CUARENTAGRI

INVESTIGACIÓN
IDENTIFICACIÓN DE PLAGAS
FORMACIÓN

ETAPA 2: ENTRADA

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MAC 2014-2020
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EPPO EXPRES PRA

Etapa 2: Evaluación del Riesgo de Plagas

8. Pathways for entry

Which pathways are possible and how important are they for the probability of entry?

Examples of pathways are:

- *Plants for planting*
  - plants for planting (except seeds, bulbs and tubers) with or without soil attached
  - bulbs or tubers
  - seeds
- *Plant parts and plant products*
  - cut flowers or branches
  - cut trees
  - fruits or vegetables
  - grain
  - pollen
  - stored plant products
- *Wood and wood products*
  - non-squared wood
  - squared wood
  - bark
  - wood packaging material
  - chips, firewood, waste wood...
- *Natural spread*
- *Other possible pathways*
  - other packaging material
  - soil/growing medium as such
  - conveyance and machinery
  - passengers
  - hitchhiking
  - plant waste
  - manufactured plant products
  - intentional introduction (e.g. scientific purposes)

Pensar una a una:

- Revisar biología de la plaga
- Revisar hospedantes
- ¿Qué parte de la planta se comercializa?
- ¿Existe mucho comercio, poco, nada?.....

Vías sugeridas en esquema EPPO.
VER MÁS EJEMPLOS EN GUÍA DEL PM 5/5

- *Plants for planting*
  - plants with roots
    - plants in growing medium
    - bare-rooted
  - cuttings/bud
    - rooted
    - unrooted
  - seeds
  - Bulbs, corms, tubers, rhizomes
  - Tissue cultures
  - Pollen
- *Fruits*
  - fruit (except nuts)
  - nuts
    - conifer nuts and cones
    - fresh nuts
- *Underground plant parts*
  - with green parts
  - without green parts
- *Above-ground fresh plant parts*
  - cut flowers
  - cut branches
    - Christmas tree
    - cut green part of palms
    - other cut branches
  - cut foliage
  - leaf vegetables (incl. herbs)
  - others
- *Stored products/dried plant parts*
  - grain
  - others
- *Soil/growing medium*
- *Wood*
  - round wood (with or without bark)
  - sawn wood (with or without bark)
  - wood chips, processing wood residues, hogwood,
  - other wood
- *Bark*
- *Wood packaging material*
- *Furniture and articles made of wood*
- *Natural spread*
- *Travellers*
  - *luggage*
  - *clothes and footwear*
  - *leisure equipment*
  - *others*
- *Animals*
  - *livestock*
  - *pets and ornamental use*
  - *others*
- *Manufactured/processed commodities (other than wood)*
  - *non-organic*
  - *made from plant material (other than wood)*
- *Packaging (other than WPM)*
- *Conveyances, vehicles and equipment*
  - *containers*
  - *vehicles driven across borders*
  - *used machinery*
  - *used vehicles*
  - *used equipment/tools*
  - *others*
- *International mail items*
- *Hitchhiking*

Figure 1. Commodity tree presenting possible categories of pathways to be used in the PRA

Vías sugeridas en la GUÍA DEL PM 5/5 para ARP express

PENSAR PROBABILIDAD DE TODAS!

Pathways for entry

The different patwhays identified were indentified for the EPPO Region:

1. **Fruits of major hosts from countries where the pest occurs**
2. **Fruits of minor hosts from countries where the pest occurs**
3. **Plants for planting with growing medium attached (except seeds)**
4. **Fruits carried with passengers**

5. Natural spread
6. Cut branches with fruits used for ornamental purposes
7. Growing media in non hosts plants for planting
8. Hitchhiker on commodities
9. Soil as a commodity
10. Soil attached to machinery

EPPO, 2010

Note: Relevant pathways are those with which the pest has a possibility of being associated (in a suitable life stage), on which it has the possibility of survival, and from which it has the possibility of transfer to a suitable host.
Make a note of any obvious pathways that are impossible and record the reasons.

