., 108360.

Deep learning with multisite data reveals the lasting effects of soil type, tillage and vegetation history on biopore genesis
Han, Eusun, Kirkegaard, J. A., White, R., Smith, Abraham George, Thorup-Kristensen, Kristian, Kautz, T. & Athmann, M., 2022, In: Geoderma. 425, 12 p., 116072.

Exploitation of neighbouring subsoil for nutrient acquisition under annual-perennial strip intercropping systems
Han, Eusun, Czaban, W., Dresbøll, Dorte Bodin & Thorup-Kristensen, Kristian, 2022, In: Agriculture, Ecosystems and Environment. 338, 10 p., 108106.

Prospects for summer cover crops in southern Australian semi-arid cropping systems
Rose, T. J., Parvin, S., Han, Eusun, Condon, J., Flohr, B. M., Schefe, C., Rose, M. T. & Kirkegaard, J. A., 2022, In: Agricultural Systems. 200, 14 p., 103415.

RootPainter: deep learning segmentation of biological images with corrective annotation
Smith, Abraham George, Han, Eusun, Petersen, Jens, Olsen, N. A. F., Giese, C., Athmann, M., Dresbøll, Dorte Bodin & Thorup-Kristensen, Kristian, 2022, In: New Phytologist. 236, p. 774-791 18 p.

Tracing deep P uptake potential in arable subsoil using radioactive ^{33}P isotope
Han, Eusun, Dresbøll, Dorte Bodin & Thorup-Kristensen, Kristian, 2022, In: Plant and Soil. 472, p. 91-104

Can precrops uplift subsoil nutrients to topsoil?
Han, Eusun, Li, F., Perkons, U., Küpper, P. M., Bauke, S. L., Athmann, M., Thorup-Kristensen, Kristian, Kautz, T. & Köpke, U., 2021, In: Plant and Soil. 463, p. 329-345

Digging roots is easier with AI
Han, Eusun, Smith, Abraham George, Kemper, R., White, R., Kirkegaard, J., Thorup-Kristensen, Kristian & Athmann, M., 2021, In: Journal of Experimental Botany. 72, 13, p. 4680-4690

Biopore-Induced Deep Root Traits of Two Winter Crops
Huang, N., Athmann, M. & Han, Eusun, 2020, In: Agriculture. 10, 12, 15 p., 634.

Core-labelling technique (CLT): a novel combination of the ingrowth-core method and tracer technique for deep root study
Han, Eusun, Dresbøll, Dorte Bodin & Thorup-Kristensen, Kristian, 2020, In: Plant Methods. 16, 13 p., 84.

Dynamics of plant nutrient uptake as affected by biopore-associated root growth in arable subsoil
Han, Eusun, Kautz, T., Huang, N. & Köpke, U., 2017, In: Plant and Soil. 415, 1, p. 145-160 16 p.

Precrop root system determines root diameter of subsequent crop
Han, Eusun, Kautz, T. & Köpke, U., 2016, In: Biology and Fertility of Soils. 52, 1, p. 113-118 6 p.

Optimising cropping techniques for nutrient and environmental management in organic agriculture
Köpke, U., Athmann, M., Han, Eusun & Kautz, T., 2015, In: Sustainable Agriculture Research. 4, 3, p. 15-25

Quantification of soil biopore density after perennial fodder cropping
Han, Eusun, Kautz, T., Perkons, U., Luesebrink, M., Pude, R. & Köpke, U., 2015, In: Plant and Soil. 394, 1-2, p. 73-85 13 p.

Root growth dynamics inside and outside of soil biopores as affected by crop sequence determined with the profile wall method
Han, Eusun, Kautz, T., Perkons, U., Uteau, D., Peth, S., Huang, N., Horn, R. & Köpke, U., 2015, In: Biology and Fertility of Soils. 51, 7, p. 847-856