Optimizing soil nitrogen in babyleaf salad crops for sustainable crop production

PhD Studentship for October 2020

**Academic supervisor:** Dr Liz Shaw University of Reading

**Industry supervisors:** Stuart Carless and Ollie Bedford, The Watercress Company

The use of synthetic nitrogen fertilizers has been responsible for increased food production more than any other input to farming. However, the recovery of fertilizer N in crops is frequently low and fertilizer N not taken up by the crop can be lost through pathways that produce atmospheric (ammonia, nitric and nitrous oxide) and water (nitrate) pollutants (Fig. 1). This project has been proposed by a leading producer of babyleaf salads, whose motivation is to minimize losses of N from their production systems, to ensure that N is used in the most sustainable way.

The project will assess approaches involving the manipulation of N fertilizer form/timing and the addition of nitrogen cycle inhibitors for their efficiency in reducing N losses. You will undertake field trials in Dorset and also conduct controlled laboratory experiments for process understanding. You will gain extensive experience working at the interface between agricultural practice and research.

![Nitrogen cycle diagram](https://www.youtube.com/watch?v=Eko84-TIG1U)
What is the CTP?
This funded project forms part of the Waitrose Collaborative Training Partnership (CTP) between the Waitrose Partnership, their international food production and supply companies, Lancaster University, the University of Reading, University of Warwick and Rothamsted Research. The CTP will deliver studentships on the themes of sustainable crop production, sustainable soil and water and biodiversity and ecosystem services in agriculture. This project is based at University of Reading.

Who should Apply?
Applicants should hold a minimum of a UK Honours Degree at 2:1 level or equivalent in subjects such as Agriculture, Environmental Science, Chemistry, Biology or Natural Sciences. The ability and willingness to travel to field sites frequently is essential.

Funding
Full studentships (UK/EU tuition fees and stipend (£15,009 2019/2020 tax-free) for 4 years for UK/EU students subject to eligibility criteria. Unfortunately, studentships are not available to non-UK/EU applicants.
A student must have:
- Settled status in the UK, meaning they have no restrictions on how long they can stay
And
- Been ‘ordinarily resident’ in the UK for 3 years prior to the start of the grant. This means they must have been normally residing in the UK (apart from temporary or occasional absences)
And
- Not been residing in the UK wholly or mainly for the purpose of full-time education.(This does not apply to UK or EU nationals).

For further details please contact Liz Shaw: e.j.shaw@reading.ac.uk for application queries contact Roz Wareing, r.wareing@lancaster.ac.uk. Visit the Waitrose CTP Website http://wp.lancs.ac.uk/sustainable-agriculture/training/

How to apply
Follow the instructions on How to apply of the Waitrose CTP website http://wp.lancs.ac.uk/sustainable-agriculture/training/how-to-apply/

Send all applications to this unique email address as per the instructions on the How to apply webpage above
LizSha.wrdv2s9endx7ofrk@u.box.com

Deadline 17th February 2020 Midday