Application of the EPPRD for vector/pathogen complexes

Version	Date issued	Amendment Details	
		Section(s)	Details
1.0	17 Aug 2021	All	New document endorsed by Parties August 2023

Revision history

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Appendix 1 – Summary of governance and Cost Sharing following the detection of a Vector, Plant Pest or Complex 9

Disclaimer: This document is based on Plant Health Australia's understanding of the Emergency Plant Pest Response Deed (EPPRD). It does not constitute, and should not be relied upon as being, legal advice on the interpretation of the EPPRD. It does not, and is not intended to, replace, amend or otherwise alter the terms of the EPPRD in any way. Readers should seek their own independent advice on the interpretation of the provisions of the EPPRD and the application of those provisions to their own circumstances.



Purpose

The purpose of this document is to assist Parties in implementing the provisions of the Emergency Plant Pest Response Deed (EPPRD) when responding to vector/pathogen complexes.

Scope

The scope of this guideline is limited to Complexes and their Plant Pest and Vector components as specified in the EPPRD.

Definitions

Unless otherwise specified, capitalised words/terms (excluding names) in this document are defined in the EPPRD. Refer to the current version available at <u>www.planthealthaustralia.com.au/epprd</u>.

Where 'Vector EPP' is used in this guideline it refers to an exotic invertebrate vector component of a well-known significant Complex that meets the definition of Vector and EPP.

Where 'Plant Pest EPP' is used in this guideline it refers to the pathogen component of a well-known significant Complex that meets the definition of Plant Pest and EPP.

Introduction

A vector/pathogen complex refers to a pathogen that is carried and transmitted to its host by a known vector. There are several well-known and described complexes that are not present in Australia and for which it is in Australia's interest to remain free from, not only from the pathogen but also the vector.

In the presence of a non-significant vector, a pathogen may not be transmitted to its host effectively. The impact of the pathogen on its host plants may therefore be more limited and it may be more successfully controlled should it establish in Australia. In contrast a different vector may be extremely efficient in transmitting the pathogen. If this significant vector is present together with the pathogen of concern, establishment of the complex may result in whole cropping sectors no longer being viable due to the effectiveness of the vector.

In some cases a vector itself may not be of economic importance by itself and therefore may not meet the definition of an Emergency Plant Pest (EPP). The Parties have sought to ensure they have the opportunity to eradicate such known important vectors to ensure one half of the complex does not establish in Australia, as this would increase the risk of the complex eventually becoming established.

It is these exotic and significant vectors that are of concern to the Parties and for which the provisions of the EPPRD were designed to address.

The EPPRD was originally structured to support decision making and Cost Sharing of responses to single EPPs under a Response Plan. In particular, the provisions for categorisation were based on the assessment of the impact of one EPP only.

Around 2009 following an attempt to categorise/review the category of two well-known complexes it became apparent that the concept of complexes was not adequately addressed in the existing provisions of the EPPRD. The key issues related to:

1. What the categorisation/Cost Sharing arrangements should be for well-known and described complexes.



- 2. Whether a vector that is not a significant pest in its own right would meet the definition of an EPP and therefore if it could be responded to under the EPPRD when detected in the absence of its pathogen.
- 3. The provisions related to Cost Sharing a Response Plan being structured for a single EPP.

The Parties negotiated over several years ways to address these issues to ensure the EPPRD could be applied appropriately, equitably and with minimal uncertainty when a significant vector, pathogen or complex is detected in Australia.

In 2019 the Parties agreed to an approach that would enable pathogens and exotic vectors that form wellknown significant complexes to be effectively and equitably dealt with under the EPPRD. Rather than seeking to codify all possible scenarios in the provisions, the Parties agreed on an approach that is simple and provides certainty whilst retaining flexibility within the arrangements to address more challenging complexes that could arise or become known to science in the future.

Variations to the EPPRD to address complexes were formalised by the Parties in October 2022.

