fera
The Food and Environment Research Agency

29 October 2012

Mr H Arijs
DG SANCO-E1
European Commission
200 Rue de la Loi, Rm 86 1/17
B-1049 Brussels
Belgium

Dear Harry

***Chalara fraxinea***

In accordance with Article 16(2) of Directive 2000/29/EC, and following my verbal report at the Standing Committee on Plant Health last week, I am writing to inform you of protective measures being introduced by the UK against the threat from *Chalara fraxinea*. This organism is not currently regulated at EU level, but is on the EPPO Alert List.

My letter of 21 March 2012 reported the UK's first interception of this harmful organism. Since then we have prepared a risk assessment, which provides evidence in support of protective measures against this harmful organism. We have also carried out a consultation on this issue and initiated surveillance and eradication/containment activities.

As a result, legislation has been introduced throughout the UK (separate legislation in Great Britain and Northern Ireland) to require that all movements of ash planting material (trees and seeds) must derive from a pest free area. The legislation applies across the UK from today and copies are attached, with the risk assessment, for your information.

The key elements of the legislation are:

- *Chalara fraxinea*, including its teleomorph *Hymenoscyphus pseudoalbidus*, may not be introduced into or spread within the UK.
- Trees intended for planting of *Fraxinus* L. (including seeds and tree parts for planting) may only be introduced to the UK if accompanied by a phytosanitary certificate (for third country imports) or plant passport (for EU traded material) confirming that they have been grown throughout their life in a pest free area for *Chalara fraxinea*.
- The same requirements apply for trees intended for planting of *Fraxinus* L. being moved within the UK, which means that all movements of ash planting material will be suspended pending further surveillance to establish pest free areas.
- Exceptions which apply in the UK on imports of small quantities and local movement of regulated planting material have been suspended as regards trees intended for planting of *Fraxinus* L.

defra
Department for Environment Food and Rural Affairs

Sand Hutton, York
YO41 1LZ, UK

Tel +44 (0)1904 462 000
Fax +44 (0)1904 462 111

E-mail info@fera.gsi.gov.uk
www.defra.gov.uk/fera

Fera is an Executive Agency of Defra

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The legislation also includes measures to facilitate licensed activities on otherwise prohibited organisms (which extend beyond the measures on *Chalara fraxinea*).

The current situation in the UK is that there have been findings of *Chalara fraxinea* on nursery stock of *Fraxinus* L. imported from other Member States and at recently planted sites linked to such stocks. These stocks are being traced and destroyed. In addition, we have also identified sites in the East of England where *Chalara fraxinea* has been identified, or is suspected, which are not linked to recent imports. A containment strategy is currently in place in those areas.

The aim of the legislation is to provide an opportunity to continue surveillance and trace forward activities, to establish the extent of any infection and the prospects for eradication or containment. This evidence will provide the basis for taking decisions on pest free area status, which we hope to do by early 2013. In the meantime, the legislation will ensure that further potentially infected material is not introduced into or circulated within the country, which would exacerbate the situation.

Our understanding is that no pest free areas have been established for *Chalara fraxinea* in either third countries or EU Member States, so no imports or movements of ash planting material will be permitted until such areas are notified.

We look forward to a discussion at the Standing Committee on Plant Health on this issue and we shall, of course, keep the Commission and other Member States informed of developments.

Yours sincerely

Richard McIntosh
Plant Health Policy
+44 1904 465632 (GTN 5129 5632)
richard.mcintosh@fera.gsi.gov.uk

STATUTORY INSTRUMENTS

# 2012 No. 2707

# PLANT HEALTH

## The Plant Health (Forestry) (Amendment) Order 2012

*Made - - - - 1.00 p.m. on 29th October 2012*

*Laid before Parliament 29th October 2012*

*Coming into force in accordance with article 1(2)*

The Forestry Commissioners make this Order in exercise of the powers conferred by sections 2(1) and 3(1) of the Plant Health Act 1967(**a**) and paragraph 1A of Schedule 2 to the European Communities Act 1972(**b**).

This Order makes provision for a purpose mentioned in section 2(2) of the European Communities Act 1972(**c**). It appears to the Forestry Commissioners that it is expedient for the references to Commission Directive 2008/61/EC establishing the conditions under which certain harmful organisms, plants, plant products and other objects listed in Annexes I to V to Council Directive 2000/29/EC may be introduced into or moved within the Community or certain protected zones thereof, for trial or scientific purposes and for work on varietal selections(**d**) to be construed as references to that instrument as amended from time to time.

### Title and commencement

**1.**—(1) This Order may be cited as the Plant Health (Forestry) (Amendment) Order 2012.

(2) This Order comes into force—

(a) subject to sub-paragraph (b), at 6 p.m. on 29th October 2012;

(b) for the purposes of article 2(5), (6) and (7), on 21st November 2012.

### Amendment of the Plant Health (Forestry) Order 2005

**2.**—(1) The Plant Health (Forestry) Order 2005(**e**) is amended as follows.

(2) In article 2(1) (general interpretation), after the definition of "IPPC", insert—

> ""ISPM No 4" means International Standard for Phytosanitary Measures No 4 of November 1995 on the requirements for the establishment of pest-free areas, prepared

(a) 1967 c. 8. Sections 2(1) and 3(1) were amended by the European Communities Act 1972 (c. 68), Schedule 4, paragraph 8. The powers conferred by sections 2 and 3 are conferred on a "competent authority", which is defined in section 1(2), as regards the protection of forest trees and timber from attack by pests, as the Forestry Commissioners.

(b) 1972 c. 68. Paragraph 1A of Schedule 2 was inserted by section 28 of the Legislative and Regulatory Reform Act 2006 (c. 51).

(c) Section 2(2) was amended by the Legislative and Regulatory Reform Act 2006 (c. 51), section 27(1)(a), and the European Union (Amendment) Act 2008 (c. 7), Part 1 of the Schedule.

(d) OJ No L 158, 18.6.2008, p 41.

(e) S.I. 2005/2517, as amended by S.I. 2006/2696, 2008/644, 2009/594, 3020 and 2011/1043.

by the Secretariat of the IPPC established by the Food and Agriculture Organisation of the United Nations(**a**);".

(3) In article 8(2)(d) (exceptions from certain prohibitions and requirements), for "except in bonsai form" substitute "other than seedlings of *Fraxinus* L. and seedlings in bonsai form".

(4) In article 21 (exceptions from certain prohibitions and requirements), after "small quantities of any relevant material", insert "other than trees intended for planting of *Fraxinus* L.".