EPPO EXPRES PRA

Etapa 2: Evaluación del Riesgo de Plagas

(CONT.)

8. Pathways for entry

8.1 Pathways investigated in detail.

Suggested tables may be used to investigate pathways more in detail

8.2 Unlikely pathways: very low likelihood of entry

Pathways with a very low likelihood of entry should be listed here. It is useful to provide a rationale for the very low likelihood.

8.3 Overall rating of the likelihood of entry

Etapa 2: Evaluación del Riesgo de Plagas

8.1 Pathways investigated in detail

A continuación se analiza en detalle cada vía de entrada: (dos opciones):

- **Esquema largo PM 5/3:** se contesta a las preguntas 2.03 hasta 2.12, para cada una de las vías de entrada relevantes.

- **Esquema corto PM 5/5:** se cumplimenta la tabla sugerida (que resume preguntas del largo)

Pathways for entry: Regulation analysis

A la hora de identificar las vías de entrada es importante tener en cuenta:

1) Cuales con las vías de entrada prohibidas
2) Cuales son las medidas fitosanitarias existentes y en consecuencia su posible contribución a reducir el riesgo

Azores y Madeira: se rigen por la legislación de la UE.

En este sentido, la UE sólo tiene establecidas medidas especificas para tefrítidos no europeos para los siguientes frutos: Cítricos, Mango y Prunus. Punto 61, Anexo VII del Reglamento 2019/2072. No hay medidas para bananas.

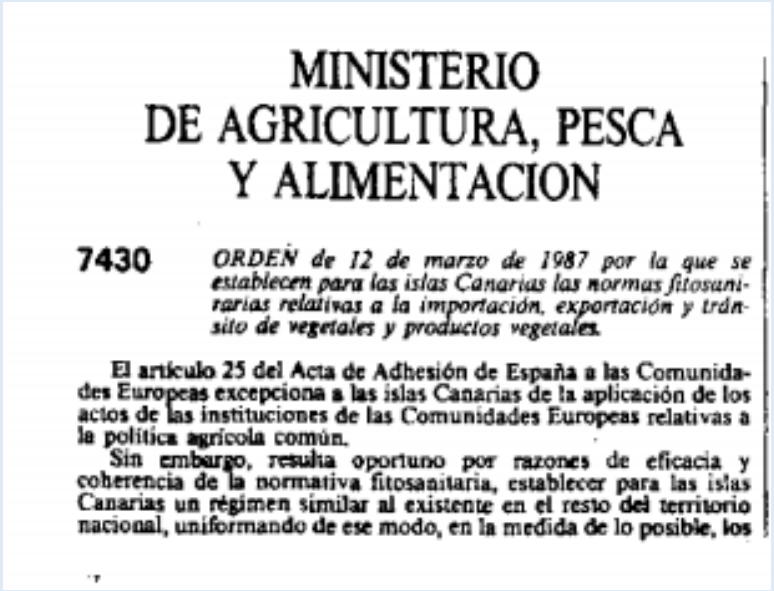
Existen regulaciones para otros frutos por otras plagas que pueden tener mayor o menor incidencia en el control de la plaga, pero de cara a B. dorsalis se basarían en la inspección visual

Cabo verde y Senegal: Están cerrados excepto vías de entrada concretas que tengan abiertas.

Pathways for entry: Regulation analysis

Canarias tiene legislación específica. "ORDEN de 11 de marzo de 1987 por la que se establecen para las islas Canarias las normas fitosanitarias relativas a la importación. exportación y tránsito de vegetales y productos vegetales".

Prohibidos frutos tropicales, medio de cultivo adherido, etc.



