AHDB Horticulture FV Panel

Research and Development and Knowledge Transfer

Call for Full Proposals

Onions: Investigation into the control of White Rot in bulb and salad onion crops.

Purpose/Primary Objective:

To develop an integrated crop management strategy for control of OWR.

Scope

The work should cover both conventionally and organically grown bulb and salad onion crops.

Background

White Rot (Sclerotium cepivorum) affects both bulb and salad onion crops in the UK. A minimum of 2-3% of the UK bulb onion crops are estimated to be affected annually, equating to around £2.6M of lost crop. In salad onions the level of damage is higher at around 10-15% (£2.9M). Sclerotia from the fungus are able to survive for many years in field soils, effectively putting affected fields out of production for Allium crops.

Historically a high proportion of bulb onion crops were grown on fen and silt soils in the south eastern areas of the UK, however many of these soils are now heavily infested with white rot sclerotia and so production has moved to sandier soils partly to avoid this pathogen. The move to sandier soils has led to a loss of yield and given the trend of reducing industry returns, there is now an increasing desire to return to these higher yielding soils. Salad onion growers are also experiencing problems with land availability, with most recent production being focused in the Vale of Evesham and South East areas.

For this reason the British Onion Producer Association (BOPA) are keen to encourage further R&D and KT to investigate potential control mechanisms.
Specific objectives

It is expected that the proposed work should:

1. Draw together current literature on this pathogen/host interaction with particular attention to the AHDB Horticulture funded FV 219 series of projects.
2. Identify a number of novel mechanisms for control which may include:
   - Investigation of the fundamentals of sclerotial behavior
   - Seed/set treatments (biological and conventional)
   - In-furrow/sowing treatments (biological and conventional) e.g. with starter fertiliser injection
   - Field treatments (biological and conventional)
   - Stimulation of sclerotial germination pre-crop
   - Catch crops
   - The effect on sclerotia by flooding
3. Include efficacy testing in vitro and in field experiments in both crops.
4. Develop and validate a reliable soil sampling test to determine risk.
5. Produce a fully integrated strategy for disease management relating to this pathogen.

The above list is indicative and is not meant to be exhaustive. Contractors should seek to identify additional areas of interest and relevance for inclusion in the study.

Outputs

1. Annual and final reports
2. A factsheet outlining the important outcomes of the work
3. An article in AHDB Grower
4. A presentation to industry at a venue of AHDB Horticulture’s choice.

Relevant background research


Pontin, M et al, (2015), Allium sativum produces terpenes with fungistatic properties in response to infection with Sclerotium cepivorum, Phytochemistry 115, 152-160


Utkhede, RS., & Rahe, JE., (1983) Interactions of Antagonist and Pathogen Biological Control of Onion White Rot, Phytopathology 890
Previously funded AHDB Horticulture work Onion White Rot

<table>
<thead>
<tr>
<th>Project Number</th>
<th>Title</th>
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<tbody>
<tr>
<td>FV 04a</td>
<td>Rot control: soil sterilisation</td>
</tr>
<tr>
<td>FV 04b</td>
<td>Evaluation of seed treatments for the control of white rot in onions</td>
</tr>
<tr>
<td>FV 04c</td>
<td>Bulb and salad onions: evaluation of tebuconazole seed treatments and supplementary sprays for the treatment of white rot</td>
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<tr>
<td>FV 04d</td>
<td>Bulb onions from sets: control of white rot by set, soil and foliar treatments</td>
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<tr>
<td>FV 04e</td>
<td>Salad Onions: Control of white rot</td>
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<tr>
<td>FV 219</td>
<td>Composting of onion and other vegetable wastes, with particular reference to control of Allium white rot</td>
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<tr>
<td>FV 219a</td>
<td>Integrated Allium white rot control using composts and <em>Trichoderma viride</em></td>
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<tr>
<td>FV 219b</td>
<td>Optimising field-scale control of Fusarium basal rot and white rot of onion using <em>Trichoderma</em> colonised composts and pellets, and biofumigant Brassica and onion residues</td>
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These reports and publications are available from the AHDB Horticulture website [horticulture.ahdb.org.uk](http://horticulture.ahdb.org.uk)
Budget

Indicative funding in the region of £80,000 - £100,000 is thought reasonable for a 2-3 year study.

