

Overview of *Hylobius* Research

Katy Dainton

Research Entomologist, Forest Research

6 RESEARCH PRIORITIES

1. Predictive model
2. Guidance
3. Physical barriers
4. Biocontrol
5. Genetic resistance
6. Alternative pesticides

More information about current Hylobius research available at:
[https://www.confor.org.uk/resources/hylobius-abietis-industry-research-programme-\(hirp\)/](https://www.confor.org.uk/resources/hylobius-abietis-industry-research-programme-(hirp)/)

Catalogue summarising recent and current Hylobius research.

Compiled by Katrina Dainton on behalf of the Hylobius Industry & Research Partnership.

Person(s) / Organisation(s) carrying out the work				
Item	Outcome/s addressed	Title of project/ study	Details of main contact for Hylobius aspect of work	Other people/ organisations
1	6. Alt. pesticides	Developing chemical application equipment / methods	Tom Vincett (FE, Delamere Nursery) (tom.vincett@forestryengland.uk)	JVD Engineering, Leeds
2	6. Alt. pesticides	Assessing acetamiprid runoff	Tom Nisbet (Forest Research). Tom.Nisbet@forestresearch.gov.uk	Natural Resources Wales are supplying the site and residue analysis.
3	6. Alt. pesticides	Neonicotinoid Insecticides in British Freshwaters: 2016 Water Framework Directive Watch List Monitoring Results and Recommendations	Matt Shardlow, CEO, Buglife, Bug House, Ham Lane, Orton Waterville, Peterborough, PE2 5UU info@buglife.org.uk, www.buglife.org.uk	Stéphanie Schaan, European Commission located monitoring data, Caroline Steele supplied the No Watch List data.
4	3. Physical barriers; 4. Biocontrol; 6. Alt. pesticides	Alternative Hylobius insecticide control research (up to 2015)	Roger Moore (Forest Research) Roger.Moore@forestresearch.gov.uk	Imam Sayyed (Maelor), Kerstin Leslie (Tilhill)

1. PREDICTIVE MODEL

Develop an improved predictive *Hylobius abietis* population model, appropriate for use in all forest situations.

Research (approx. last 10yrs):

Number of projects: 6

Total indicative cost: c.£450K

Deliverables:

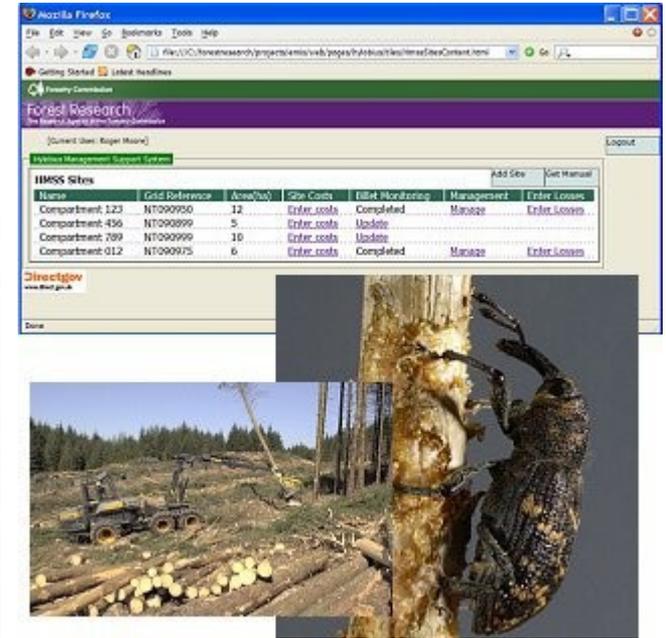
(green – good progress, orange – some progress, red – not progressed)

1. Improved local site-specific risk prediction
2. Development of landscape scale dispersion models
3. Spatiotemporal prediction (interactive/ integrated systems)

1. PREDICTIVE MODEL



Billet traps



Hylobius Management Support System

2. GUIDANCE

Create a regularly updated guide on *Hylobius abietis* integrated pest management for use by all stakeholders across the sector.