MINISTERIO
DE AGRICULTURA, PESCA
Y ALIMENTACION

7430 *ORDEN de 12 de marzo de 1987 por la que se establecen para las islas Canarias las normas fitosanitarias relativas a la importación, exportación y tránsito de vegetales y productos vegetales.*

El artículo 25 del Acta de Adhesión de España a las Comunidades Europeas excepciona a las islas Canarias de la aplicación de los actos de las instituciones de las Comunidades Europeas relativas a la política agrícola común.

Sin embargo, resulta oportuno por razones de eficacia y coherencia de la normativa fitosanitaria, establecer para las islas Canarias un régimen similar al existente en el resto del territorio nacional, uniformando de ese modo, en la medida de lo posible, los

Pathways for entry. Regulation analysis

ANEJO III

Vegetales, productos vegetales y medios de cultivo, cuya introducción está prohibida en las islas Canarias, originarios de los países que se relacionan

Designación	País de origen
1. Vegetales de *Citrus* L., excepto frutos, *Fortunella* Swinglw y *Poncirus* Raf.	Todos los países.
2. Frutos de *Citrus* L.	Todos los países, excepto España peninsular.
3. Vegetales *Eucalyptus* l'Herit, excepto frutos y semillas.	Todos los países.
4. Vegetales de *Abies* Mill, *Picea* A. Dietr, *Pinus* L., *Populus* L. y *Quercus* L., excepto frutos y semillas.	Países no europeos.
5. Vegetales de *Larix* Mill, excepto frutos y semillas.	Países de América del Norte y Asia.
6. Vegetales de *Tsuga* Carr. y *Pseudotsuga* Carr., excepto frutos y semillas.	Países de América del Norte.
7. Corteza aislada de coníferas (*Coniferae*), *Eucalyptus*, *Castanea* Mill y *Ulmus* L.	Todos los países.
8. Corteza aislada de *Quercus* L., excepto *Quercus suber* L.	Países de América del Norte, Rumania y Unión Soviética.
9. Corteza aislada de *Populus* L.	Países de América.
10. Vegetales de *Solanaceae* destinados a la plantación, excepto semillas y tubérculos de patata (*Solanum tuberosum* L.).	Todos los países.
11. Tubérculos de patata (*Solanum tuberosum* L.).	Todos los países, excepto los europeos (excluidos Turquía y Unión Soviética) y Argelia, Chipre, Egipto, Israel, Libia, Malta, Marruecos, Siria Túnez, siempre que estos países estén reconocidos exentos de *Leptinotarsa decemlineata*.
12. Vegetales de *Cotoneaster* (B. Ehrh.) Med, *Crataegus* L., *Sorbus aria* L., *Stranvaesia davidiana Decne*, excepto frutos y semillas.	Todos los países.
13. Vegetales de *Chaenomeles* Lindl., *Cydonia* Mill., *Malus* Mill., *Pyracantha* M. J. Roem, *Pyrus* L., *Sorbus* L., excepto *Sorbus intermedia* L., *Stranvaesia* Lindl., excepto frutos y semillas, durante el período comprendido entre el 16 de abril al 31 de octubre.	Estados miembros o regiones de Estados miembros distintos de los reconocidos exentos de *Erwinia amylovora*.
14. Vegetales de *Chaenomeles* Lindl., *Cydonia* Mill., *Malus* Mill., *Pyracantha* M. J. Roem., *Pyrus* L., *Sorbus* L., *Stranvaesia* Lindl., excepto frutos y semillas.	Países no pertenecientes a la CEE, donde es conocida la aparición de *Erwinia amylovora*.
15. Del 16 de abril al 30 de septiembre, cuando sean originarios de países de la CEE, y durante todo el año, del resto de los países, los vegetales de *Chaenomeles* Lindl, *Cornus* L., *Cydonia* Mill, *Malus* Mill, *Mespilus* L., *Prunus* L., *Pyrus* L., *Ribes* L., *Sorbus* L., *Symphoricarpus* Duham, excepto frutos, semillas y ramos de adorno.	Países donde es conocida la existencia de *Quadraspidiotus perniciosus*.
16. Vegetales de vid (*Vitis* L. partim) excepto frutos y semillas.	Todos los países.
17. Vegetales de los géneros:	
17.1 *Ananas* Mill., excepto *A. Bracteatus var. striatus* M. B. Foster, *Annona* L., excepto *Annona cherimola* Mill., *Carica* L., *Heliconia* L., *Litchi* Sonner, *Mangifera* L., *Musa* L., *Passiflora* P. V. Ball., *Persea* Mill., *Psidium* L., *Ravenala* Adans, *Strelitzia* Friand., excepto frutos.	Todos los países.
17.2 *Annona cherimola* Mill., excepto frutos.	Países distintos de los de la CEE.
18. Frutos frescos de los géneros:	
18.1 *Ananas*, *Annona* L., excepto *Annona cherimola* Mill., *Carica*, *Litchi*, *Mangifera*, *Musa*, *Passiflora*, *Persea*, *Psidium* y otros frutos frescos cultivados principalmente en regiones tropicales.	Todos los países.
18.2 *Actinidia*, *Annona cherimola* Mill., *Cyphomandra*.	Países distintos de los de la CEE.
18.3 *Cydonia*, *Malus*, *Prunus*, *Pyrus*, *Ribes* y otros frutos frescos distintos de los especificados en los apartados 18.1 y 18.2.	Países no europeos donde se conoce la existencia de *Trypetidae* no europeos que infestan dichos frutos.
19. Alfalfa (*Medicago sativa* L.), excepto semillas y derivados de heno desecado artificialmente.	Todos los países.
20. Paja de cereales.	Países no pertenecientes a la CEE.
21. Cañas secas (*Arundo donax* L.).	Países no pertenecientes a la CEE.
22. Medios de cultivo, excepto humus producidos por lombrices.	Todos los países, excepto los pertenecientes a la CEE, siempre que dichos medios estén sometidos a proceso e industrialización que garantice la total eliminación de organismos nocivos vivos.
23. Medios de cultivo adheridos o asociados a vegetales que contengan tierra.	Todos los países.

