National Onion Industry Biosecurity Plan

THREAT IDENTIFICATION, PEST RISK REVIEWS AND INCURSION MANAGEMENT FUNDING ARRANGEMENTS

For more information on Plant Health Australia

Location: Suite 5, FECCA House
4 Phipps Close
DEAKIN ACT 2600

Phone: +61 2 6260 4322

Fax: +61 2 6260 4321

E-mail: admin@phau.com.au

Visit our web site: www.planthealthaustralia.com.au

An electronic copy of this plan is available from the web site listed above.

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

Acronyms

AS/NZS	Australian Standard/New Zealand Standard
AQIS	Australian Quarantine and Inspection Service
DTQ	Disease Threat Questionnaire
EPP	Emergency Plant Pest
EPPRD	Emergency Plant Pest Response Deed
IBG	Industry Biosecurity Group
IBP	Industry Biosecurity Plan
OA	Onions Australia
PHA	Plant Health Australia
PTQ	Pest Threat Questionnaire
TST	Threat Summary Table

Note: The definition of a pest as adopted by the International Plant Protection Convention (any species, strain or biotype of plant, animal, or pathogenic agent, injurious to plants or plant products) is used throughout this plan.

Introduction

This section is designed to help identify high risk pest threats to the onion industry, and to present a framework for assessing the potential economic, social, and environmental impacts associated with each threat. A consistent approach to threat identification and risk assessment will provide a strong base for future risk management activities by facilitating a more coordinated and efficient approach.

Emergency plant pests are defined as those that meet one or more of the following criteria:

a) It is a known exotic plant pest, the economic consequences of an incident of which would be economically or otherwise harmful for Australia, and for which it is considered to be in the regional or national interest to be free of the plant pest.

b) It is a variant form of an established plant pest which can be distinguished by appropriate investigative and diagnostic methods, and which if established in Australia, would have a regional or national impact.

c) It is a serious plant pest of unknown or uncertain origin which may, on the evidence available at the time, be an entirely new plant pest, and which if established in Australia would have an adverse economic impact regionally and or nationally.

d) It is a plant pest of potential economic importance to the area endangered thereby and not yet present there or widely distributed and being officially controlled, but is occurring in such a fulminant outbreak form, that an emergency response is required to ensure that there is not either a large scale epidemic of regional or national significance or serious loss of market access.

By identifying key threats a pre-emptive approach may be taken to risk management. Under this approach mechanisms can be put into place to increase our response effectiveness if pest incursions occur.

One such mechanism is the Emergency Plant Pest Response Deed (EPPRD) that has been negotiated between PHA's government and industry members. Once finalised, the Deed will ensure reliable and agreed funding arrangements are in place in advance of emergency plant pest incursions, and assist in the response to emergency plant pest incursions, particularly those identified as key threats.

Identification of high risk pests will also assist in the implementation of effective grower and community awareness campaigns, targeted biosecurity education and training programs for growers and diagnosticians, and development of pest-specific incursion response plans.

Threat identification

Information on biosecurity threats to the onion industry described in this document came from a combination of:

- past records
- existing industry protection plans
- relevant experience
- industry practice and experience
- relevant published literature
- local industry and overseas research

- economic models
- specialist and expert judgment.

At this time, only invertebrate pests (insects/mites) and pathogens (disease causing organisms) have been identified, although the issue of weeds may be revisited through reviews of this plan.

Ranking pest threats

Key questions required for ranking the importance of pests include the following:

- What are the probabilities of entry into Australia, establishment, and spread, for each pest?
- What are the likely impacts of the pest on cost of production, overall productivity, and market access?
- How difficult is each organism to identify and control and/or eradicate?

The Threat Summary Tables (TSTs) presented at Appendix 1 list potential exotic pest threats to the onion industry and provide summarised information on entry, establishment and spread potential, consequences of establishment, and eradication potential (where available).

