

PHC2026/03: Scoping isotopic analysis technologies for understanding plant pest origin for improved pest risk analysis in Scotland.

Background and knowledge gap: Isotopic analysis is a powerful tool for tracing the geographic origin of pests, using variations in stable isotopes like carbon, nitrogen, oxygen, hydrogen, and sometimes sulphur and strontium. These isotopes provide insights into the environmental and ecological conditions the organism experienced during its life. Combining multiple isotopic systems (e.g., H, C, and N) increases the precision of geographic assignments by cross-referencing different environmental markers.

Data on the origin of a recently introduced species is important when developing pest risk analyses. This is particularly the case when tracing newly arrived species through trade networks, clarifying how the pest arrived and how to mitigate the risk of further arrivals. It is therefore conceivable that isotopic analysis could be utilised to quickly understand the origin of an introduced organism. This technique is not widely used currently for biosecurity operational purposes, but could it be a useful tool in the future to clarify the origins of an intercepted pest and improve the outbreak response in Scotland.

Impact: Clarifying the origin of pests is a critical element of pest risk analysis, improving the chances of future interceptions to protect Scotland's industries and natural environment. This work should look to scope the possibility of whether isotopic analysis could be another tool for improving our understanding of pest origin, thereby improving biosecurity for Scotland.

Objectives and research required for this call:

Objective: clarify the appropriateness of isotopic analysis for plant pest biosecurity in Scotland.

Research to be conducted:

- a) Carry out a desk-based review to clarify what isotopic analysis options exist for biosecurity and whether they would be appropriate for use in Scotland and the UK. This should:
 - include seeking opinions from domestic and international experts in the field
 - identify pests of concern to Scotland that would both benefit from an isotopic analysis approach to geographic origin, and for which such an approach would have a good likelihood of success
 - undertake a case study exploring the practicality and economics of deploying isotopic analysis for a selected pest of concern to Scotland
 - include whether the technology is currently available and an indication of cost.
- b) Present recommendations to Scottish Government based on the findings of the review.

Deliverables required from individual project:

- Final Report with executive summary on investigations, to contain key sources, analysis, findings and recommendations for implementation or further work. Reports should be a maximum of 20 pages of text (30 pages including figures but excluding appendices and references). Cover image(s) with associated photo credits should also be supplied.

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- 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 word 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, Scottish Government policy contact and commissioning stakeholder [delete where not appropriate].
- 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: **Monday 13th April 2026**
- Project start: **Monday 18th May 2026**
- Overview of plans and project start-up meeting with PHC Directorate: **by Friday 29th May 2026**
- Final report and policy summary: **Friday 11th December 2026** (7.5 months)
- Project outputs signed off by PHC Sector Lead: **Friday 15th January 2027**

Detailed milestones to be confirmed by bidder.

Date all work needs to be completed by: Length of projects may vary, but all work must be completed by: **Friday 11th December 2026**

Maximum funding available exclusive of VAT¹ (where applicable) and including any knowledge exchange activities: Bids up to a maximum budget of £25,000 will be considered.

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.

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 Monday 13th April 2026. Successful applicants will be notified by Friday 1st May 2026 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 stakeholder, as appropriate.

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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.
Project Management	The staff, resources and expertise are appropriate for conducting the proposed project. The proposal should name the project lead.

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General and specific expertise and experience	and topic and	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: <ul style="list-style-type: none">- 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.

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