ETAPA2 PREGUNTAS

Pathways for entry. Regulation analysis

ANEJO III

Vegetales, productos vegetales y medios de cultivo, cuya introducción está prohibida en las islas Canarias, originarios de los países que se relacionan

Designación	País de origen
1. Vegetales de *Citrus* L., excepto frutos, *Fortunella* Swinglw y *Poncirus* Raf.	Todos los países.
2. Frutos de *Citrus* L.	Todos los países, excepto España peninsular.
17. Vegetales de los géneros:	
17.1 *Ananas* Mill., excepto *A. Bracteatus var. striatus* M. B. Foster, *Annona* L., excepto *Annona cherimola* Mill., *Carica* L., *Heliconia* L., *Litchi* Sonner, *Mangifera* L., *Musa* L., *Passiflora* P. V. Ball., *Persea* Mill., *Psidium* L., *Ravenala* Adans, *Strelitzia* Friand., excepto frutos.	Todos los países.
17.2 *Annona cherimola* Mill., excepto frutos.	Países distintos de los de la CEE.
18. Frutos frescos de los géneros:	
18.1 *Ananas, Annona* L., excepto *Annona cherimola* Mill., *Carica, Litchi, Mangifera, Musa, Passiflora, Persea, Psidium* y otros frutos frescos cultivados principalmente en regiones tropicales.	Todos los países.
18.2 *Actinidia, Annona cherimola* Mill., *Cyphomandra.*	Países distintos de los de la CEE.
18.3 *Cydonia, Malus, Prunus, Pyrus, Ribes* y otros frutos frescos distintos de los especificados en los apartados 18.1 y 18.2.	Países no europeos donde se conoce la existencia de *Trypetidae* no europeos que infestan dichos frutos.
22. Medios de cultivo, excepto humus producidos por lombrices.	Todos los países, excepto los pertenecientes a la CEE, siempre que dichos medios estén sometidos a proceso e industrialización que garantice la total eliminación de organismos nocivos vivos.
23. Medios de cultivo adheridos o asociados a vegetales que contengan tierra.	Todos los países.