The most serious threats from the TSTs were identified through a process of qualitative risk assessment and are listed in Table 1 and **Error! Reference source not found.**. Threats listed in Table 1 are exotic pests, not currently found in Australia. Specific contingency plans are being developed for these threats, and will be made available from PHA. Organisms listed in **Error! Reference source not found.** have already entered Australia and are currently under active control.

Emergency plant pest priority list

Table 1: *Emergency plant pest priority list*

This table provides the top ranked pest threats to the onion industry (see end of Table 2 for legend). Pests are grouped by life form and listed alphabetically by scientific name. Additional pest-specific information is provided in the Threat Summary Tables in Appendix 1. Assessments may change given more detailed research, and the priority list will be reviewed at least annually.

Common name	Life form	Scientific name	Primary host	Plant part affected	Comments (quarantine risk) and targeted survey options	Entry potential	Establishment potential	Spread potential	Economic impact	Risk
Onion fly, Onion maggot	Fly	*Delia antiqua*	Onion, shallot, Japanese bunching onion or Welsh onion, leek, garlic and chives	Bulb, foliage, root, seedling	A number of interceptions at border on garlic. Distribution: Europe, Canada, Asia, UK, USA	High – Larvae imported inside bulbs	Medium	High	High – particularly for crops establishing.	**High**
Bean fly, Bean seed maggot, Potato maggot, Turnip maggot	Fly	*Delia florilega*	Onion, leek and garlic	Bulb, seedling	Distribution: North and South America, Canada, Europe, UK, former USSR. A number of detections made at the border.	High	Medium	High	High - High impact on seeds and seedlings	**High**
Lesser bulb fly, Onion bulb fly, Small narcissus fly.	Fly	*Eumerus strigatus*	Onion and garlic	Bulb	Distribution: China, Europe, Japan, NZ, Romania, UK, former USSR.	High - detections already made at border	High - suitable hosts are present	High - Adults capable of strong flight	High – pest of onions grown from seed	**High**
American leafminer, Cabbage leaf miner, Serpentine leaf miner, Tomato leafminer, Vegetable leafminer	Fly	*Liriomyza sativae*	*Allium* sp.	Foliage	Distribution: Central America, Asia, North America, New Zealand, UK, Africa, Middle East, Samoa.	High	High	Medium - not strong flyers	High	**High**

Common name	Life form	Scientific name	Primary host	Plant part affected	Comments (quarantine risk) and targeted survey options	Entry potential	Establishment potential	Spread potential	Economic impact	Risk
Allium leaf miner	Fly	*Phytomyza gymnostoma*	Onions, leek	Stalks and bulbs	Turkey, Turkmenistan, Austria, Croatia, Czech Republic, Denmark, France, Germany, Hungary, Italy, Poland, Serbia and Montenegro, Slovakia, Slovenia, Spain, Switzerland, Ukraine, UK	High	Medium	High	High	**High**
Bulb mite	Mite	*Rhizoglyphus setosus*	Onion, leek and garlic	Bulb	Distribution: China (Taiwan), Cuba and France	High	High	Medium	High	**High**
Bulb mite	Mite	*Rhizoglyphus callae*	Onion, shallot and garlic	Bulb	Distribution: Argentina, Chile, Egypt, Taiwan, Turkey, former USSR	High	High	Medium	High	**High**

Common name	Life form	Scientific name	Primary host	Plant part affected	Comments (quarantine risk) and targeted survey options	Entry potential	Establishment potential	Spread potential	Economic impact	Risk
Leaf blight, Leaf rot/blast, Neck rot	Fun	*Botryotinia squamosa*	Onion, Japanese bunching onion, Welsh onion, leek, garlic	Leaf, seed	Seed borne - China, Japan, Korea, Europe, Mauritius, Americas, New Caledonia, New Zealand. Also recorded to have been picked up by Quarantine Tasmania in garlic shoots from China.	High – Detected at border on several occasions	Medium	High	High	**High**
Puccinia spp.	Fun	*Puccinia* spp. *Puccinia allii , Puccinia allii-cepulae , Puccinia alliorum, Puccinia cylodontis, Puccinia mixta, Puccinia permixta, Puccinia porri, Puccinia schisma, Puccinia sessali.*	Alliums		20 species of *Puccinia* effect Alliums, of which 8 effect crop species. Uncertainty regarding rust species presence in Australia and those of significance is a major concern.[1]	High	High	High	Extreme	**Extreme**