(5) For article 38 (licences to carry out prohibited activities), substitute—

**"Licences to carry out activities prohibited by this Order**

**38.**—(1) Notwithstanding any of the provisions of this Order, any tree pest or relevant material may be landed, kept, stored, sold, planted, moved or otherwise disposed of in Great Britain and any other thing prohibited by this Order may be done under the authority of a licence granted by the Commissioners—

(a) in exercise of any derogation permitted by the Directive; or

(b) for trial or scientific purposes, or for work on varietal selections, in relation to a domestic quarantine tree pest.

(2) A licence granted under paragraph (1)(b) must be in writing and may be granted—

(a) subject to conditions;

(b) for an indefinite period or a specified period.

(3) In this article, "domestic quarantine tree pest" means a tree pest which is not listed in Annex I or Annex II to the Directive and which is not normally present in, and is likely to be injurious to trees in, Great Britain.".

(6) In the heading of article 39 (licences for trial or scientific purposes and for work on varietal selections), after "varietal selections", insert "permitted by Directive 2008/61/EC".

(7) In article 39—

(a) in paragraphs (1), (2) and (6), for "Directive 95/44/EC" substitute "Directive 2008/61/EC" in each place occurring; and

(b) for paragraph (7)(b), substitute—

"(b) "Directive 2008/61/EC" means Commission Directive 2008/61/EC establishing the conditions under which certain harmful organisms, plants, plant products and other objects listed in Annexes I to V to Council Directive 2000/29/EC may be introduced into or moved within the Community or certain protected zones thereof, for trial or scientific purposes and for work on varietal selections, as amended from time to time.".

(8) In Schedule 1(**b**) (tree pests which shall not be landed in or spread within Great Britain), after item 1 under the heading "Fungi", insert—

"1a *Chalara fraxinea* T. Kowalski, including its teleomorph *Hymenoscyphus pseudoalbidus*, a cause of Ash Dieback".

(9) In Part A (relevant material which may not be landed in or moved within Great Britain if that material is carrying or infected with tree pests) of Schedule 2, after item 2a of the table(**c**), insert—

| | | |
|---|---|---|
| "2b | Trees intended for planting of *Fraxinus* L. | *Chalara fraxinea* T. Kowalski, including its teleomorph *Hymenoscyphus pseudoalbidus*, a cause of Ash Dieback". |

(**a**) Available from the IPPC Secretariat, AGPP-FAO, Viale Delle Terme di Caracalla, 00153, Rome, Italy and at https://www.ippc.int/int.

(**b**) There are amendments to Schedule 1, but none is relevant.

(**c**) Item 2a was inserted by S.I. 2009/594, article 2(4)(a). There is another amendment to Schedule 2, but it is not relevant.

(10) In Part A (relevant material, from third countries, which may only be landed in Great Britain if special requirements are satisfied) of Schedule 4—

(a) in the third column of item 19a of the table(**a**), for "The trees shall be accompanied by an official statement" substitute "Without prejudice to the requirements in item 19b, the trees shall be accompanied by an official statement"; and

(b) after item 19a, insert—

| | | |
|---|---|---|
| "19b | Trees intended for planting of *Fraxinus* L. which originate in a third country | Without prejudice to the requirements in item 19a, the trees shall be accompanied by a phytosanitary certificate which has been issued by the national plant protection organisation of the country from which the trees originate and which includes under the heading "Additional Declaration" an official statement that the trees have been grown throughout their life in an area which has been established and is maintained as an area free from *Chalara fraxinea* T. Kowalski (including its teleomorph *Hymenoscyphus pseudoalbidus*) in accordance with ISPM No 4". |

(11) In Part B (relevant material, from another part of the European Union, which may only be landed in or moved within Great Britain if special requirements are satisfied) of Schedule 4, after item 8 of the table(**b**), insert—

| | | |
|---|---|---|
| "9 | Trees intended for planting of *Fraxinus* L. | The trees shall be accompanied by an official statement that they have been grown throughout their life in an area which has been established and is maintained as an area free from *Chalara fraxinea* T. Kowalski (including its teleomorph *Hymenoscyphus pseudoalbidus*) in accordance with ISPM No 4". |

(12) In Part A (relevant material which may only be landed in Great Britain if accompanied by a phytosanitary certificate) of Schedule 5, after item 1a(**c**), insert—

"**1b.** Seeds intended for planting of *Fraxinus* L.

**1c.** Parts of trees, other than fruits and seeds, of *Fraxinus* L.".

(13) In Part A (relevant material, from another part of the European Union, which may only be landed or moved in Great Britain if accompanied by a plant passport) of Schedule 6(**d**), after paragraph 5, insert—

"**6.** Trees intended for planting of *Fraxinus* L.".

(14) In Part A (relevant material which may only be consigned to another part of the European Union if accompanied by a plant passport) of Schedule 7(**e**), after paragraph 5, insert—

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(**a**) Item 19a was inserted by S.I. 2009/594, article 2(5)(f). There are other amendments to Part A, but none is relevant.
(**b**) Item 8 was inserted by S.I. 2009/594, article 2(6)(c). Part B was amended by S.I. 2011/1043, article 4(1); there are other amendments to that Part, but none is relevant.
(**c**) Item 1a was inserted by S.I. 2008/644, article 2(6). There are other amendments to Schedule 5, but none is relevant.
(**d**) Schedule 6 was amended by S.I. 2011/1043, article 4(1); there are other amendments, but none is relevant.
(**e**) Schedule 7 was amended by S.I. 2011/1043, article 4(1); there are other amendments, but none is relevant.

"**6.** Trees intended for planting of *Fraxinus* L.".

The Official Seal of the Forestry Commissioners

*Tim Rollinson*
A Forestry Commissioner and Director General of the Forestry Commission

29th October 2012

## EXPLANATORY NOTE

*(This note is not part of the Order)*

This Order amends the Plant Health (Forestry) Order 2005 (S.I. 2005/2517) ("the principal Order") to introduce emergency measures to prevent the introduction and spread of *Chalara fraxinea* T. Kowalski, including its teleomorph *Hymenoscyphus pseudoalbidus*, a cause of ash dieback. In particular, the Order:

(a) prohibits the landing in and the movement within Great Britain of *Chalara fraxinea* T. Kowalski (article 2(8));

(b) prohibits the landing in and the movement within Great Britain of trees intended for planting of *Fraxinus* L. which are infected with *Chalara fraxinea* T. Kowalski (article 2(9));

(c) imposes additional requirements on the landing and movement within Great Britain of trees intended for planting of *Fraxinus* L. (article 2(10) to (13)); and

(d) imposes additional requirements on the consignment from Great Britain to other parts of the European Union of trees intended for planting of *Fraxinus* L. (article 2(14)).

