

Eusun Han  
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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<sub>2</sub> 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 <sup>33</sup>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