[1] It is not clear which *Allium* infecting rusts are present in Australia, but it would be devastating to repeat the Californian experience (in the late 1990's the Californian garlic industry experienced a 90% decline in production due to an epidemic of rust disease) by having a new rust race introduced. There is an urgent need of a study to clarify which races of *Allium* rusts are present in Australia. The findings of these studies should be used to formulate Quarantine policy. Further work on this disease complex be undertaken (per. comm. Dean Metcalf, 2007).

Common name	Life form	Scientific name	Primary host	Plant part affected	Comments (quarantine risk) and targeted survey options	Entry potential	Establishment potential	Spread potential	Economic impact	Risk
Onion smut	Fun	*Urocystis cepulae*	Onion, spring onion, shallot, leek, garlic, crow garlic	Whole plant, effects plants while seedlings	Detected from time to time in South Australia through annual inspections – last detection in 2002. Upon detection it is eradicated.	High – Quarantine controls in place to prevent entry, however has entered Australia before	High – Has already shown to be able to established in SA, and is adaptable to proliferating in a diverse array of climate	High – Has the potential to spread to all productio n areas	High – Can have significant impacts on seedlings and reduce yield	**High**

Note: See end of following table for legend

Life Form Legend			
BAC	Bacteria	Fly	Flies and Midges (DIPTERA)
BTLE	Beetles (weevils etc.) (COLEOPTERA)	Slug	Slugs (GASTROPODA)
BUG	Stink bugs, aphids, mealybugs, scale, whiteflies and hoppers (HEMIPTERA)	Snai	Snails (GASTROPODA)
BUT	Butterflies (LEPIDOPTERA)	Thri	Thrips (THYSANOPTERA)
FUN	Fungus	Mite	Mites e.g. spider and gall mites (ACARI)
NEM	Nematode	Ewig	Earwigs (DERMAPTERA)
PLO	Phytoplasma like organism	Moth	Butterflies and moths (LEPIDOPTERA)
VIR	Virus	Locu	Locusts and grasshoppers (ORTHOPTERA)

Entry Potential	
Negligible	probability of entry is extremely low given the combination of factors including the distribution of the pest source, management practices applied, low probability of pest survival in transit.
Low	probability of entry is low, but clearly possible given the expected combination of factors described above.
Medium	pest entry is likely given the combination of factors described above.
High	pest entry is very likely or certain given the combination of factors described above.
Unknown	pest entry potential is unknown or very little of value is known.

Establishment Potential	
Negligible	the pest has no potential to survive and become established.
Low	the pest has the potential to survive and become established in approximately one third or less of the range of hosts. Could have a low probability of contact with susceptible hosts.
Medium	the pest has the potential to survive and become established in between approximately one-third and two thirds of the range of hosts.
High	the pest has potential to survive and become established throughout most or all of the range of hosts. Distribution is not limited by environmental conditions that prevail in Australia. Based upon its current world distribution, and known conditions of survival, it is likely to survive in Australia wherever major hosts are grown.
Unknown	the establishment potential of the pest is unknown or very little of value is known.

Spread Potential	
Negligible	the pest has no potential for natural spread.
Low	the pest has potential for natural spread locally.
Medium	the pest has potential for natural spread throughout a physiographic region.
High	the pest has potential for natural spread to all production areas.
Unknown	spread potential is unknown or very little of value is known.