1. Overview of the provisions

The fundamental premise is that following the detection of a known Vector or pathogen (Plant Pest), Parties deal with the pest detected and empower the National Management Group (NMG) to make necessary policy and funding decisions as the situation changes (i.e. if the second half of the Complex is detected).

The provisions of the EPPRD allow for the Vector and pathogen (Plant Pest) components of a well-known and significant Complex to each be considered an EPP and responded to under the EPPRD whether detected alone or together (as a Complex).

In brief:

- Only invertebrate vectors that are exotic to Australia and are known to carry and transmit an EPP (i.e. the pathogen/Plant Pest half of the Complex) will be considered an EPP for the purposes of the EPPRD.
- Together the 'Vector EPP' and the 'Plant Pest EPP' construct a Complex and it must be in Australia's interest to be free of that Complex.
- For certainty, the Vector EPP and Plant Pest EPP should be listed as individual EPPs in schedule 13 whether categorised (preferred) or not. Otherwise in the event of an Incident of a Vector not listed in schedule 13, the NMG would need to determine whether the Vector is reasonably believed to be an EPP. The Complex itself is not identified as an EPP.
- Affected Parties for the Vector EPP are identified based on those crops impacted by the Complex (i.e. the specific Vector EPP must carry and transmit the Plant Pest EPP to the Crop).
- The Response Plan is written for the EPP detected and will be able to address response activities for more than one EPP if the situation requires (i.e. if the second half of the Complex is detected).
- The categorisation process acknowledges the potential impact of the Complex when categorising the Vector EPP and the Plant Pest EPP.
- The same category is applied for the Vector EPP and the Plant Pest EPP.
- Government and Industry Party apportionments are based on the EPP that the Response Plan is written for and responsive to change (by agreement and if necessary) if the second half of the Complex is subsequently detected.

Appendix 1 provides an overview of key governance and Cost Sharing matters.



2. Emergency Plant Pest status

2.1 Pathogens

To be considered an EPP, the pathogen needs to meet the definition of a Plant Pest and one of the criteria of the definition of an EPP in respect of a Plant Pest (clause (b)(i) of the EPP definition).

2.2 Vectors

Some vectors are not an important pest on their own and are only of concern because they carry and transmit an important pathogen/Plant Pest to host plants. An example is the pine sawyer beetle (*Monochamus alternatus*) which has a limited impact on its own but causes a significant impact to host trees when it carries and transmits the pine wilt nematode (*Bursaphelenchus xylophilus*). As these vectors may not be of adverse economic importance nationally (in the absence of the vectored pathogen), they may not meet the definition of an EPP in respect of a Plant Pest. These invertebrates are dealt with under the definition of an EPP in respect of a Vector. That is, the invertebrate could be considered an EPP if it meets:

- 1. the definition of Vector i.e. it is an invertebrate that carries and transmits a Plant Pest to a Crop; and
- 2. all the following criteria of the definition of an EPP in respect of a Vector (clause (b)(ii) of the EPP definition):
 - it is a known Vector and is not present in Australia or has been previously eradicated from Australia; and
 - it forms a known Complex (refer criteria at 5.1.3); and
 - the Complex is economically harmful to Australia; and
 - it is in Australia's interest to be free from the Complex.

Some invertebrates are an important pest in their own right, in addition to being a Vector of concern. An example is varroa mite (*Varroa destructor*) which impacts honey bees when present on its own, in addition to being a known Vector of honey bee viruses of economic importance (e.g. deformed wing virus). Such invertebrates may meet the definition of an EPP in respect of a Vector, and also meet the definition of an EPP in respect of a Plant Pest.

2.3 Complexes

The provisions allow for Parties to undertake a Cost Shared Response Plan for a Vector where it is in Australia's interest to be free of the Complex. The intent is to enable the eradication of one or both halves of a known Complex, to prevent it from establishing in Australia. The definition of a Complex therefore addresses the following two possible scenarios that may result in a Complex for which it is in Australia's interest to be free from.