Research (approx. last 10yrs):

Number of projects: 1 (plus incorporated into others)

Total indicative cost: c.£30-50K

Deliverables:

(green – good progress, orange – some progress, red – not progressed)

1. Up-to-date guidance on the Integrated Pest Management of *Hylobius* in UK Forestry.
2. HIRP website providing a single point of access to information relating to *Hylobius* research and management (with links to other organisations).
3. A set of FAQs/Briefing Notes addressing the main *Hylobius* topics.

2. GUIDANCE



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Hylobius Programme

Hylobius Industry Research Programme (HIRP)

Hylobius abietis, the large pine weevil, is a major constraint to forestry in the British Isles, and particularly to the restocking of felled areas with conifers.

Since 2017 a new collaborative approach has developed to build on and drive forward the search for a sustainable pest management system; in particular to scope and develop an integrated approach that does not rely on pesticides which may be withdrawn or restricted in the future.

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HIRP webpage, CONFOR

The Integrated Management of *Hylobius abietis* in UK Forestry



Dr Ian H. Willoughby, Dr Roger Moore and Dr Tom R. Nisbet

The Research Agency of the
Forestry Commission

3. PHYSICAL BARRIERS

Develop alternatives to chemicals that work in areas of high *Hylobius abietis* population, including physical barrier products.

Research (approx. last 10yrs):

Number of projects: 4

Total indicative cost: c.£155K

Deliverables:

(green – good progress, orange – some progress, red – not progressed)

1. An up-to-date catalogue of suitable barrier methods, with established efficacy, acceptability, and applicability in UK/Ireland conditions.
2. A catalogue of tested options, not all of which will make it through to the suitable list.
3. Regular briefings on the outcome of tests.

3. PHYSICAL BARRIERS

Variable success

Better protection against low populations, struggle with high numbers

Transplant survival an issue with some treatments



4. BIOCONTROL

Develop a viable biocontrol option – using insect pathogenic organisms such as fungi and nematodes that prey on and kill *Hylobius abietis*.

Research (approx. last 10yrs):

Number of projects: 9

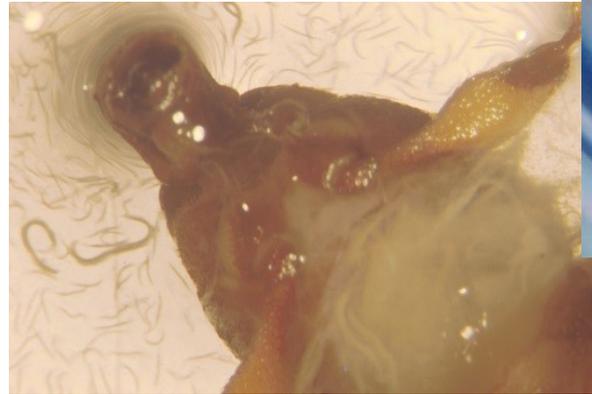
Total indicative cost: c.£750K

Deliverables:

(green – good progress, orange – some progress, red – not progressed)

1. A new, tested biocontrol option involving the deployment of entomopathogenic fungi and/ or nematodes.
2. Specific improvements to the delivery mechanisms for stump application and kill rates of entomopathogenic nematodes.

4. BIOCONTROL



5. GENETIC RESISTANCE

Using tree genetics to identify resistance characteristics in SS with a view to breeding more resistant planting stock.

Research (approx. last 10yrs):

Number of projects: 2

Total indicative cost: c.£100K

Deliverables:

(green – good progress, orange – some progress, red – not progressed)

1. Identification of *Hylobius* resistance characteristics in Sitka spruce
2. Implementation of *Hylobius* resistance into Sitka spruce breeding programme

6. ALTERNATIVE PESTICIDES

Identify a range of alternative, weather resistant, non-neonicotinoid pesticides, that have low environmental impact, and that might be used as a last resort if other methods on non-chemical protection fail.

Research (approx. last 10yrs):

Number of projects: 7

Total indicative cost: c.£215K

Deliverables:

(green – good progress, orange – some progress, red – not progressed)

1. An up-to-date catalogue of suitable insecticides and adjuvants, with established efficacy, acceptability, and applicability.
2. A catalogue of tested chemicals, not all of which will make it through to the suitable list.
3. Regular briefings / publications / dissemination of the outcome of tests.

6. ALTERNATIVE PESTICIDES

Pre- and post-planting
Alpha-cypermethrin / cypermethrin
Acetamiprid (Gazelle)
Chlorantraniliprole