Economic Impact	
Negligible	there is no impact on yield, host longevity, production costs or storage.
Low	there is minor impact on standing crop and little effect on stored product.
Medium	there is moderate impact on crops, but host mortality is rare, storage losses may occur.
High	there is severe impact on standing crop, with significant host mortality and/or storage losses.
Extreme	there is extreme impact on standing crop, with extreme host mortality and/or storage losses.
Unknown	the economic potential of the pest is unknown or very little of value is known.

Pest Risk Reviews

The objective of risk analysis is to clearly identify and classify biosecurity risks and to provide data to assist in the evaluation and treatment of these risks. Risk analysis involves consideration of the sources of risk, their consequences, and the likelihood that those consequences may occur. Factors that affect the consequences and likelihood may be identified and addressed via risk mitigation strategies.

Risk analysis may be undertaken to various degrees of refinement, depending on the risk information and data available. Analysis may be qualitative, semi-quantitative, quantitative, or a combination of these. The complexity and cost of analyses increase with the production of more quantitative data. It is often more practical to first obtain a general indication of the level of risk through qualitative risk analysis, and if necessary, undertake more specific quantitative analysis later (AS/NZS-4360, 1999).

When a risk analysis is performed, it is important to document the type of analysis used, the level of confidence in the analysis, and any areas where assumptions have been made or where information is limited or unavailable.

The determination of entry potential in this document takes into account all possible pathways including legal and illegal importation of plant material and the possibility of introduction through natural means such as wind. This scope is wider than the scope used by Biosecurity Australia in their Import Risk Assessments. The two approaches use similar underlying methodology, however due tho the differences in the scope of consideration, risk outcomes may be different.

Appendix 2 contains Pest Risk Reviews for key threats to the onion industry.

Step 1 - Clearly identify the pest

It is important to clearly define the identity of the pest for which the risk assessment is being performed, so that it is not confused with other pests. The generally accepted unit for defining the pest is its scientific name. A broader grouping than species may be used in some circumstances, for example when carrying out a risk assessment for a group of closely related species. Alternatively, in some cases the unit for defining a pest may be more narrowly defined, for example a sub-type within a species (e.g. subspecies, race, pathovar). In such cases there must be evidence that factors, such as differences in host range, pathogenicity or vector relationship, make that sub-type distinct from others in terms of biosecurity significance (Biosecurity Australia, 2001).

Step 2 – Assess the likelihood of entry, establishment and spread

It is likely that a combination of qualitative and quantitative data will be used to assess the likelihood or potential of an exotic incursion and its establishment. The likelihoods of entry, establishment and spread should be rated separately, noting any limitations or comments that may help in further refinement of the rating given. Table 2 defines the different risk level ratings that may be allocated (Biosecurity Australia, 2001).

After each risk area has been rated individually, a combined risk rating should be determined using the qualitative risk analysis matrix presented in Table 3. Again any important assumptions or limitations should be noted (Biosecurity Australia, 2001).

Table 2: *Factors used to rate the likelihood or potential of a pest incursion*

Likelihood or potential	Qualitative ratings	Statistical probability of occurrence
Entry potential, establishment potential and spread potential	High	Range = 0.7 to 1
	Medium	Range = 0.3 to 0.7
	Low	Range = 0.05 to 0.3
	Very low	Range = 0.001 to 0.05
	Extremely low	Range = 10-6 to 0.001
	Negligible	Range = 0 to 10-6
	Unknown	n/a

From Biosecurity Australia (2001)

Table 3: *Combining qualitative risk ratings*

	Likelihood					
Likelihood	**Negligible (N)**	**Extremely low (EL)**	**Very low (VL)**	**Low (L)**	**Moderate (M)**	**High (H)**
High	**N**	**EL**	**VL**	**L**	**M**	**H**
Moderate	**N**	**EL**	**VL**	**L**	**L**	**M**
Low	**N**	**EL**	**VL**	**VL**	**L**	**L**
Very low	**N**	**EL**	**EL**	**VL**	**VL**	**VL**
Extremely low	**N**	**N**	**EL**	**EL**	**EL**	**EL**
Negligible	**N**	**N**	**N**	**N**	**N**	**N**

