

Sustainable soil management for stand longevity and yield optimization in asparagus

PhD studentship in Environmental Science for March 2018 entry

Deadline for applications is **15th of February 2018.**

Supervisor: Dr Sarah De Baets (Cranfield University), Co-Supervisor: Dr. Rob Simmons (Cranfield University)



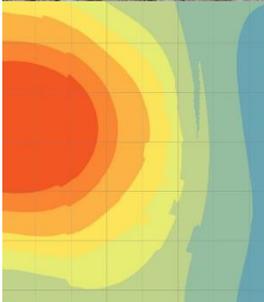
This PhD is a continuation of an existing field trial that was set up in 2016 to critically evaluate best management practices (BMPs) to prevent and/or remediate compaction, reduce runoff and erosion in asparagus wheelings and promote stand longevity. This project, FV450, will now be extended (2018-2021) as a Cranfield-AHDB PhD studentship.



The FV450 project has successfully generated a baseline root architectural survey for 2 asparagus varieties, baseline soil compaction and structural assessments and implemented several of the BMPs. However, in order to assess the long term impact of the proposed BMPs on root architecture and stand longevity it is essential that this research continues.



To ensure the applicability of the BMPs tested under FV450 to the wider UK asparagus grower community and hence their adoption it is essential that a robust understanding of the variability in root system architecture across the diversity of soil types, stand age, variety and productions systems represented by the grower community is achieved. In addition, there are still some fundamental questions that remain unanswered in particular, the effect of soil management and agronomic decisions on root system architecture and how root architecture correlates with crop performance.



This study therefore aims to (1) continue to critically evaluate the FV450 BMPs to prevent and/or remediate compaction, and reduce runoff and erosion in asparagus wheelings, (2) determine the 'outscaling' potential of the FV450 BMPs by critically evaluating the asparagus root system architecture associated with the wider UK asparagus grower land bank, and cropping practices, (3) develop a 'root damage vulnerability risk matrix'. This will allow growers to make informed decisions on the need for and timing of re-ridging/subsoiling operations as well as suitability of implementing the FV450 BMPs within their cropping system.

This is a fully funded Cranfield-AHDB-Cobrey Farms studentship with £31.5k research consumables, **£18k per annum stipend** and fees covered. More information and to apply, please follow this link:

<https://www.cranfield.ac.uk/research/phd/sustainable-soil-management-for-stand-longevity-and-yield-optimization-in-asparagus-phd>

Applicants should hold a first or 2:1 level or equivalent in subjects such as Agriculture, Environmental Science, Geography or Natural Sciences. Experience in soil science or plant measurements is desirable.

For informal enquiries please contact Dr Rob Simmons or Dr Sarah De Baets r.w.simmons@cranfield.ac.uk s.l.de-baets@cranfield.ac.uk