

Rapid assessment of the need for a detailed Pest Risk Analysis for *Musotima nitidalis*

Disclaimer: This document provides a rapid assessment of the risks posed by the pest to the UK in order to assist Risk Managers decide 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?

Musotima nitidalis (Walker, [1866]) Crambidae: Musotiminae

Synonym: *Diathaustra timaralis*

No common English name: this is a small moth that feeds on ferns

2. What is the pest's status in the EC Plant Health Directive (Council Directive 2000/29/EC¹) and in the lists of EPPO²?

The pest is not listed in the EC Plant Health Directive and is not recommended for regulation as a quarantine pest by EPPO, nor is it on the EPPO Alert List.

3. What is the reason for the rapid assessment?

This moth is a pest of ferns. It was first trapped in the UK in Hampshire by amateur moth recorders in 2009 and it is likely that it entered the UK in association with tree ferns. After the first finding it was agreed that no action should be taken, but to keep a look out for further interceptions. This rapid assessment was initiated following the second finding, in October 2011 in West Sussex, to help inform the decision on whether statutory action is justified against future interceptions.

STAGE 2: RISK ASSESSMENT

4. What is the pest's present geographical distribution?

Widespread in Australia (New South Wales, Queensland, South Australia, Tasmania, Victoria and Western Australia) and common in New Zealand forests. Also found on many of New Zealand's smaller islands (north and south) (Antipodes island, Auckland island, Campbell island, Enderby island, Red Mercury island) (Chilton, 1909; Patrick, 1994; Johannesson, 1971, Herbison-Evans & Crossley, 2011) It has been trapped on two occasions in the south of the UK.

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

The first UK finding of this pest occurred in November 2009, when a specimen was captured on a moth trap at a nature reserve near Bournemouth Airport. Subsequently a second specimen was trapped on 26th October 2011 in Crawley Down, West Sussex. Both specimens found were adults, and both were trapped on light traps set up by amateur moth recorders. Although these may be transient, it is also possible that this moth has naturalised in small numbers.

¹ http://europa.eu.int/eur-lex/en/consleg/pdf/2000/en_2000L0029_do_001.pdf

² <http://www.eppo.org/QUARANTINE/quarantine.htm>

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

Known hosts are: *Adiantum* spp. (maidenhair ferns): inc. *Adiantum aethiopicum*; *Histiopteris incisia*; *Pteridium esculentum* and possibly other ferns of the family Pteridaceae.

In the UK *Pteridium aquilinum* (bracken) and *Adiantum adiantum-nigrum* (black spleenwort) are widespread (BSBI, 2011) and are potential hosts. Despite problems with bracken as a weed, it is an important habitat in the UK.

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

No vector is required.

8. What are the pathways on which the pest is likely to move and how likely is the pest to enter the UK? (By pathway):

Pathway 1 - Plants for planting: it is thought that *Musotima nitidalis* entered the UK in association with tree ferns from Australasia. Given that only two specimens have been found it is not thought that entry has occurred frequently, however, as trade in tree ferns was unregulated for 10 years or more, it is possible that entry occurred during this time.

Plants for planting:	Very unlikely		Unlikely	✓	Moderately likely		Likely		Very likely	
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9. How likely is the pest to establish outdoors or under protection in the UK?

Evidence from trapping of the moth suggests that either transients are surviving or it may already be naturalised outdoors in the southern part of the UK. Its presence in southeastern Australia and southern New Zealand, areas with a similar climate to southern UK, suggests that the UK climate is suitable for establishment.

Old reports from New Zealand and Australia suggest that *M. nitidalis* is very likely to survive under protection (Meyrick 1884, Meyrick, 1912).

Outdoors:	Very unlikely		Unlikely		Moderately likely		Likely		Very likely	✓
Under protection:	Very unlikely		Unlikely		Moderately likely		Likely		Very likely	✓

10. How quickly could the pest spread in the UK?

There is no information on natural spread of this species, but given widespread potential hosts it is expected that natural spread would be moderate.

Spread in trade would be expected to be much faster.

Natural spread:	Very slowly		Slowly		Moderate pace	✓	Quickly		Very quickly	
In trade:	Very slowly		Slowly		Moderate pace		Quickly	✓	Very quickly	

11. What is the area endangered by the pest?

Specialist importers of ferns and individual specimen plants. Unknown effect on native flora, but based on the impact in native area, this is likely to be small.

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

It has been noted (Meyrick, 1884 and Meyrick, 1912) that *M. nitidalis* is sometimes very destructive to ferns in greenhouses. However, there have been no records of impact since this time. No impacts have been reported outdoors.

Very small Small Medium Large Very large

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

It is unknown what effect this pest may have on native Pteridaceae as it has not previously been recorded on the native species in the UK. However, impact is thought to be small based on the paucity of records in its native Australasia. If the pest has entered the UK on tree ferns it may spread to other ferns at specialist growers, but again impact under protection is likely to be limited.

Very small Small Medium Large Very large

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

Musotima nitidalis is not a plant pathogen vector.

STAGE 3: PEST RISK MANAGEMENT

15. What are the risk management options for the UK? (Consider exclusion, eradication, containment, and non-statutory controls; under protection and/or outdoors).

It is likely that *M. nitidalis* entered the UK in association with tree ferns imported from Australasia. Due to the level of non-native organisms that may be associated with this trade, tree ferns are treated prior to export. However, the trade was largely unregulated for 10 years or more and this may have been when this particular pest entered. It is also possible that current phytosanitary treatments may be less effective from those used in the past, especially if methyl bromide fumigation is not being carried out, in which case these moths could be transients. Exclusion, eradication and containment of this pest seem inappropriate given the small likelihood of economic impact, and also because any such measures are unlikely to be completely successful given the possibility of naturalisation and the fact that there may be undetected colonies present elsewhere. It is a distinctive moth and reports from amateur entomologists are likely to provide an indication of any further increases in population density and distribution.

16. Summary and conclusion of rapid assessment.

This rapid assessment shows:

Risk of entry – Unlikely. Probably entered UK on tree ferns from Australasia before trade was regulated.

Risk of establishment – Very Likely outside and under protection

Economic impact – Small. Some uncertainty over potential impact on native species, but no records of damage and none reported in native region.

Endangered area – Specialist importers of ferns and individual specimen plants. Unknown effect on native flora

Risk management - Exclusion, eradication and containment of this pest seem inappropriate given the small likelihood of impact and the possibility of naturalisation.

Musotima nitidalis: Fernshaw Reserve, Vic, June 2010.
 Photo from: http://lifeunseen.com/index2_item_4890.php
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17. Is there a need for a detailed PRA? If yes, select the PRA area (UK or EU) and the PRA scheme (UK or EPPO) to be used. (for PH Risk Management Work stream to decide) ✓ (put tick in box)

Given that *M. nitidalis* is already likely to be naturalised and probably entered on a pathway which has since been regulated, further action and a more detailed PRA are not required.

No	<input checked="" type="checkbox"/>
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Yes	<input type="checkbox"/>	PRA area: UK or EU	<input type="checkbox"/>	PRA scheme: UK or EPPO	<input type="checkbox"/>
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18. Given the information assembled within the time scale required, is statutory action considered appropriate / justified?

Yes
 Statutory action

No
 Statutory action

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