

PHC2024/03: Developing an assessment framework to identify plant health benefits and risks for emerging novel crops in Scotland.

Background and knowledge gap: The introduction and uptake of alternative crops in Scottish agricultural systems may bring opportunities to meet net-zero or biodiversity targets as well as enabling the diversification of rotations, improved soil health or access to alternative markets. However, there is a lack of knowledge regarding the potential plant health benefits/opportunities or, conversely, risks to plant health arising from the cultivation and exploitation of new and emerging novel crops in Scottish agriculture. Extended rotations may reduce plant health risks to other crops in the rotation, however risks could include the accidental importation of plant pests and pathogens, or very limited control options for known pest and pathogen problems associated with the crop in question. In addition, this work would be timely in the context of the recent loss of many 'Extension of Authorisation for Minor Use's' (EAMU's), which has created particular challenges to the treatment of minor crops.

A systematic framework for how to conduct risk/benefit analyses on emerging novel crops in Scotland would allow plant health risks and benefits to be considered before widespread uptake, and any mitigation strategies implemented at the earliest stage. Current and predicted examples of emerging crops in Scotland include hemp, rye, beet, flax, cover crops and novel legume and vegetable crops. Many of these examples are currently relatively low-input crops when it comes to the use of plant protection products but there may be parallels and lessons to be learnt from considering the uptake of crops, like oilseed rape or rye which are now well established in Scotland, but where pest and disease burdens have increased steadily from the point of introduction.

A framework, once developed, could also be deployed for the consideration of introductions in the natural environment, horticulture and forestry sectors.

Impact:

This stand-alone project will create a systematic framework for the evaluation of plant health risks and benefits for emerging / novel crops in Scottish agriculture and will be suitable for use when considering the introduction of species in the natural environment, horticulture and forestry sectors.

It will:

- create an evidence base to underpin guidance on the appropriate deployment of emerging crops (with a case study) in Scottish agricultural settings.
- inform risk mitigation strategies and provide a source of information to growers so that plant health benefits will be maximised and risks minimised.
- provide a source of information to potentially inform policies relating to promoting the uptake of emerging crops from a Scottish perspective.

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Objectives and research required for this call:

The objectives of this project are to:

- Identify novel and emerging crops in Scotland and quantify current and projected acreages.
- Create a framework for the systematic assessment of the plant health and biosecurity risks/benefits and management options for novel and emerging crops in Scottish agriculture and novel and emerging species across other plant health sectors.
- Provide a case study on an emerging crop with a review of current information regarding plant health/ biosecurity benefits and risks for Scotland.

The research proposed should include a horizon scan of novel and emerging crop options for Scotland and deliver context on current acreages and likely uptake. This could be through an analysis of published information sources or through engagement with stakeholders, or via a combination of approaches.

The risk assessment framework should include benefits and risks, both current and downstream, to Scotland's plant health status and should also identify the efficacy and availability of any control or mitigation strategies. The development of the assessment framework could be informed by previous novel crop introductions and should include context on treatment and mitigation options for any plant health risks identified. The framework developed should be informed by the agricultural examples identified in the horizon scanning element, but also suited to the consideration of introductions in the natural environment, horticulture and forestry sectors.

The case study should list (and critically appraise) apparent benefits such as net-zero and biodiversity, carbon sequestration, soil health, reduced inputs, or any other downstream benefits, as well as identify and assess plant health benefits and risks. Plant health benefits could also be used in its promotion and any risks identified and control or treatment options could form the basis of management plans for growers, such that any risks are minimised at the outset. Information sources used for all elements of the project should be cited and those suitable as information sources for growers or policy makers identified.