The definition of "tree" in article 2(1) of the principal Order includes seeds and other parts of a tree.

This Order also:

(a) implements Commission Directive 2008/61/EC (establishing the conditions under which certain harmful organisms, plants, plant products and other objects listed in Annexes I to V to Council Directive 2000/29/EC may be introduced into or moved within the Community or certain protected zones thereof, for trial or scientific purposes and for work on varietal selections) (OJ No L 158, 18.6.2008, p 41), which replaced Commission Directive 95/44/EC (OJ No L 184, 3.8.1995, p 34) (article 2(7)); and

(b) confers powers on the Forestry Commissioners to grant licences for trial or scientific purposes or for work on varietal selections in relation to certain tree pests (article 2(5)).

Article 2(7) makes the references to Commission Directive 2008/61/EC in the principal Order ambulatory.

The Explanatory Memorandum for this instrument is available alongside the instrument at www.legislation.gov.uk.

STATUTORY RULES OF NORTHERN IRELAND

# 2012 No. 392

# PLANT HEALTH

## The Plant Health (Amendment No.3) Order (Northern Ireland) 2012

| | |
|---|---|
| *Made - - - -* | *26th October2012* |
| *Coming into operation -* | *26th October 2012* |

The Department of Agriculture and Rural Development(**a**) makes the following Order, in exercise of the powers conferred by sections 2, 3(1) and 4(1) of the Plant Health Act (Northern Ireland) 1967(**b**) and the powers conferred by paragraph 1A of Schedule 2 to the European Communities Act 1972(**c**).

This Order makes provision for a purpose mentioned in section 2(2) of the European Communities Act 1972. It appears to the Department that it is expedient for the references to Commission Directive 2008/61/EC (establishing the conditions under which certain harmful organisms, plants, plant products and other objects listed in Annexes I to V to Council Directive 2000/29/EC may be introduced into or moved within the Community or certain protected zones thereof, for trial or scientific purposes and for work or varietal selections) (**d**) to be construed as references to that instrument as amended from time to time.

### Citation and commencement

**1.** This Order may be cited as The Plant Health (Amendment No.3) Order (Northern Ireland) 2012 and comes into operation on 26th October 2012.

### Amendments of the Plant Health Order (Northern Ireland) 2006

**2.** —(1) The Plant Health Order (Northern Ireland) 2006(**e**)is amended in accordance with paragraphs (2) to (14).

(2) In article 2(1)(interpretation) after the definition of "IPPC", insert—

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(**a**) The Department of Agriculture for Northern Ireland was renamed the Department of Agriculture and Rural development by Article 3(4) of the Departments (Northern Ireland) Order 1999 S.I. 1999/283 (N.I.1).

(**b**) 1967 c.68 (N.I.); sections 2 and 4(1) were amended by S.R. & O. (N.I.) 1972 No.351, art. 3 and Sch.2. Section 2(2) was amended by 1979 c.2, s.177(1) and Sch.4, Pt II. Sections 2, 3 and 4(1) were amended by S.I. 1984/702 (N.I.2), Arts. 15(2), 24 and Sch. Section 3B was inserted by S.I. 1984/702 (N.I.2) Art. 15(2). Section 3B(1A) was inserted by 2010 c.10 (N.I.), s.14(2).

(**c**) 1972 c.68.Paragraph 1A of Schedule 2 was inserted by section 28 of the Legislative and Regulatory Reform Act 2006 (c.51)

(**d**) OJ No L 158, 18.6.2008, p 41

(**e**) S.R.2006 No.82. as amended by .S.R. .2006 No.165; S.R. 2006 No.435;S.R. 2007 No.333; S.R.2007 No.483; S.R,. 2008 No. 205; S.R.2008 No.442; S.R. 2008 No.493; S.R. 2009 No. 179; S.R. 2010 No.197;S.R. 2010 No.232; S.R. 2011 No..22; S.R. 2011 No.233; S.R. 2011 No.352; S.R. 2012 No.133 and S.R. 2012 No.241.

" "ISPM No 4" means International Standard for Phytosanitary Measures No 4 of November 1995 on the requirements for the establishment of pest-free areas, prepared by the Secretariat of the IPPC established by the Food and Agriculture Organisationof the United Nations(**a**);".

(3) In article 8(2)(b)(vi) (exceptions from certain prohibitions and requirements) for "except in bonsai form" substitute " other than seedlings of *Fraxinus* L. and seedlings in bonsai form".

(4) In article 22(1) (exceptions from certain prohibitions and requirements), after "small quantities of any relevant material", insert "other than plants of *Fraxinus* L. intended for planting".

(5) For article 39 (licences to carry out prohibited activities), substitute—

" **39**—(1) Notwithstanding any of the provisions of this Order, any tree pest or relevant material may be landed, kept, stored, sold, planted, moved or otherwise disposed of in Northern Ireland and any other thing prohibited by this Order may be done under the authority of a licence, whether general or specific, granted by the Department—

(a) in exercise of any derogation permitted by the Directive 2000/29/EC; or

(b) for trial or scientific purposes, or for work on varietal selections, in relation to a domestic quarantine plant pest.

(2) A licence granted under article 39(1)(b) must be in writing and may be granted—

(a) subject to conditions;

(b) for an indefinite period or a specified period.

(3) In this article ,"domestic quarantine plant pest" means a plant pest not listed in Annex I or Annex II to Directive 2000/29/EC, which is not normally present in Northern Ireland, but is likely to be injurious to plants in Northern Ireland."

(6) In the heading of article 40 (licences for trial or scientific purposes and for work on varietal selections), after "varietal selections", insert "permitted by Directive 2008/61/EC".

(7) In article 40—

(a) in paragraphs (1), (2) and (6), for "Directive 95/44/EC" substitute "Directive 2008/61/EC"in each place occurring; and

(b) for paragraph (7)(b) substitute—

"(b)"Directive 2008/61/EC" means Commission Directive 2008/61/EC establishing the conditions under which certain harmful organisms, plants, plant products and other objects listed in Annexes 1 to V to Council Directive 2000/29/EC may be introduced into or moved within the Community or certain protected zones thereof, for trial or scientific purposes and for work on varietal selections, as amended from time to time".