- 1. A known exotic Vector that combines with a Plant Pest that meets the definition of an EPP; or
- 2. A known exotic Vector that combines with a Plant Pest that would otherwise meet the definition of an EPP except that it is considered established in Australia or was previously agreed to be an EPP and determined by the NMG as not feasible to eradicate.

3. Affected Party status

The identification of potential Affected Parties informs who will be involved in decision making (through membership on the Consultative Committee on Emergency Plant Pests (CCEPP) and the NMG) as well as who may contribute to the shared investment in a response. As for any Incident the Affected Party status is informed by the EPP that is detected. A key element for complexes is that the identification of Affected Parties is responsive to change if the second half of the Complex is detected, depending on its nature (for



example for the multiple complexes of *Xylella fastidiosa* where some Vector and Plant Pest components impact a differing range of host Crops).

3.1 Affected Government Parties

Government Parties are identified as Affected for a Vector EPP and/or Plant Pest EPP in the same manner as for any EPP detected. The Australian Government is always an Affected Party and the identification of Affected state/territory Government Parties is informed by understanding the Cropping Sectors that are impacted and the jurisdictions in which the Vector EPP and/or Plant Pest EPP may arise.

3.2 Affected Industry Parties

Detection of a Vector EPP

The identification of Affected Industry Parties for a Vector EPP is based on the Crops impacted by the Complex. Industry Parties representing Crops that are a host of the Vector EPP only are **not** identified as Affected (providing that Vector is not an EPP in its own right).

To be considered an Affected Industry Party for a Vector EPP:

- 1. the Crop represented by the Industry Party for the purposes of the EPPRD must be impacted by the Plant Pest EPP which the Vector EPP forms a Complex with, and
- 2. that Vector EPP must carry and transmit that Plant Pest EPP to the represented Crop(s).

During a response, if the Plant Pest EPP is subsequently detected, additional Affected Parties may be identified if there are Crops impacted by the Plant Pest EPP but transmitted by other specific vectors. This is considered an unlikely situation and should it arise the intent is that the NMG would review and negotiate in good faith with the additional Affected Parties for their inclusion in decision making and Cost Sharing of ongoing response activities.

Detection of a Plant Pest EPP

Affected Industry Parties for a Plant Pest EPP are identified in the same manner as for any EPP. They are based on the Crops represented by the Industry Parties that are or may be impacted by the Plant Pest EPP.

During a response, if the Vector EPP that carries and transmits the Plant Pest EPP to host Crops is subsequently detected, there would not be any change to the Affected Industry Parties. This is because to be Affected for a Vector EPP the Crop must be impacted by the Plant Pest EPP, and those Industry Parties have already been identified as Affected.

The below diagram demonstrates the identification of Affected Industry Parties for a Vector EPP and Plant Pest EPP.

Cropping sectors that host the Vector only are **not Affected** unless the Vector is also a Plant Pest EPP in its own right

Vector hosts

Plant Pest hosts

Affected Industry Parties for the Vector = Cropping sectors impacted by the Complex (i.e. impacted by the Plant Pest and the Vector transmits that Plant Pest to the Crop)

Cropping sectors impacted by the Plant Pest only as it is transmitted by other vectors (which may or may not be EPPs) are **only Affected** if the **Plant Pest is detected**



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Detection of an invertebrate that meets the definition of an EPP in respect of both a Plant Pest and a Vector

For invertebrates that meet the definition of an EPP in respect of both a Plant Pest and a Vector, as they are a pest of economic importance in their own right in addition to being a Vector of a Plant Pest EPP of concern, the Affected Industry Parties are those that represent Crops that are:

- 1. impacted by the Complex (i.e. impacted by the vectored Plant Pest and the invertebrate carries and transmits that Plant Pest to the impacted Crops), and
- 2. impacted by the invertebrate by itself as an EPP in its own right (if not already captured).

In most instances the Industry Parties identified as Affected under points 1 and 2 above will be the same.

Detection of a Complex

In the situation where a Complex is detected (both the Vector EPP and Plant Pest EPP), Affected Industry Parties are those identified as Affected for the Vector EPP and those identified as Affected for the Plant Pest EPP (if not already captured). For most Complexes the Affected Industry Parties for the Vector EPP and Plant Pest EPP will be the same.