Deliverables required from individual project:

- Develop and run/facilitate a knowledge exchange stakeholder workshop and/or desk study to identify novel and emerging crops and quantify current and projected acreages.
- Develop a plant health assessment framework suitable for application with existing and future examples.
- Final Report with executive summary, to contain a worked case study and the assessment framework, along with key sources, analysis, findings and recommendations for implementation or further work. Reports should be a maximum of 20 pages of text (30 pages

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including figures but excluding appendices and references). Cover image(s) with associated photo credits should also be supplied.

- Brief policy summary (2 pages maximum) explaining how the work has contributed to filling evidence gaps and the context in which the findings can be used by policy makers and practitioners.
- Presentation at Scotland's Plant Health conference and any other relevant stakeholder meeting(s) to disseminate findings and contribution to other KE output such as the PHC virtual poster room or blogs.
- 200 words lay summary for project overview at outset, and of findings at completion (for website and newsletter).
- Slide deck of the key project findings.

Meetings

- Project meetings throughout project lifecycle to include PHC manager, PHC Sector Lead and Scottish Government policy contact/s.
- Meeting/s with relevant PHC Impact Officer and Communications Officer to plan dissemination of project findings and impact strategy.
- Attendance at briefing discussion with PHC Steering group to discuss findings and next steps.

Indicative key dates:

- Deadline for submission of applications: 12pm on 30th August 2024
- Project start: 4th November 2024
- Overview of plans and project start-up meeting with PHC Directorate: 22nd November 2024
- Final report and policy summary: 30th April 2025
- Project outputs signed off by PHC Sector Lead: 30th May 2025

Detailed milestones to be confirmed by bidder.

Date all work needs to be completed by: 30th April 2025

Maximum funding available exclusive of VAT¹ (where applicable) and including any knowledge exchange activities: £30, 000

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Submitting an application form

Applicants should use the PHC Application form when applying for projects and must ensure they are able to accept the [PHC Funding Terms and Conditions](#) before submitting an application.

Completed applications should be submitted to info@planthealthcentre.scot for evaluation by 12pm on Friday 30th August. Successful applicants will be notified by Friday 26th September, and we may request further clarification on any aspect of the application prior to contract award. You should highlight any potential conflicts of interest in your proposal.

Please contact the Centre Manager if you have any queries (info@planthealthcentre.scot). Answers to any non-confidential questions will be published on our website.

Review of application

Applications will be reviewed by a panel selected from the PHC Directorate, Scottish Government, PHC partners and/or commissioning stakeholders, as appropriate.

Expectations for section 1 of the application form:

Expectation	Descriptor
Duration	The proposed duration will align closely to the details provided in the anticipated timescales section of the specification.
Staff time and effort	The proposed allocation of staff time and effort is appropriate and includes all deliverables. The proposal must also provide a commitment that named staff members will be available to work on the contract if the bid is successful.
Project costs	The estimated breakdown of project costs is realistic and inclusive of all deliverables.

Expectations for section 2 of the application form:

Expectation	Descriptor
Background	The proposal should include an introduction which demonstrates a clear understanding of the project requirements. This should include the need for this research; the project aim; and how the proposal will address this aim.
Proposed methodology and outcomes	The proposal should demonstrate a high quality and workable methodology, including: how the evidence will be identified, reviewed and assessed, consulting relevant stakeholders and/or experts where appropriate, to address the key questions and produce the deliverables in the timescales required.
Milestones	The project milestones are logical, practical and include all deliverables.

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Project Management	The staff, resources and expertise are appropriate for conducting the proposed project. The proposal should name the project lead.
General and specific topic expertise and experience	The proposal should provide details of individual staff members who will work on this project and demonstrate how they will meet the project requirements, specifically: - general research experience and expertise - specific experience and expertise relevant to the call
Risk	The proposal should provide a risk assessment matrix detailing any risks identified in relation to the delivery of this contract, and proposed mitigation measures to minimise their probability and impact, focused particularly on risks to completion on time.

¹ Please note that costs should be submitted net of VAT recovered by the applicant. Applicants should seek advice on appropriate VAT treatment of proposed funding.

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