

Understanding the links between climate change and arable crop diseases using modelling

July 29 2016



Credit: University of Hertfordshire

A recently published research paper co-authored by the University of Hertfordshire's Bruce Fitt, explores how modelling is being used to help guide planning of climate change adaptation strategies to ensure future food security.

The paper entitled Modelling impacts of [climate change](#) on arable crop diseases: progress, challenges and applications, has been published on *Science Direct*. It examines the work being done to combine climate change, crop growth and crop disease models. Jointly published with Fay Newbery (University of Reading) and Aiming Qi (Rothamsted Research), the trio has focused on how these different multi-model ensembles are progressing, the challenges they face and the different applications of each.

Changes in climate are estimated to have reduced global agricultural production by 1-5% per decade over the last 30 years. This is worrying, as world demand for staple crop products is predicted to increase by 60% by 2050. Despite progress, and continued focused research, the paper identifies key gaps that must be filled in order to ensure future needs in food and environmental security. It states that inter-disciplinary collaboration is needed to ensure all aspects of arable crop disease can be successfully modeled and planned for.

The University of Hertfordshire's Bruce Fitt is Professor of Plant Pathology and specializes in research on epidemiology, modelling, forecasting, diagnosis and control of diseases of arable crops in relation to climate change. He currently leads a Crop and Environmental Protection research group at the University. Much of the research group's work is focused on devising sustainable strategies for management of serious diseases of arable [crops](#) and their causes.

Professor Fitt commented: 'This is an extremely important research area that needs to be explored further. Modelling, although not without its uncertainties, is vital in helping us to take action now that will protect us in the future. If the impacts of [crop disease](#) and climate change are left uncontrolled and unconsidered, crop losses will increase greatly. Much of the global population is already struggling with issues pertaining to food security. As such, we must ensure more research is done to

safeguard the most vulnerable in our global society.'

More information: Fay Newbery et al. Modelling impacts of climate change on arable crop diseases: progress, challenges and applications, *Current Opinion in Plant Biology* (2016). [DOI: 10.1016/j.pbi.2016.07.002](https://doi.org/10.1016/j.pbi.2016.07.002)

Provided by University of Hertfordshire

Citation: Understanding the links between climate change and arable crop diseases using modelling (2016, July 29) retrieved 24 April 2024 from <https://phys.org/news/2016-07-links-climate-arable-crop-diseases.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.