From Biosecurity Australia (2001)

Step 3 – Assess the likely consequences

The most obvious consequence of a pest introduction is the economic impact it may have on an industry and local communities. Environmental and social impact ratings are also important to consider, as they help to determine the level of responsibility and the cost-sharing arrangements that may be involved in managing the risk. Whilst economic impacts may sometimes be expressed numerically, qualitative impact ratings can be used in place of numerical data if necessary.

Table 4 defines the categories for rating economic, environmental, and social impacts (Biosecurity Australia, 2001).

Table 4: *Factors used to rate the consequences of a pest incursion*

Impact rating	Definition
Unlikely to be discernible	Not usually distinguishable from normal variation in the criterion.
Minor	Not expected to threaten economic viability, but would cause a minor increase in mortality/morbidity or a minor decrease in production. For non-commercial factors, impact not expected to threaten the intrinsic 'value' of the criterion, but the value would be considered as 'disturbed'. These effects would generally be reversible.
Significant	Would threaten economic viability through a moderate increase in mortality/morbidity or moderate decrease in production. For non-commercial factors, the intrinsic 'value' of the criterion would be significantly diminished or threatened. Effects may not be reversible.
Highly significant	Would threaten economic viability through a large increase in mortality/morbidity, or a large decrease in production. For non-commercial factors, the intrinsic 'value' of the criterion would be considered as severely or irreversibly damaged.

From Biosecurity Australia (2001)

Economic, environmental, and social impacts should be assessed individually, and should be calculated for each of four geographic and/or geopolitical scales: local areas (i.e. rural communities, towns, or local government areas); districts (i.e. recognised sections of states, such as 'North West Slopes and Plains' and 'Far North Queensland'); regions (i.e. collections of districts – generally states), and; Australia as a whole (Biosecurity Australia, 2001).

These values are then translated to an 'impact score' (range A-F) according to the guidelines in Table 4.

Table 5: *Assessing consequences for pest incursions at local, district, regional, and national levels*

Scale	Consequence ratings					
National	Unlikely to be discernible	Unlikely to be discernible	Unlikely to be discernible	Minor	Significant	Highly significant
Regional	Unlikely to be discernible	Unlikely to be discernible	Minor	Significant	Highly significant	Highly significant
District	Unlikely to be discernible	Minor	Significant	Highly significant	Highly significant	Highly significant
Local	Minor	Significant	Highly significant	Highly significant	Highly significant	Highly significant
Impact score	**A**	**B**	**C**	**D**	**E**	**F**

From Biosecurity Australia (2001)

Combine individual consequence ratings to produce an overall consequence rating for a specific pest

Where numerical data are used in risk assessment, the overall consequences for a particular pest can be calculated by simply summing the values. However if, as is more often the case, a qualitative evaluation has been used to rate economic, social or environmental impacts, it is not

possible to simply sum the outcomes to determine the overall impact of a pest across these categories. The following rules have been developed by (Biosecurity Australia, 2001) to perform a similar function and should instead be used to obtain an approximate impact evaluation. These rules are mutually exclusive and should be addressed in order, until one is found to apply.