(8) In Part A of Schedule 1 (plant pests which shall not be landed in or spread within Northern Ireland), after item 1 under the heading "Fungi", insert—

"1a *Chalara fraxinea* T. Kowalski, including its teleomorph *Hymenoscyphus psuedoalbidus* a cause of ash dieback"

(9) In Part A of Schedule 4 (relevant material from third countries which may only be landed in Northern Ireland if special requirements are satisfied), after item 1a (**b**), insert—

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(**a**) Available from IPPC Secretariat, AGPP-FAO. Viale Delle Terme di Caracalla, 00153, Rome, Italy and at https://www.ippc.int/int.

(**b**) Item 1(a) was inserted by SR 2009/179, article2(5)(a)

| | | |
|---|---|---|
| "1b | Plants intended for planting of *Fraxinus* L. | *Chalara fraxinea* T.Kowalski, including its teleomorph *Hymenoscyphus pseudoalbidus*, a cause of ash dieback" |

(10) In Part A of Schedule 4 (relevant material from third countries which may only be landed in Northern Ireland if special requirements are satisfied) —

(a) in the second column of item 8(a) of the table, for "The plants shall be accompanied by an official statement" substitute "Without prejudice to item 8(a), the plants shall be accompanied by an official statement"; and

(b) after item 8a(**a**), insert—

| | | |
|---|---|---|
| "8b | Plants intended for planting of *Fraxinus* L.which originate in a third country | Without prejudice to the requirements in item 8a, the plants must be accompanied by a phytosanitary certificate which has been issued by national plant protection organisation of the country from which the plants originate and which includes under the heading "Additional Declaration" an official statement that the plants have been grown throughout their life in an area which has established and is maintained as an area free from *Chalara fraxinea* T. Kowalski (including its teleomorph *Hymenoscyphus pseudoalbidus*) in accordance with ISPM No.4;" |

(11) In Part B of Schedule 4 (relevant material from another part of the European Community which may only be landed in or moved within Northern Ireland if special requirements are satisfied) after item 8 of the table, insert—

| | | |
|---|---|---|
| "8a | Plants intended for planting of | The plants must be accompanied by |

(**a**) Item 8a was inserted by SR 2009/179 article 2(a) 8a

| | |
|---|---|
| *Fraxinus* L. | an official statement that they have been grown throughout their life in an area which has been established and is maintained as an area free from *Chalara fraxinea* T. Kowalski (including its teleomorph *Hymenoscyphus pseudoalbidus*) in accordance with ISPM No.4." |

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(12) In Part A of Schedule 5 (relevant material which may only be landed in Northern Ireland if accompanied by a phytosanitary certificate), after item 1b(**a**), insert—

"1c. Seeds intended for planting of *Fraxinus* L.

1d. Parts of plants, other than fruits and seeds, of *Fraxinus* L."

(13) In Part A of Schedule 6 (relevant material from Northern Ireland or elsewhere in the European Community which may only be landed in or moved within Northern Ireland if accompanied by a plant passport) after paragraph 5 insert—

"7a. Plants of *Fraxinus* L. intended for planting".

(14)In Part A of Schedule 7 (relevant material which may only be consigned to another part of the European Community if accompanied by a plant passport), after paragraph 5, insert—

"7a. Plants of *Fraxinus* L intended for planting"

Sealed with the Official Seal of the Department of Agriculture and Rural Development on 26th October 2012

L.S.

*Norman Fulton*
A senior officer of the
Department of Agriculture and Rural Development

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(**a**) Item 1b was inserted by S.R. 2008/205 article 3(5)

## EXPLANATORY NOTE

*(This note is not part of the Order)*

This Order amends the Plant Health Order (Northern Ireland) 2006 (S.R. 2006/82) ("the principal Order") to introduce emergency measures to prevent the introduction and spread of *Chalara fraxinea* T. Kowalski, including its teleomorph *Hymenoscyphus pseudoalbidus*, a cause of ash dieback. In particular, the amendments which this Order makes to the principal Order are to:

(a) prohibit the landing in and the movement within Northern Ireland of *Chalara fraxinea* T. Kowalski (article 2(8));

(b) prohibit the landing in and the movement within Northern Ireland of plants intended for planting of *Fraxinus* L. which are infected with *Chalara fraxinea* T. Kowalski (article 2(9));

(c) impose additional requirements on the landing and movement within Northern Ireland of plants intended for planting of *Fraxinus* L. (article 2(10) to (14)); and

(d) impose additional requirements on the consignment from Northern Ireland to other parts of the European Union of plants intended for planting of *Fraxinus* L. (article 2(14)).

The definition of plants in article 2(1) of the principal Order includes fungus, tree or shrub including seeds.

This Order also:

(a) implements Commission Directive 2008/61/EC (establishing the conditions under which certain harmful organisms, plants, plant products and other objects listed in Annexes I to V to Council Directive 2000/29/EC may be introduced into or moved within the Community or certain protected zones thereof, for trial or scientific purposes and for work on varietal selections) (OJ No L 158, 18.6.2008, p 41),which replaced Commission Directive 95/44/EC (OJ No L 184,3.8.1995,p 34)((article 2(7)); and

(b) confers powers on the Department to grant licences for trial or scientific purposes or for work on varietal selections in relation to certain plant pests (article 2(5)).

Article 2(7) makes the references to Commission Directive 2008/61/EC in the principal Order ambulatory.

# Rapid assessment of the need for a detailed Pest Risk Analysis for *Chalara fraxinea*

*Disclaimer: This document provides a rapid assessment of the risks posed by the pest to the UK in order to assist decisions on a response to a new or revised pest threat. It does not constitute a detailed Pest Risk Analysis (PRA) but includes advice on whether it would be helpful to develop such a PRA and, if so, whether the PRA area should be the UK or the EU and whether to use the UK or the EPPO PRA scheme.*

## STAGE 1: INITIATION

### 1. What is the name of the pest?

*Chalara fraxinea* T. Kowalski (anamorph). First described as a new species by Kowalski (2006).

Synonyms:
*Hymenoscyphus albidus* (teleomorph)
*Hymenoscyphus pseudoalbidus* (teleomorph)

Common name of the pest:
The pest does not have a common name, but the disease that it causes is referred to ash dieback or ash decline. It should be noted that this disease is not equivalent to the "ash dieback" syndrome which has previously been investigated in the UK (Hull and Gibbs, 1991).

