

PHD SCHOLARSHIP OPPORTUNITY

"Identifying and quantifying limitations to oat yield under Irish conditions (QUIC Oats)"

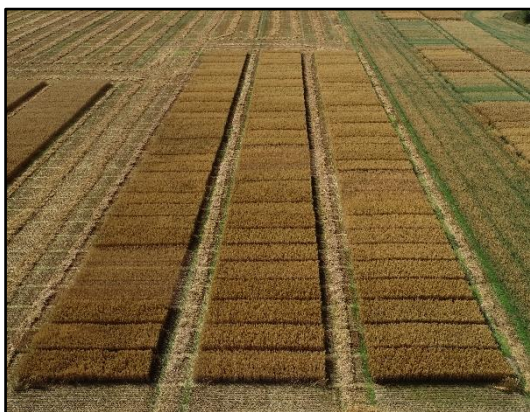
Funded by: South East Regional Development (SERD) Scholarship Fund

Background

Oats have been cultivated in Ireland for more than a thousand years. Until the 19th-century, oats cultivation covered approx. 650,000 ha, which declined to 20,000-25,000 ha in recent times. Oat is a versatile crop with multiple uses, e.g., high-quality food, feed, forage and fodder. Recently, oat has gained popularity among consumers as a healthy food for its dietary fibre content and is naturally gluten-free. According to the Teagasc Crops 2030 strategy guide, the domestic market is projected to increase by 8% by 2025, and in response to this, we need to complete important research that delivers science-led solutions to support the growing oats sector.



Overall, the Irish crop sector is facing challenges and opportunities driven by climate volatility, EU policy change and loss of plant protection products (PPP). Oats can be used directly as food with GHG reduction benefits compared to cereals used directly as animal feed. The crop has a high yield potential in Ireland due to our cool temperate climate with plentiful rain. In addition, oat's stress resilience and low-input requirement characteristics are integral in achieving the EU's future sustainability targets. Although oat has grown widely in the Irish environment, we still lack systematic knowledge on the critical growth and developmental phases of oat relevant to the Irish climate.



Project Outline

The main objective of this important project is to establish a baseline for the agronomic practices for oat cultivation. The efficacy of any agronomic practice depends on its proper application timing, as plants respond differently to various treatments at the different growth stages. Optimising oats yield is complex and involves multiple factors; however, the foundation starts by understanding the environmental influences on crop physiology and phenology. This project aims to dissect the developmental pattern of oats grown in Ireland and identify critical growth and development phases.

In this regard, the objectives to the focus of this project are to expand our understanding of the: -

- effect of environments (E) on the growth and development of oat (*Avena sativa*)
- influence of variety (genotype: G) and nutrient management (M) on oats' yield and grain quality

Findings from this work will lead to the production of a data-driven **Integrated Crop Management** guide for the Irish oat sector. This will follow a well-defined research path as detailed in previous guides for winter wheat¹ and spring barley².

¹ <https://www.teagasc.ie/media/website/publications/2016/Winter-Wheat-Guide.pdf>

² <https://www.teagasc.ie/media/website/publications/2015/The-Spring-Barley-Guide.pdf>

Requirements

Applicants should have a **First (1.1) or Upper Second Class (2.1) Honours or M.Sc. degree in an appropriate discipline such as Agriculture, Agronomy, Crop Physiology, Plant Biology or a related subject**. This field-based project requires frequent visits to fields for crop measurement and sample collections, followed by laboratory analysis of plant samples and grains. Thus, **good knowledge of plant physiology with practical experience in field-based plant phenotyping is highly desirable**.

The successful candidate will require to have a valid driving license before the commencement of the project. For more details about driving license requirements in Ireland, click [here](#).

The candidate should have excellent communication skills in the English language (oral and written), as explaining research to stakeholders in the oats industry will be an integral part of the work. Applicants whose first language is not English must demonstrate on the application that they meet an English language requirement with a minimum score of 6.0 IELTS (minimum of 6.0 in each component) or equivalent. For more details, click [here](#).

Award

This PhD Scholarship is a joint research project between the Teagasc, Waterford Institute of Technology (WIT) and Institute of Technology Carlow (ITCarlow), Ireland. The student will be registered in ITCarlow, supervised by Dr. Atikur Rahman (Teagasc), Dr. John Carroll (ITCarlow) and Dr. Tony Woodcock (WIT). The student will primarily be based at Teagasc Oak Park Research Centre, Carlow. The scholarship provides a stipend of €16,000 per annum plus tuition fees for 4 years.

Further Information

For information regarding SERD funding, click [here](#).

Contact Dr. Atikur Rahman (atikur.rahman@teagasc.ie) and Dr. John Carroll (john.carroll@itcarlow.ie) for further information about the project.

Application Procedure

Submit an electronic copy of a cover letter (single page) and Curriculum Vitae (**as a single PDF file and name it with your Name**) to: Dr. Atikur Rahman (atikur.rahman@teagasc.ie), Dr. John Carroll (john.carroll@itcarlow.ie) and Dr. Tony Woodcock (twoodcock@wit.ie).

You must quote the "**QUIC Oats PhD application**" in the subject field.

Closing date: Until a suitable candidate is found or 5th November 2021.