8.1 Pathways investigated in detail.

DESCRIPCIÓN DE LAS 4 VÍAS DE ENTRADA RELEVANTES

Guía de evaluación cuantitativa de plagas.Entrada

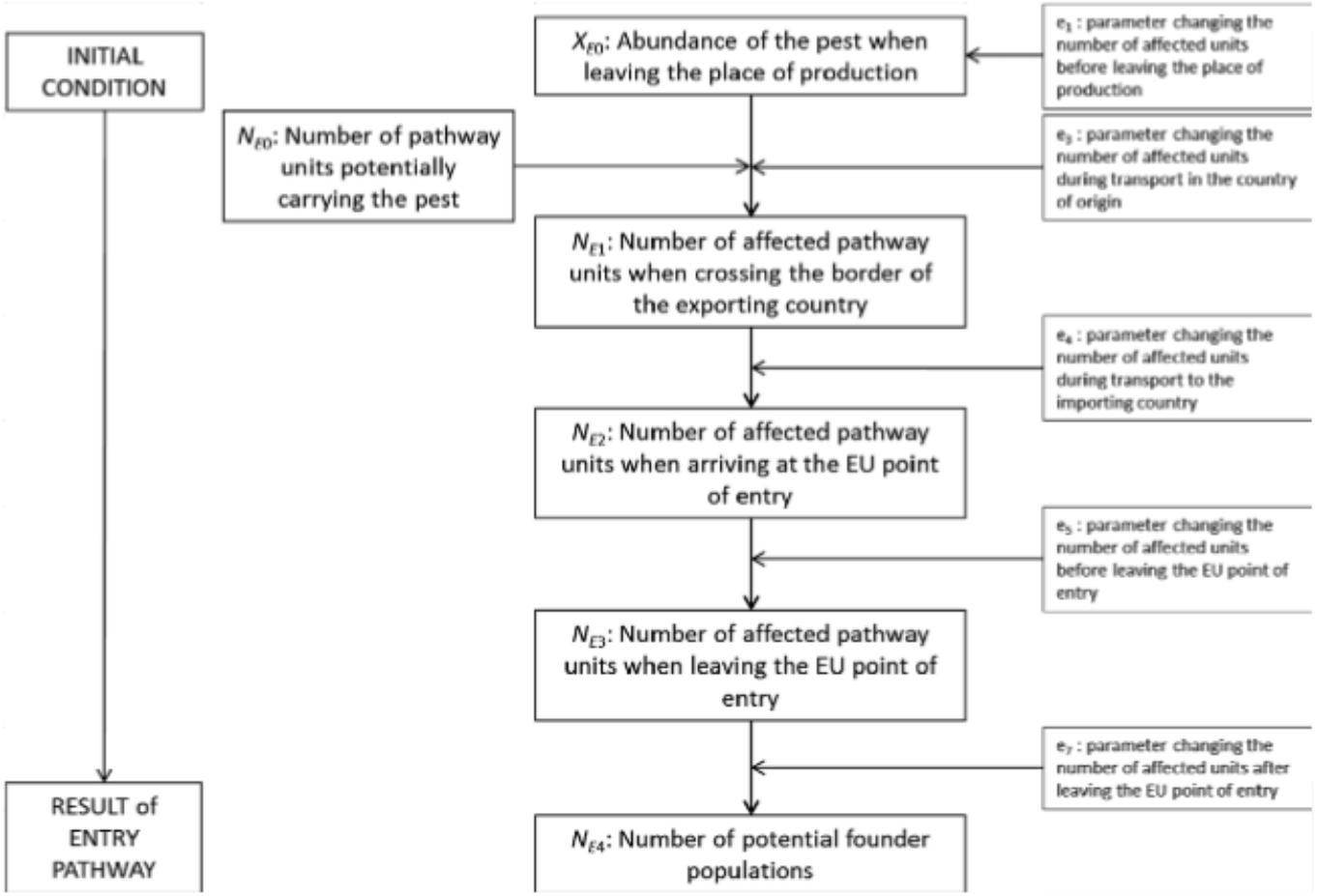


Figure 3: A conceptual pathway model with substeps

8.1 Pathways investigated in detail.

Pathway 1: Fruits of major hosts from countries where the pest is known to occurs