Taxonomic position:
Kingdom - Fungi; Phylum - Ascomycota; Class - Leotiomycetes; Order - Helotiales; Family - Helotiaceae; Genus – *Chalara* (anamorph), *Hymenoscyphus* (teleomorph)

Special notes on nomenclature or taxonomy:
The species *Chalara fraxinea* was described for the first time in 2006 (Kowalski 2006). A later study concluded that *C. fraxinea* was the anamorph of *Hymenoscyphus albidus,* a species known since the mid 19th century and considered to be non-pathogenic, native and widespread in Europe (Kowalski and Holdenrieder 2009b). However, subsequent molecular investigations concluded that *C. fraxinea* is the anamorph of a new species called *Hymenoscyphus pseudoalbidus* which is closely related to, but distinct from, *H. albidus* (Queloz *et al.* 2010). Evidence from recent research supports the position that *H. pseudoalbidus* (anamorph *Chalara fraxinea*) is the pathogen responsible for the current ash dieback epidemic in Europe.

### 2. What is the pest' s status i n the EC Plant Health Directive (Council Directive 2000/29/EC) and in the lists of EPPO?

Neither *Chalara fraxinea* (anamorph) or *Hymenoscyphus pseudoalbidus* (teleomorph) is listed in the EC Plant Health Directive.

*Chalara fraxinea* is on the EPPO Alert List
http://www.eppo.int/QUARANTINE/Alert_List/fungi/Chalara_fraxinea.htm and EPPO has highlighted the need for studies on the etiology of ash dieback, its geographical distribution and economic impact.

**3. What is the reason for the rapid assessment?**
In the early 1990s severe dieback of ash (*Fraxinus excelsior*) was noted in north-eastern Poland. Trees of all ages were affected and typically displayed small necrotic patches on their stems and branches which later developed into girdling lesions resulting in wilting of leaves, tip dieback of branches and mortality of trees. Similar symptoms were subsequently observed in ash across Poland, both in the lowlands and mountain regions (Kowalski 2001; Kowalski and Łukomska 2005; Przybył 2002). Initially, the cause(s) of the dieback were unclear but a species of *Chalara* was frequently isolated from lesions on symptomatic trees and by the mid-2000s this was recognised as both a new fungal species *Chalara fraxinea* (Kowalski 2006) and as the primary pathogen involved in the causation of ash dieback (Kowalski and Holdenrieder 2009a).

Since the early 2000s, *C. fraxinea* has spread rapidly across continental Europe with ash dieback now reported from the majority of European countries. This assessment was initiated in response to the rapid spread of the pathogen (see Table 1) and because of recent interceptions of ash saplings infected with *C. fraxinea*, both in a number of UK nurseries (Fera records, 2012) and shortly after out-planting (Forest Research records, 2012). The purpose of this Rapid Assessment is to determine the status of the pathogen in the UK, whether or not a full PRA is required, and to indicate future actions which might be taken to prevent ingress of the pathogen or mitigate its effects.

## STAGE 2: RISK ASSESSMENT

**4. What is the pest's present geographical distribution?**
Following the emergence of ash dieback in Poland in the 1990s, ash trees displaying similar symptoms and confirmed as infected by *Chalara fraxinea* have been reported from many countries in northern, western and, most recently southern Europe (Bakys *et al.* 2009; Engesser *et al.*, 2009; Halmschlager and Kirisits 2008; Ioos *et al.* 2009; Kowalski and Holdenrieder 2008; Lygis *et al.* 2005; Ogris *et al.* 2010; Szabo 2009; Talgo *et al.* 2009).

The current known distribution of *Chalara fraxinea* is shown in Table 1.

**Table 1.** Distribution of *Chalara fraxinea*

| | |
|---|---|
| **North America** | No record |
| **Central America** | No record |
| **South America** | No record |
| **Caribbean** | No record |
| **Europe** | Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Italy, Lativia, Lithuania, Netherlands, Norway, Poland, Romania, Russia (Kaliningrad), Slovakia, Slovenia, and Sweden, Switzerland (Schumacher *et al.* 2007; Kowalski and Holdenrieder 2009a; Ogris *et al.* 2009; Szabo 2009; Talgo *et al.* 2009; EPPO 2010a,b; Drenkhan and Hanso 2010; Ogris *et al.* 2010; Skovsgaard *et al.* 2010; Chandelier *et al.* 2011). |
| **Africa** | No record |
| **Asia** | No record |
| **Oceania** | No record |

Trees growing in forests, urban areas and nurseries have all proved to be susceptible (Bakys *et al.* 2009; Halmschlager and Kirisits 2008; Kowalski and Holdenrieder 2008; Schumacher *et al.* 2007; Talgo *et al.* 2009). Following infection, the death of older trees can take several years, and rapid mortality is therefore most frequently observed on young trees (saplings) between 2 and 10 years old.

The most recent reports of *C. fraxinea* affecting *Fraxinus* in Europe come from Italy (2009), Belgium (2009) and the Netherlands (2010).

**5. Is the pest established or transient, or suspected to be establish ed/transient in the UK?**

Since the beginning of 2012 there have been four records of *C. fraxinea* affecting plants of *Fraxinus excelsior* within nurseries in England (Fera records, July 2012). Two of these cases related to material imported directly from nurseries in continental Europe (Netherlands), whilst the other two cases concerned stock supplied by a fifth nursery in England which grows ash on its own premises, but supplements this production with stock imported from continental Europe (Germany). The latter instances of disease were detected by tracing the origin of approximately 450 young ash trees planted in January 2012 around a car park in Leicestershire, of which 50% displayed symptoms of dieback by May 2012 with the causal agent being confirmed as *C. fraxinea* in June 2012 (Forest Research records, June 2012). In Scotland, a further case of dieback in ash planted in the spring of 2009 was investigated during the course of July 2012 and the causal agent confirmed as *C. fraxinea* in early August 2012 (Forest Research records, August 2012).

Despite the detection of ash dieback in out-planted ash saplings, the pest is not currently considered to be established in the natural environment in the UK, since the infected plants are likely to have harboured the disease prior to planting and there is currently no evidence to indicate that transmission to other trees has occurred.

However, the rapid establishment of the pest throughout many European countries including most recently Belgium, France and the Netherlands, the presence of *Fraxinus excelsior* throughout the UK (see Figure 1), and the existence of appropriate growth conditions for the pest suggests in the UK suggest that the potential for establishment is high.

**6. What are the pest's natural and experimental host plants; of these, which are of economic and/or environmental importance in the UK?**

All natural hosts recorded to date have been in the genus *Fraxinus*; they are listed in Table 2.