4 Response Plan development and review

The EPPRD allows for a Response Plan to be developed for one or more EPPs. A Response Plan and associated Cost Sharing can therefore be responsive to the scenario where the 'second half' of a Complex is detected during the course of the response.

The Response Plan should be prepared for the specific Vector EPP and/or Plant Pest EPP detected. In the situation where only 'one half' of a Complex is initially detected, it would be likely and reasonable from an operational perspective, that the specific response strategy outlined in the first iteration of the Response Plan include activities to investigate whether the 'second half' of the Complex is also present. If the 'second half' of the Complex is subsequently detected, the Response Plan should be 'triggered' for review and, subject to a decision regarding feasibility of eradication, the next version of the existing Response Plan would address the response strategy for both EPPs.

5 Categorisation

Several pathogens (Plant Pests) and Vectors are listed as EPPs in schedule 13 (whether categorised or not). In the event of an Incident of a pathogen (Plant Pest) and/or Vector not listed in schedule 13, the NMG would need to determine (on advice of the CCEPP) whether the pathogen (Plant Pest) and/or Vector is reasonably believed to be an EPP.

When categorising a Plant Pest EPP or Vector EPP that together form a Complex, consideration must be given to the potential impact of the Complex should it become established in Australia (paragraph 1.1.2(b) of schedule 3).

A Vector EPP adopts the same Cost Sharing category as the Plant Pest EPP that it forms a Complex with (clause 7.1.2). This is because it is the impact of the Complex that is of concern to the Parties. Treating the Vector EPP and Plant Pest EPP as the same category means the category in place at the commencement of Cost Sharing will remain if the second component of the Complex is detected during the course of the Response Plan (excluding the situation where the default category changes following a categorisation process).

In the situation where a Vector EPP is uncategorised, if the NMG agrees to Cost Share Owner Reimbursement Costs in the absence of a Response Plan, or approves a Response Plan prior to categorisation, if the Plant Pest EPP that if forms a Complex with is:



- uncategorised, then the 'default' category applies to the Vector EPP, or
- categorised, then the Vector EPP will adopt the same category as the Plant Pest EPP.

6 Cost Sharing apportionments

Existing processes to determine individual Party apportionments for Government and Industry Parties apply (part 1 and 2 of schedule 6). The apportionments would be based on the EPP that is detected.

6.1 State/territory Government Party apportionments

The Commonwealth contributes 50% of the Government Party share.

For a category 1 EPP, the state/territory Government Party apportionments would be calculated based on the human population in each jurisdiction in comparison to the national human population.

For a category 2, 3 or 4 EPP, the state/territory Government Party apportionments would be calculated based on the Cropping Sectors impacted by the EPP and the relative percentage of their value in comparison to the national value.

- 1. When a Vector EPP is detected apportionments would be based on the Cropping Sectors impacted by the Complex (i.e. the Cropping Sectors impacted by the vectored Plant Pest EPP and the Vector EPP carries and transmits that Plant Pest EPP to those Cropping Sectors).
- 2. When a Plant Pest EPP is detected apportionments would be based on the Cropping Sectors impacted by the Plant Pest EPP.

If during the course of the Response Plan the 'other half' of the Complex is detected, **and** this involved additional Cropping Sectors being identified as impacted, the apportionments would be recalculated at that point. This is a possible but likely rare scenario. The intent is for the NMG to negotiate in good faith regarding changes to the apportionments should this situation ever eventuate.

6.2 Affected Industry Party apportionments

In line with existing processes, when there are multiple Affected Industry Parties, the calculation of individual Industry Party apportionments would be informed by the Funding Weights and relative national value of each Affected Industry Party. The Funding Weights are determined by an 'impact rating' and would change according to the number of Industry Parties involved.