1. Where the consequence of a pest for any direct or indirect criterion is rated as 'F', the overall consequences are considered to be 'extreme'.
2. Where the consequences of a pest are rated as 'E' for more than one criterion, the overall consequences are considered to be 'extreme'.
3. Where one consequence is rated 'E' and all others are rated 'D', the overall consequences are considered to be 'high'.
4. Where one consequence is rated 'E' and all others are not unanimously rated 'D', the overall consequences are considered to be 'high'.
5. Where all consequences are rated 'D', the overall consequences are considered to be 'high'.
6. When the consequences of at least one criterion are rated 'D', the overall consequences are considered to be 'moderate'.
7. Where all consequences are rated 'C', the overall consequences are considered to be 'moderate'.
8. Where the consequences of a pest are rated as 'C' for one or more criteria, the overall consequences are considered to be 'low'.
9. Where the consequences for all criteria are rated as 'B', the overall consequences are considered to be 'low'.
10. Where the consequences for one or more criteria are considered 'B', the overall consequences are considered to be 'very low'.
11. Where the consequences for all criteria are rated 'A', the overall consequences are considered to be 'negligible'.

Step 4 – Derive an overall risk estimate by combining the likelihood and consequence ratings

Once the probabilities of entry, establishment and spread have been calculated for the pest, and an assessment of the likely consequences has been made, this information can be combined to achieve a risk estimate. This may be done mathematically for numerical data, however a set of 'decision rules' are required in order to combine qualitative rankings (Biosecurity Australia, 2001). Table summarises decision rules for combining the qualitative likelihood and consequence ratings described in this document.

Table 6: *Risk estimation matrix*

Likelihoods of entry, establishment and spread	Consequences of entry, establishment and spread					
	Negligible impact	**Very low impact**	**Low impact**	**Moderate impact**	**High impact**	**Extreme impact**
High likelihood	**Negligible risk**	**Very low risk**	**Low risk**	**Moderate risk**	**High risk**	**Extreme risk**
Moderate likelihood	**Negligible risk**	**Very low risk**	**Low risk**	**Moderate risk**	**High risk**	**Extreme risk**
Low likelihood	**Negligible risk**	**Negligible risk**	**Very low risk**	**Low risk**	**Moderate risk**	**High risk**
Very low likelihood	**Negligible risk**	**Negligible risk**	**Negligible risk**	**Very low risk**	**Low risk**	**Moderate risk**
Extremely low likelihood	**Negligible risk**	**Negligible risk**	**Negligible risk**	**Negligible risk**	**Very low risk**	**Low risk**
Negligible likelihood	**Negligible risk**	**Negligible risk**	**Negligible risk**	**Negligible risk**	**Negligible risk**	**Very low risk**

From Biosecurity Australia (2001)

Definition of risk categories with respect to risk management

- **Extreme risk** – specific action is required immediately to reduce risk.
- **High risk** – specific action is required. Generic risk mitigation plans should be adopted as soon as possible in the interim to increase the level of protection.
- **Moderate risk** – the current level of risk protection is insufficient. Appropriate risk reduction measures need to be identified and applied.
- **Low risk** – the current level of risk protection is insufficient. Appropriate risk reduction measures need to be identified and applied.
- **Very low risk** – an acceptable level of risk protection is in place. Additional risk management measures are not required.
- **Negligible risk** – an acceptable level of risk protection is in place for this threat. Risk management measures should be reviewed to ensure that they are justifiable.

Step 5 – Review the risks

Risks will change over time and may become more or less important based on changing technology, practices, legislation and policy. A process to identify new threats and to reassess the risk of existing threats facing the industry will be undertaken regularly as part of the review process of this plan. This will help ensure all threats have been identified and appropriately prioritised, with suitable risk mitigation strategies in place. It is recommended that these reviews be undertaken at least annually.

Formal categorisation of pests for inclusion in the industry/government Emergency Plant Pest Response Deed

The following section outlines the Emergency Plant Pest Response Deed between government and industry members of PHA, and as such is subject to change until the deed has been formally ratified. The Deed aims to minimise the impact of emergency plant pests by establishing an industry/government agreement to cover eradication of emergency pests, reducing delays in securing funding, providing industry with greater involvement in eradication efforts, and removing disincentives to report emergency pests.

