

Title: PHC2018/16 – The future threat of PCN in Scotland

Background: Potato cyst nematode (PCN) remains an important threat to potato production in the UK as elsewhere and is a particular concern to the Scottish seed industry, since land found to be infested with the pest cannot be used to grow seed. However, ware crops can still be grown which may exacerbate issues for the seed potato industry. While there is good cultivar resistance (ca 50% of potatoes in Scotland) to species *Globodera rostochiensis*, helping to halt its spread, there is limited resistance to a second species (*G. pallida*), which has a greater potential to increase and spread. This is already having a detrimental effect on the seed industry in Scotland with >5% of scheduled seed land already lost. This project is divided into four parts to help better understand the threat from PCN in the future:

- A review of possible interventions, to include an analysis of PCN management in other countries, to inform the work packages below:-
- Modelling future risks of both *G. rostochiensis* and *G. pallida*.
- Grower behaviours and attitudes to interventions (to include input from industry stakeholders).
- An economic analysis of likely impact in Scotland based on a range of possible interventions.

Impact: A clearer understanding of possible control options, the economic impacts of these options and the likelihood of growers and buyers adopting new resistant varieties, altering rotation practices or any other interventions such that recommendations on best strategies (including statutory controls) can be made.

Objectives and research required for this call:

- Review on control options: A review of control options for PCN from Scotland/UK and other countries, including resistant / tolerate varieties, trap crops etc.
- Modelling / forecasting: The effects of available control options for both *G. rostochiensis* and *G. pallida*, including the role that resistance may play against *G. pallida* in terms of spread both nationally and over time. This might include the use of Scottish government (SASA) data that shows the extent of infected land regionally across Scotland, including the effects of introducing *G. rostochiensis* resistance into Scotland, recent trial data from industry, the role of the future climate and any other available data.
- Grower and industry attitudes and behaviours. An analysis of what drives growers to include seed or ware in rotations, what interventions are acceptable and what they perceive as

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barriers. For example, an analysis of the drivers of varietal choice by both farmers and key buyers and the likelihood of new resistant / tolerant varieties being taken up to replace more traditional but susceptible varieties to clean or reduce infestation levels. To investigate any other IPM measures, e.g. those currently promoted by AHDB Potatoes, to determine their effectiveness and what can be done to improve upon them.

- An economic analysis: Economic analysis of impact based on the outcomes above and the most likely future scenarios identified.

Outputs required:

A single / joint report offering a synthesis of information and recommendations from the above topics suitable for readership of key stakeholders of the PHC.

A 1-2 page policy summary of findings and recommendations.

Indicative key dates:

- Deadline for submission of project application: 21st March 2019
- Project start: 1st April 2019
- Overview of plans and project start-up meeting with PHC Directorate: by end April 2019
- Completed discussion paper and summary: 1st August 2019
- Meeting with Scottish stakeholders: by 31st August 2019

Milestones to be confirmed by bidder.

Date all work needs to be completed by: 1st September 2019

Project type: Call down - collaborative

Maximum funding available (including overheads and VAT, where applicable): Indicative value £35,000

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