- 1. When a Vector EPP is detected the impact ratings would take into account the relative impact of the Complex (i.e. impact of the Plant Pest EPP in the presence of the Vector EPP that it forms a Complex with).
- 2. When a Plant Pest EPP is detected impact ratings would take into account the relative impact of the Complex (i.e. they would be the same as for the Vector EPP). When there are Industry Parties identified as Affected for the Plant Pest EPP only (and not the Vector EPP), their impact ratings would be based on the relative impact of that Plant Pest EPP only.

If during the course of the Response Plan the 'other half' of the Complex is detected **and** there are no additional Affected Industry Parties, there would be no changes to an individual Party's impact rating or Funding Weight, as the Funding Weights for a Vector EPP and Plant Pest EPP are the same (as they take into account the impact of the Complex).

If during the course of the Response Plan the 'other half' of the Complex is detected, **and** this involved additional Affected Industry Parties, the apportionments could be adjusted at that time based on the inclusion of the new Industry Parties and through negotiation by the NMG. The following key points apply.



- As the impact ratings already identified would take into account the impact of the Complex, there would be no change to an existing individual Industry Party's impact rating. Impact ratings for the new Affected Industry Parties would be determined relative to those of the Affected Industry Parties involved initially.
- Due to the increase in the number of Affected Industry Parties involved, the Funding Weights of those involved initially would be recalculated and would decrease, resulting in a lower apportionment to Cost Sharing.

7 Calculating the Agreed Limit

Existing process would apply to the calculation of the Agreed Limit for a Response Plan (clause 9.5).

The Agreed Limit is informed by the identification of Affected Industry Parties so the amount may possibly differ depending on whether a Vector EPP, Plant Pest EPP or both components of a Complex are detected, depending on its nature.

If during the course of a Response Plan the 'other half' of the Complex is detected, **and** this involved additional Affected Industry Parties, the Agreed Limit could be recalculated at that time based on the inclusion of the new Industry Parties.



Appendix 1 – Summary of governance and Cost Sharing following the detection of a Vector, Plant Pest or Complex

Consideration	Vector	Plant Pest (i.e. vectored pathogen)	Complex
Does the detection relate to a Vector or Plant Pest or Complex?	The detection relates to an invertebrate pest that carries and transmits a Plant Pest to a Crop (refer clause 1.1 for full definition).	The detection relates to an invertebrate pest or pathogen that is injurious to Plant Health, Unprocessed Plant Products, Bees or Fungi (refer clause 1.1 for full definition).	 The detection relates to the combination of a Vector and 1. a Plant Pest that meets the definition of an EPP; or 2. Plant Pest that would otherwise meet definition of an EPP except that it is considered established in Australia or was previously agreed to be an EPP and determined by the NMG as not feasible to eradicate.
Does the Incident relate to an EPP?	 The Vector is an EPP listed in schedule 13 or meets the definition of an EPP in respect of a Vector (clause (b)(ii) of the EPP definition): it is a known Vector and is not present in Australia or has been previously eradicated from Australia; and it forms a known Complex; and the Complex is economically harmful to Australia; and it is in Australia's interest to be free from the Complex. 	The Plant Pest is an EPP listed in schedule 13 or meets the definition of an EPP in respect of a Plant Pest (refer clause (b)(i) of the EPP definition).	N/A
How are the Affected Government Parties determined?	The Australian Government is always an Affected Party. The identification of Affected state/territory Government Parties is informed by understanding of the Cropping Sectors that are impacted by the Complex and the jurisdictions in which the Vector EPP and/or Plant Pest EPP may arise.	The Australian Government is always an Affected Party. The identification of Affected state/territory Government Parties is informed by understanding of the Cropping Sectors that are impacted by the Plant Pest EPP and the jurisdictions in which the Plant Pest EPP may arise.	Where both halves of the Complex are detected the Affected Government Parties are those identified as Affected for the Vector EPP and Plant Pest EPP.