Only the response to emergency pests will be covered by the Deed. Industry and government will share the total cost of an approved emergency plant pest response based on pre-agreed funding categories. These categories determine the contributions that each party will pay, based on the relative public and private benefits to be obtained from eradication. Four funding categories are included in the Deed.

Table 7: *Cost sharing categories*

Category	Description	Funding share
Category 1: Very high public benefits	Pest which if not eradicated would: ▪ cause major environmental damage to natural ecosystems; and/or ▪ potentially affect human health or cause a major nuisance to humans; and/or ▪ cause significant damage to amenity flora; and ▪ have relatively little impact on commercial crops. This category also covers situations where the pest has a very wide range of hosts including native flora and there is considerable uncertainty as to the relative impacts on the different crops. In short, it is almost impossible to properly determine which industries benefit from eradication and to what extent, and in any case, the incursion primarily affects native flora and/or amenity plants, and/or is a major nuisance if not a health risk to humans.	100 per cent public funding
Category 2: High public benefits	Pest which if not eradicated would: ▪ cause significant public losses either directly through serious loss of amenity, and/or environmental values and/or effects on households, or indirectly through very severe economic impacts on regions and the national economy, through large trade losses with flow on effects through the economy; and ▪ also impose major costs on the industries concerned so that these industries would significantly benefit from eradication.	80 per cent public funding, 20 per cent private funding

Category	Description	Funding share
Category 3: Moderate public benefits	Pest which if not eradicated would: ▪ primarily harm the industries concerned but there would also be some significant public costs as well (that is, moderate public benefits from eradication). In this case the pest could adversely affect public amenities, households or the environment, and/or could have significant, though moderate trade implications and/or national and regional economic implications.	50 per cent public, 50 per cent private funding
Category 4: Mostly if not wholly private benefits	Pest which if not eradicated would: ▪ have little or no public cost implications and little or no impacts on natural ecosystems. The affected commercial industries would be adversely affected primarily through additional costs of production, through extra control costs or nuisance costs; and ▪ generally there would be no significant trade issues that would affect national and regional economies.	80 per cent private funding, 20 per cent public funding

Pest categorisation

Exotic organisms listed in the emergency plant pest priority list may be put forward for categorisation and inclusion in the schedules to the Deed. Other organisms identified in TSTs or identified via other means as being priority pests, may also be categorised if required.

Organisms that enter Australia, but which have not been formally categorised will be treated as belonging to Category 3 until formally categorised.

A Categorisation Group determines the category that applies to high priority pests. Only emergency plant pests that have a high impact or establishment potential are considered for categorisation. Taking into account relevant scientific and other knowledge and experience the Categorisation Group will consider requests for pest categorisation, undertake reviews of pest categorisation, or remove pests from priority lists.

When more than one industry is affected by an emergency plant pest, the Categorisation Group will also determine, and where requested review, the funding weight for determining industry cost shares. Funding weights provide a means for calculating each industry's contributions if a pest affects multiple industry parties.

Figure 1 outlines the decision-making process for pest categorisation.

Composition of the categorisation group

Membership of the Categorisation Group will comprise (at a minimum):

