



UNIVERSITY OF
LINCOLN

A 4 year PhD Studentship is available to UK and international students, starting September 2022. Closing date for Applications 29th July.

Agriculture in the UK is undergoing a rapid and transformative movement towards regenerative agriculture. This promotes zero or minimum tillage, in contrast to conventional systems which are characterized by intensive cultivations, most often carried out soon after crop harvest. In regenerative agriculture cultivation is greatly reduced as a non-chemical control option. However, if we better understand the fate of weed seeds in zero/min-till systems more cultural weed control options could be found. This will allow better integration of herbicides and non-chemical methods, while still delivering the benefits of zero/min-till agriculture.

The PhD student will work on this important aspect of weed seed biology; focusing on our key UK grass-weed (black-grass, *Alopecurus myosuroides*) and comparing with emerging problem grass-weeds of regenerative agriculture. The project will help us to understand in detail the fate of weed seeds post-shedding and how management practice might change to promote seed losses as part of an improved Integrated Weed Management approach.

Project Objectives:

To achieve a better understanding of:

- 1 Factors affecting loss of weed seeds post-harvest.
- 2 Practical means to reduce weed seed return prior to harvest.
- 3 Weed seed capture/destruction at harvest (optional).
- 4 Modelling black-grass population dynamics as affected by seed return and post-shedding agricultural practices.

With this understanding more resilient Integrated Weed Management strategies can be devised.

This project will deliver:

- 1 Quantification of the value of delayed or absence of cultivation post-harvest at reducing subsequent in-crop weed infestations.
- 2 Better information on the potential of reducing weed seed return of different weed species within arable crops.
- 3 Assessing the practical potential of established and novel methods at capturing/destroying weed seeds at harvest (optional).
- 4 Practical recommendations for regenerative agriculture based on the effect of reducing seed return vs. controlling emerged weeds.

Are you expecting to achieve a 2:1 or 1st class honours degree (or equivalent e.g. MSc) in a science or agricultural degree? To apply please send a CV (2-pages max), academic transcript(s), and a 1-page cover letter outlining why you are interested in this project and your experiences with agriculture and/or research, to Dr Shaun Coutts at Scoutts@lincoln.ac.uk. International applicants will need to have a visa to take up the studentship. For any enquires contact Scoutts@lincoln.ac.uk.