The ash species considered to be most susceptible to the disease are *F. excelsior*, *F. nigra* and *F. angustifolia*; with *F. ornus* and *F. pennsylvanica* being moderately susceptible. Least affected are *F. americana* and *F. mandschurica* which display leaf wilting but only minor bark necrosis and limited dieback of shoots/ twigs when infected by *C. fraxinea.*

**Table 2.** Natural hosts of *Chalara fraxinea*

| Host | | Family | Symptom/ location for detection | Location | Date sampled | Reference |
|---|---|---|---|---|---|---|
| Scientific name | Common name | | | | | |
| **Natural hosts** | | | | | | |
| *Fraxinus excelsior* | European or common ash | Oleaceae | Leaf wilting, shoot, twig, and branch dieback and bark lesions | Poland | 1990s | Kowalski, 2006 |
| *Fraxinus excelsior* Pendula | Weeping European ash | Oleaceae | Leaf wilting, shoot, twig, and branch dieback and bark lesions | Austria | 2008 | Kirisits *et al.*, 2008 |
| *Fraxinus angustifolia* | Narrow-leafed ash | Oleaceae | Shoot and twig dieback, necrotic lesions and bark cankers | Austria | 2008 | Kirisits *et al.*, 2009a |
| *Fraxinus angustifolia* subsp. *Danubialis* | | Oleaceae | Shoot and twig dieback, necrotic lesions and bark cankers | Austria | 2008 | Kirisits *et al.*, 2008 |
| *Fraxinus ornus* | Manna ash or south European flowering ash | Oleaceae | Wilting leaves, dieback, necrotic lesions of shoots and twigs | Austria | 2009 | Kirisits *et al.*, 2009b |
| *Fraxinus nigra* | Black ash | Oleaceae | Wilting leaves, dieback and necrotic lesions of shoots and twigs, and canopy death | Estonia | 2009 | Drenkhan and Hanso, 2010 |
| *Fraxinus pennsylvanica* | Green ash | Oleaceae | Wilting leaves, dieback, necrotic lesions of shoots and twigs, less twig dieback than black ash | Estonia | 2009 | Drenkhan and Hanso, 2010 |
| *Fraxinus americana* | White ash | Oleaceae | Wilting leaves, minor shoot and twig dieback and bark necrosis | Estonia | 2009 | Drenkhan and Hanso, 2010 |
| *Fraxinus mandschurica* | Manchurian ash | Oleaceae | Wilting leaves, minor shoot and twig dieback and bark necrosis | Estonia | 2009 | Drenkhan and Hanso, 2010 |

Ash dieback disease is expressed through a wide range of symptoms (Kirisits *et al.* 2009; Kowalski 2006; Kräutler and Kirisits 2012), the most conspicuous being necrotic lesions and cankers in the bark which are associated with marked discoloration of the underlying sapwood. Developing lesions frequently girdle affected parts of the branching structure resulting in dieback of shoots, twigs, branches and smaller stems. The pathogen also causes symptoms on leaves of *F. excelsior* and other ash species (Bakys *et al.* 2009; Kirisits *et al.* 2009, 2010a; Ogris *et al.* 2009; Drenkhan and Hanso 2010; Kräutler and Kirisits 2012) including the formation of necrotic patches on leaflets, necrosis of the leaf veins and formation of lesions on the rachises. Leaf infections are thought to play a key role in the disease cycle, acting as both an infection court from which the fungus grows into shoots and twigs and, after they are shed, in the production of inoculum by supporting the growth of the fruiting bodies of *Hymenoscyphus pseudoalbidus* (Kirisits and Cech 2009; Kirisits *et al.* 2009, 2010b; Schumacher 2011; Kräutler and Kirisits 2012).

The origins of *Chalara fraxinea* remain uncertain. It has been suggested that the species could be a previously undetected component of a native community of microfungi on *F. excelsior*, the pathogenicity of which has been triggered by changing environmental conditions (Bakys *et al.* 2009). Evidence for this thesis comes from a retrospective analysis that has shown that the pest has apparently been present in Switzerland for at least 30 years but only recently become damaging (Queloz *et al.* 2010). In contrast, others consider it an invasive species gradually spreading over a new geographic area, its origin and mode of introduction unknown.

Naturally susceptible economically and / or environmentally important hosts are present in the UK. They include:

- *Fraxinus excelsior*, in Britain this was the third most commonly recorded broadleaved species in the most recent Census of Woodlands and Trees, and is the second most widely planted broadleaved tree (see http://www.forestry.gov.uk/website/forstats2011.nsf/LUContents/BF32BD6C9B18DD3680257360004FE23E). The distribution of the species is stable throughout the UK and in northern Scotland it is considered native on limestone (see Figure 1). It tends to be intermediate between a pioneer species and a permanent forest component and usually occurs in groups within mixed broadleaf woodland; pure stands or scattered trees are less common. It is also a dominant species in the young and juvenile stages of forests.

Figure 1: Shaded areas indicate presence of *Fraxinus excelsior* in 10km squares over the UK (Figure taken from the Botanical society of the British Isles Maps Scheme – [www.bsbimaps.org.uk])

- Other ash species and cultivars such as *F. excelsior* 'Pendula' and *F. angustifolia* are also planted as ornamental species (see http://apps.rhs.org.uk/rhsplantfinder/plantfinder2.asp?crit=fraxinus&Genus=Fraxinus) but their distribution is very limited compared with *F. excelsior* and mostly confined to landscaped environments and gardens.

**7. If the pest needs a vector, is it present in the UK?**

*Chalara fraxinea* does not have a known vector or associated organisms. Although other *Chalara* species do have known insect vectors, there are currently no reports of an insect vector for *C. fraxinea.*

**8. What are the pathways on which the pest is likely to move and how likely is the pest to enter the UK?**

The infection biology is not fully understood but evidence that the majority of infections are initiated on leaves and shoots indicates an aerial mode of dispersal. To date, attempts to germinate the conidia (asexual spores) produced by *Chalara fraxinea* or to induce disease by introducing them into young ash plants have proved unsuccessful, leading to the suggestion that they play no role in the process of infection (Kirisits and Cech 2009). In addition, the conidia are produced in mucilaginous droplets, making them ill-adapted to aerial dispersal in the absence of a vector and they have rarely been observed on naturally infected material (Kowalski and Holdenrieder 2009b).