Consideration	Vector	Plant Pest (i.e. vectored pathogen)	Complex
How are the Affected Industry Parties determined?	 Based on the Crops represented by the Industry Parties that are impacted by the Complex; that is: 1. impacted by the Plant Pest EPP which the Vector EPP forms a Complex with, and 2. that Vector EPP carries and transmits that Plant Pest EPP to the represented Crop. Where the Vector also meets the definition of an EPP in respect of a Plant Pest (as it is a pest of economic importance in its own right in addition to being a Vector of a Plant Pest EPP of concern), they are based on the Crops represented by the Industry Parties that are: 1. impacted by the Complex; and 2. impacted by the Vector by itself as an EPP in its own right (if not already captured). 	Based on the Crops represented by the Industry Parties that are impacted by the Plant Pest EPP.	Where both halves of the Complex are detected the Affected Industry Parties are those identified as Affected for the Vector EPP and Plant Pest EPP (if not already captured).
What Cost Sharing category is applied?	 Determination of a category takes into account the impact of the Complex. If the vectored Plant Pest EPP is uncategorised the Vector EPP adopts default category. If the vectored Plant Pest EPP is categorised, the Vector adopts the same category as the Plant Pest EPP. 	 Determination of a category takes into account the impact of the Complex. If the Plant Pest EPP is uncategorised the default category applies. If the Plant Pest EPP is categorised, the category identified in schedule 13 applies. 	 Where both halves of a Complex are detected: If the vectored Plant Pest EPP is uncategorised, the default category applies to the Complex. If the vectored Plant Pest EPP is categorised, the category of the Plant Pest applies to the Complex.
How are the Government Party apportionments determined?	 Commonwealth: 50% of the Government Party share. States/territories: Based on the % national value of Crops impacted by the Complex that are grown in the state/territory; or If the Vector is also an EPP in its own right (in the absence of the pathogen), they are based on the % national value of Crops impacted by the Complex as well as the Vector as an EPP by itself, that are grown in the state/territory; or Based on the % national human population in each state/territory (category 1 EPP only). 	 Commonwealth: 50% of the Government Party share. States/territories: Based on the % national value of Crops impacted by the Plant Pest EPP that are grown in the state/territory; or Based on the % national human population in each state/territory (category 1 EPP only). 	 Commonwealth: 50% of the Government Party share. States/territories: Based on the % national value of Crops impacted by the Vector EPP and Plant Pest EPP that are grown in the state/territory; or Based on the % national human population in each state/territory (category 1 EPP only).



Consideration	Vector	Plant Pest (i.e. vectored pathogen)	Complex
Consideration How are the Industry Party apportionments determined?	 Vector For one Affected Industry Party, they would contribute the full Industry Party share. For multiple Affected Industry Parties, their apportionments are based on: the impact ratings / Funding Weights taking into account the impact of the Complex; and the % national value of each Affected Industry Party. In the rare situation that there are additional Industry Parties identified as Affected for the Vector alone (as it is an EPP in its own right), their impact ratings / Funding Weights would be based on the impact of that EPP only. 	 Plant Pest (i.e. vectored pathogen) For one Affected Industry Party, they would contribute the full Industry Party share. For multiple Affected Industry Parties, their apportionments are based on: the impact ratings / Funding Weights for the Plant Pest EPP taking into account the impact of the Complex; and the % national value of each Affected Industry Party. In the rare situation that there are Industry Parties identified as Affected for the Plant Pest EPP only and not the Vector EPP (as the Plant Pest EPP is vectored by other invertebrates), their impact ratings / Funding Weights would be based on the relative impact of that Plant Pest EPP only. 	 For one Affected Industry Party, they would contribute the full Industry Party share. For multiple Affected Industry Parties, their apportionments are based on: the impact ratings / Funding Weights for the Vector EPP and Plant Pest EPP taking into account the impact of the Complex; and the % national value of each Affected Industry Party.
			 In the rare situation that there are additional Industry Parties identified as Affected for: the Vector only as an EPP in its own right, their impact ratings / Funding Weights would be based on the relative impact of that EPP only. the Plant Pest EPP only and not the Vector EPP (as the Plant Pest EPP is vectored by other invertebrates), their impact ratings would be based on the relative impact of that Plant Pest EPP only.