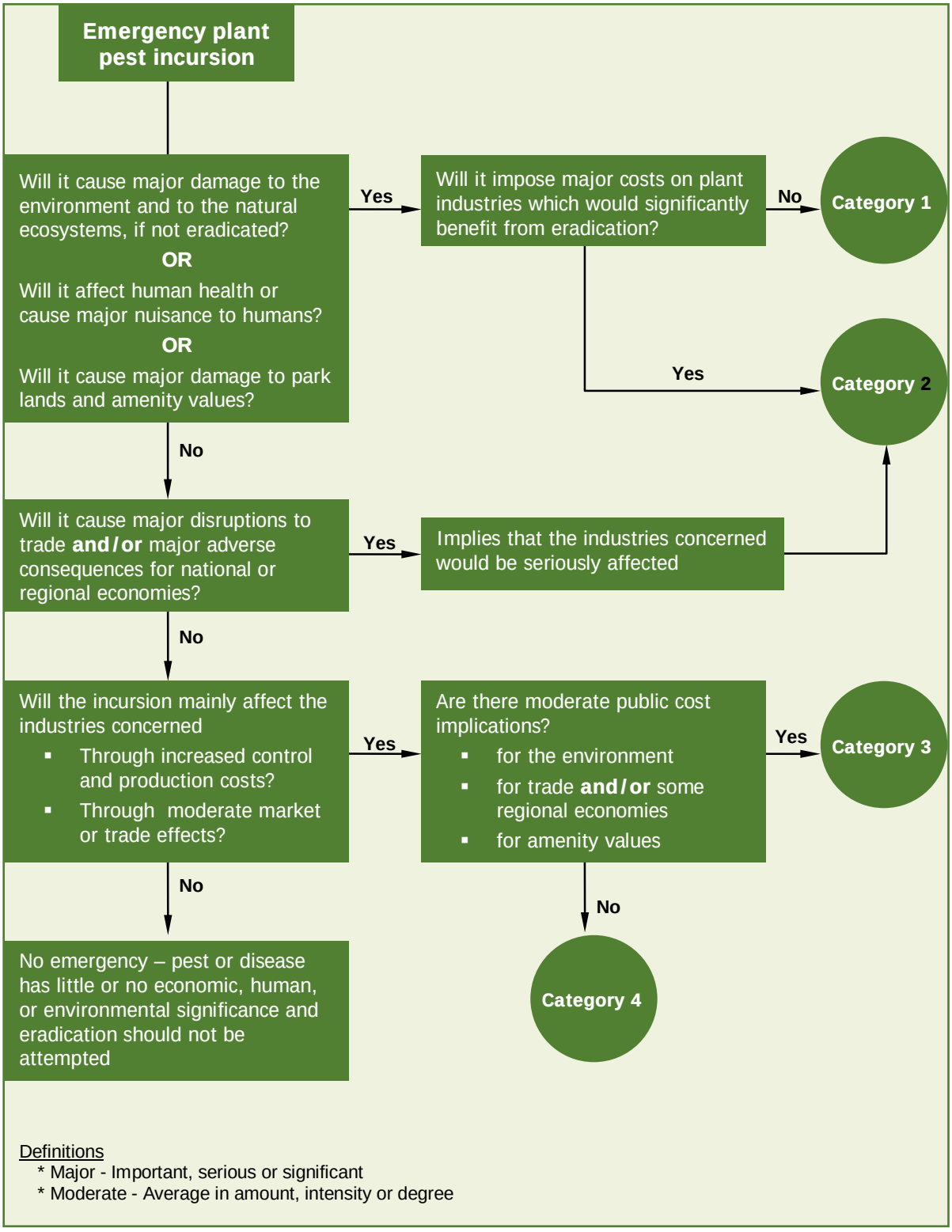
- an independent chair from PHA
- a standing representative of industry parties
- three technical experts [people with specific expertise in the areas of plant pathology or entomology], one nominated by the Australian Government, one nominated by the states/territories and one nominated by plant industry(s)
- a person with relevant economic expertise including social, trade and regional impact assessment
- a nominee from each plant industry or industries affected by the emergency plant pest being categorised.

The Categorisation Group may also seek advice from:

- a person with human health expertise, if a public health risk may exist
- a conservation representative or
- other relevant members determined by the independent chair.

Advisers who have specific expertise may accompany members, but will not be part of the decision-making process

Figure 1: *Pest categorisation decision tree*



References

AS/NZS-4360. (1999). Risk Management Standards Association of Australia, Strathfield, NSW.

Biosecurity Australia. (2001) *Guidelines for Import Risk Analysis: Draft September 2001*. Department of Agriculture, Fisheries and Forestry – Australia, Barton, ACT.