Ascospores produced by the teleomorph stage of the pathogen (*Hymenoscyphus pseudoalbidus*) are known to be germinable and are likely to be wind dispersed, having been trapped in high numbers from the air within stands of diseased ash (Kirisits and Cech 2009); Timmermann *et al.* 2011). The apothecia which release the ascospores are produced seasonally and have been observed in the field between June and October in continental Europe, occurring mainly on fallen ash rachises in the fallen litter layer from the previous year, but also occasionally on dead ash shoots. The distance over which ascospores can disperse has not been determined with certainty but monitoring of the disease front within an area of Norway where no artificial introductions of the pest are believed to have occurred has indicated a potential dispersal rate of 20 to 30 km per year (Solheim *et al.* 2011).

Movement of contaminated soil, plants for planting or wood are all considered possible pathways for long-distance transmission of the disease (EPPO, 2010b; Prokrym and Neeley 2009), with 'plants for planting' of known natural hosts (e.g. *Fraxinus excelsior*) from countries where *C. fraxinea* is known to occur likely to be the major pathway for entry. No information is available on the ability of the pest to persist in soil; other pests with a *Chalara* anamorph have been shown to be transmissible via soil or infected wood but these species are able to form resilient, long-lived spores which do not appear to be produced by *C. fraxinea.*

There are currently no specific phytosanitary requirements for *C. fraxinea* in the EC Plant Health Directive (Anon., 2000) that would directly influence further entry of the pathogen into the UK or movement within the UK. Indeed, during the period 2003-2011 when *C. fraxinea* was reported to be present in at least some of the exporting EU Members States, some 5.2 million ash plants were imported into the UK (see Table 3).

**Table 3.** Number of UK imported ash plants (bare rooted) from EU Member States registered on the Forest Reproductive Material database[1]

| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Belgium | 30,000 | 7,800 | 11,000 | 400 | 0 | 15,000 | 47,200 | 32,500 | 136,000 | 279,900 |
| France | 155,125 | 7,000 | 400 | 22,200 | 0 | 0 | 700 | 0 | 1,000 | 186,425 |
| Germany | 553,600 | 500,700 | 81,000 | 196,500 | 374,500 | 396,750 | 0 | 400,400 | 250,750 | 2,754,200 |
| Hungary | 0 | 0 | 0 | 0 | 0 | 0 | 4,625 | 0 | 0 | 4,625 |
| Ireland | 0 | 0 | 0 | 27,000 | 180,600 | 98,600 | 162,825 | 500 | 0 | 469,525 |
| Netherlands | 0 | 0 | 196,500 | 323,300 | 205,050 | 461,607 | 141,100 | 50,100 | 172,375 | 1,550,032 |
| **Total** | **738,725** | **515,500** | **288,900** | **569,400** | **760,150** | **971,957** | **356,450** | **483,500** | **560,125** | **5,244,707** |

Therefore, as at least two incursions of the pest into the UK have already occurred from another country where the disease is present, and as large numbers of ash plants have been/continue to be imported into the UK from EU Member States where the pathogen is present, further entry is very likely via host plants for planting. The potential for spread *via* wood or soil is more uncertain but rated as moderately likely.

| | Very unlikely | Unlikely | Moderately likely | Likely | Very likely |
|---|---|---|---|---|---|
| Host plants for planting: | | | | | X |
| Timber / wood | | | X | | |
| Soil | | | X | | |

**9. How likely is the pest to establish outdoors or under protection in the UK?**
Establishment under protection is unlikely because *C. fraxinea* is not known to affect protected crops, although it has been recorded infecting nursery plants in several countries in Europe. Moreover, saplings (2-10 years old) of *F. excelsior* are readily infected and killed by the pathogen. Based upon the recent detections of *C. fraxinea*, the pest has not been found as an established pest outdoors in the UK, although it has been found on recently planted ash saplings that most probably became infected prior to planting. The number of affected plants found and the symptom development following planting outdoors, as well as the prevalence of the pest elsewhere in northern Europe suggests that the pest is very likely to establish outdoors in the UK.

| | Very Unlikely | Unlikely | Moderately likely | Likely | Very likely |
|---|---|---|---|---|---|
| Outdoors: | | | | | X |
| Under protection: | | X | | | |

**10. How quickly could the pest spread in the UK?**
Based on experience elsewhere in Europe, the pest could spread rapidly if introduced into the UK.

[1] Grey shading in the table refers to the year *Chalara fraxinea* first reported and then subsequently regarded as present in the exporting country. In most cases, symptoms were apparent on ash in the countryside before formal confirmation was made.

Natural spread could be rapid if aerial transmission *via* ascospores were to occur; a dispersal rate of 20-30 km per year by this means has been inferred from field observations but cannot be regarded as proven beyond doubt. In addition, distribution *via* planting stock could lead to rapid spread and *C. fraxinea* has been detected in nursery plants in several European countries including the UK (EPPO 2010c; Schumacher *et al.* 2010; Kirisits *et al.* 2012; Fera records, 2012). If diseased material passes through UK nurseries undetected, the pest could become widespread in a relatively short space of time through the movement of infected planting material. The recent interception of infected *Fraxinus* plants in a nursery in the south of England which had been imported from a nursery in the Netherlands (Fera records, 2012) highlights the potential for plants for planting to act as a pathway both for entry into the UK as well as spread within the UK.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Natural spread: | Very slowly | | Slowly | | Moderately | | Quickly | X | Very quickly | |
| In trade: | Very slowly | | Slowly | | Moderately | | Quickly | | Very quickly | X |

**11. What is the area endangered by the pest?**

The pest could potentially become established throughout the ranges of its known hosts (principally *Fraxinus excelsior*) which are found in woodlands, hedgerows and roadsides, parklands and gardens. The UK distribution of *F. excelsior* is shown in Figure 1. To date, no attempt has been made to map the areas of Europe which are likely to be most climatically favourable for *C. fraxinea*, but the pest been found affecting ash trees in a wide range of environments in many European countries (e.g. Poland, Lithuania, and Denmark). Since the pest has become established at higher and lower latitudes than those encompassed by the UK much of this country is likely to have a suitable climate for *C. fraxinea*. The closely related species *Hymenoscyphus albidus*, which is likely to have a similar ecological amplitude, is widely distributed in the UK (see Figure 2) further suggesting that the climatic conditions are unlikely to limit the potential range of the pest.