Value for money to levy payers is a selection criterion. AHDB Horticulture is intending to fund only a single project but joint proposals from two or more contractors are acceptable and are encouraged where there is added value. AHDB Horticulture may, if it is deemed desirable, request applicants to form a consortium and work together.

Deadlines for the application procedure and project delivery

<table>
<thead>
<tr>
<th><strong>Full Proposal deadline</strong></th>
<th>12:00 on 15/01/2016</th>
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<tbody>
<tr>
<td></td>
<td>There is no Concept or Expressions of Interest phase.</td>
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<tr>
<td></td>
<td>Make an electronic submission in line with the instructions below</td>
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<td></td>
<td>Receipt will be the time of receiving email.</td>
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<tr>
<td><strong>Applications reviewed</strong></td>
<td>Submissions will be evaluated by several members of the BOPA association/technical committee and relevant AHDB Horticulture staff. The successful proposal will be viewed by the FV Panel for approval of funding.</td>
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<tr>
<td><strong>Applicants informed of outcome</strong></td>
<td>By 25/02/2016</td>
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<tr>
<td><strong>Project commences</strong></td>
<td>On 01/04/2016 (Flexible)</td>
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<tr>
<td><strong>Project completion</strong></td>
<td>By 31/03/2019 (Flexible)</td>
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Application

- The following application form should be used: application form vT06.15 referring to our guidance notes to aid completion
- Electronic submission via button below (subject should include TBA00190 – Onion White Rot)
- To avoid bias in assessing the other evaluation criteria, the technical merit of applications will be judged before consulting the project costs. To aid this process, please submit the technical content of the proposal separately from the financial content i.e. separate the document into two distinct files from section 19 onwards.

Or e-mail to: Hort.Funding@ahdb.org.uk
Evaluation of submissions

A number of criteria will be used to judge the quality of the submissions (value in brackets indicates weight in assessment process)

1. **Scientific and technical quality (30%)**
   - Clarity & scope of aims and objectives
   - Clarity and appropriateness of methodology
   - Feasibility (including risks)
   - Does the proposal address all relevant issues? i.e. objectives general and specific

2. **Expertise and strength of team (20%)**
   - Knowledge and expertise
   - Quality of past contributions to, and impact on, the proposed area of research
   - Potential to bring added value to the proposed research through current and/or past contributions
   - Complementarities of expertise of the team

3. **Project costs (15%)**
   - Are costs reasonable and necessary?
   - Will the total budget be adequate to carry out project activities?
   - For a joint project proposal, is the shared budget appropriate, explained clearly and in sufficient detail?

4. **Value to the industry (15%)**
   - Appropriateness of identified research

5. **Knowledge Transfer (15%)**
   - Identification of significant knowledge gaps
   - Identification of appropriate transfer mechanisms

6. **Economic and environmental impact (5%)**
   - Potential economic benefits of R&D gap filling identified

Any proposal that scores less than 60% overall in the evaluation process will be rejected.

For each of the criteria under examination the following scoring system will be applied:

0 — The proposal fails to address the criterion under examination or cannot be judged due to missing or incomplete information;
1 — Poor: The criterion is addressed in an inadequate manner, or there are serious inherent weaknesses;
2 — Fair: While the proposal broadly addresses the criterion, there are significant weaknesses;
3 — Good: The proposal addresses the criterion well, although improvements would be necessary;
4 — Very Good: The proposal addresses the criterion very well, although certain improvements are still possible;
5 — Excellent: The proposal successfully addresses all relevant aspects of the criterion in question. Any shortcomings are minor.
Questions

If you have a specific question related to this call please e-mail Cathryn.Lambourne@ahdb.org.uk

As part of the open tender process AHDB Horticulture cannot discuss specific project details prior to proposal submission. Answers to frequently asked generic questions will be posted on the AHDB Horticulture website to assist applicants in the process of completing the application forms.

Downloads:

- The application form for funding: AHDB Horticulture Application Form for Funding vT06.15
- Guidance notes for applicants seeking AHDB Horticulture funding: AHDB Horticulture Guidance Notes for Funding Applications