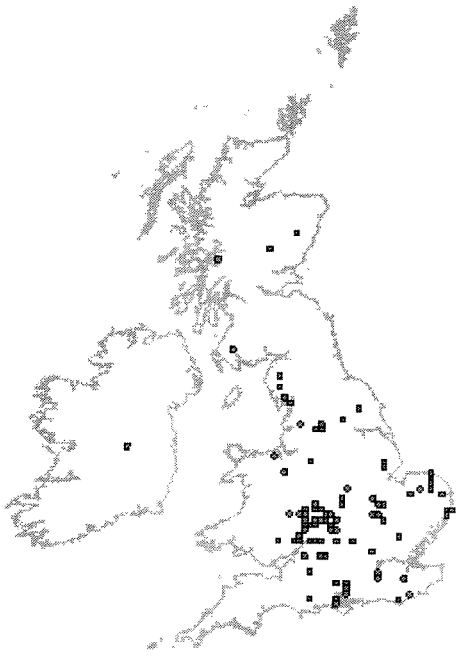

Figure 2: Red squares indicate presence of *Hymenoscyphus albidus* in10km squares over the UK (Figure taken from the National Biodiversity Network - http://www.searchnbn.net/gridMap/gridMap.jsp?allDs=1&srchSpKey=NBNSYS0000017416

**12. What is the pest's economic, environmental or social impact w ithin its existing distribution?**

The economic impact of ash dieback in Europe has not been quantified over its current range, but European ash is a native tree grown for forestry and amenity purposes (EPPO, 2008) and the large-scale dieback throughout the area is considered to be causing very significant impacts particularly in countries where the disease was first recorded in the 1990s. For example, eighty percent of ash stands in Poland are now thought to be affected (Lingren 2008). By 2002, over 30,000 ha of *F. excelsior* stands in Lithuania were affected by ash dieback, resulting in mortality of approximately 60% of all ash stands country-wide (Vasaitis and Lygis 2008; Bakys *et al.* 2009). This raises concern for *Fraxinus* growing in forests and woodlands as well as that grown in nurseries and landscape environments.

| | Very small | | Small | | Medium | | Large | | Very large | |
|---|---|---|---|---|---|---|---|---|---|---|
| Economic: | | | | | | | | X | | |
| Environmental: | | | | | | | | | | X |
| Social: | | | | | | X | | | | |

**13. What is the pest's potential to cause economic, environmental or social impacts in the UK?**

*Fraxinus excelsior* is one of the most commonly recorded and planted broadleaved species in Britain (see section 6 and also http://www.forestry.gov.uk/website/forstats2011.nsf/LUContents/BF32BD6C9B18DD3680257360004FE23E).

It tends to be intermediate between a pioneer species and a permanent forest component, occurring in groups within mixed broadleaf woodland, with pure stands or scattered trees less common. It is also a dominant species in the young and juvenile stages of forests. On this basis the economic, environmental and social impacts are estimated at medium to large.

| | Very small | | Small | | Medium | | Large | | Very large | |
|---|---|---|---|---|---|---|---|---|---|---|
| Economic: | | | | | | X | | | | |
| Environmental: | | | | | | | | X | | |
| Social: | | | | | | X | | | | |

**14. What is the pest's potential as a vector of plant pathogens?**

*Chalara fraxinea* is a plant pathogen with no capacity to act as a vector of other pathogens.

## STAGE 3: PEST RISK MANAGEMENT

### 15. What are the risk management options for the UK?

*Action for keeping the pest out of the UK*
Current records suggest that *C. fraxinea* is not yet established in the UK, although it has now been detected in recently planted trees outdoors. The origins of the pest are uncertain but it is now widespread throughout much of Europe and the main pathway for entry into the UK is likely to be *via* plants for planting from this region. To manage the risk of introductions, proportionate actions would include:

- Inspection and testing in nurseries to detect any entry of infected nursery plants.
- Susceptible species for import into the UK only to come from regions showing freedom from the pest and with effective plant passporting in place.

*Options for control if the pest became established*
There is no information currently available to gauge the effectiveness of control methods used in parts of Europe to combat *Chalara fraxinea*, but a number of measures are likely to have value:

- Most native trees have been found to be highly susceptible, but additive genetic diversity in natural *F. excelsior* populations could confer the species with the ability to recover so there is potential for artificial selection and breeding to improve species resistance (Kjær *et al.* 2012; Kirisits and Freinschlag 2012).
- Establishment of quarantine and observation zones, as well as restrictions on the movement of *Fraxinus excelsior* plants for planting, similar to those specified by the Norwegian Food Safety Authority (2008) for containment.
- Preventive measures such as sanitation, cultural methods and chemical control are important to prevent infection from *Chalara* spp. (Kile1993).
- Sanitation of equipment used near infected trees may reduce spread of the fungus (Kile, 1993). Regulations in Norway include disinfection of all pruning or mowing machinery prior to movement to an area which is free of the disease (Norwegian Food Safety Authority, 2008).
- Measures taken to prevent cross infection by pruning, and also suitable measures put in place for the destruction of ash plants that show symptoms of dieback as a precaution against non-diagnosed infection.
- Chemical control methods have had some success with other *Chalara* spp. (e.g. CABI 2007; Labuschagne and Kotzé 1996), and may be effective against *C. fraxinea* but none are currently tested and available for use in UK forestry.
- Effectiveness of wood treatments such as heat treatment and methyl bromide against this pest are unknown but can be effective against some fungal pathogens.

### 16. Summary and conclusion of rapid assessment.

This rapid assessment shows:

*Potential for entry is*: Very high especially in association with plants for planting, with a moderate risk associated with movement of soil and timber.

*Potential for establishment is*: Very high

*Economic, environmental and social impacts are expected to be:* Medium to large

*Endangered area:* All of the UK

*Risk management:*

Practices are available to manage the risk (see 15) but most require evaluation to measure their effectiveness in relation to *C. fraxinea*.

**17. Is there a need for a more detailed PRA?**

Yes [X] No [ ]

**If yes, select the PRA area (UK or EU) and the PRA scheme (UK or EPPO) to be used.**

PRA area: UK or EU? [UK] PRA scheme: UK or EPPO? [UK]

**18. Given the information assembled within the timescale required, is statutory action considered appropriate/justified?**

As the pest is currently not established in the UK statutory action can be considered justified.

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**Version no.:** 1.2 **Author:** Joan Webber[1], Steven Hendry[2]

[1]Forest Research, Alice Holt Lodge, Farnham, Surrey, GU10 4LH

[2]Forest Research, Northern Research Station, Roslin, Midlothian EH25 9SY