Fruits in trade infested with eggs, larvae and most rarely pupae represent **the most likely pathway**, although it is unknown how *B. dorsalis* was introduced from Asia to Africa (EPPO, 2005).

No tenemos datos de Macaronesia, extrapolando datos de otras regiones:

De acuerdo con Europht: 466 interceptaciones de *B. dorsalis* y 138 *B. zonata*) en frutos en puertos de entrada de la EU (2000-2018)

8.1 Pathways investigated in detail.

Pathway 1 Fruits of major hosts from countries where the pest is known to occurs

B. dorsalis may infest many host plants (more than **300 host** species recorded), and this **highly polyphagous species** is being **found on an increasing number of hosts**; the current host list is not considered as definitive.
Although more host plants are likely to be reported, they are probably of minor significance in international trade.

EPPO, 2010

8.1 Pathways investigated in detail.

Pathway 1 Fruits of major hosts from countries where the pest is known to occurs

The EWG considered that from the host list the species that are:

- a regular host that is usually relatively highly infested;
- a major host for which a large proportion of the samples is infested, number of flies emerging is often very high.

should be considered as major hosts.

The following species are considered as major hosts:

***Annona muricata* (Sour sop), *Carica papaya*, *Chrysophyllum albidum*, *Citrus x paradisi* (grapefruit), *Citrus reticulata*, *Citrus sinensis*, *Citrus x tangelo*, *Diospyros montana*, *Eriobotrya japonica*, *Fortunella japonica*, *Fortunella margarita*, *Irvingia gabonensis*, *Mangifera indica*, *Psidium guava*, *Psidium littorale*, *Spondias cytherea*, *Spondias mombin*, *Terminalia catappa*, *Thevetia peruviana*, *Vitellaria paradoxa*.**

EPPO, 2010

Annona muricata Guanábana

https://es.123rf.com/photo_87099281_annona-muricata-fruta-de-guan%C3%A1bana-sugar-apple-chirimoya-aislada-en-el-fondo-blanco.html

Chrysophyllum albidum Africa apple star

https://omotanwasholarin.wordpress.com/2016/02/16/chrysophyllum-albidum-fruit-of-life/comment-page-1/

Diospyros montana Bombay ebony

https://en.wikipedia.org/wiki/Diospyros_montana

Irvingia gabonensis Mango africano

https://www.indiamart.com/proddetail/irvingia-gabonensis-extract-7980798355.html

Spondias

https://en.wikipedia.org/wiki/Spondias

Terminalia catappa Tropical almond

https://www.amazon.in/Amazing-Indian-Almond-Terminalia-Catappa/dp/B084YQP6D8

Thevetia peruviana Arbol de ayoyote

https://www.jardineriaon.com/thevetia-peruviana.html

Vitellaria paradoxa

http://www.lafermedeleo.eu/nos-futurs-fruitiers-vitellaria-paradoxa-en.html

8.1 Pathways investigated in detail.

Pathway 1 Fruits of major hosts from countries where the pest is known to occurs

Although being recorded as major hosts, ***Thevetia peruviana*** **does not produce edible fruits**, and is not considered further in the patwhay.

Although being recorded as major hosts, **no international trade** with the EPPO region for these fruits recorded to date: ***Chrysophyllum albidum*** (edible fruit with national market in Benin), ***Diospyros montana, Terminalia catappa***.

EPPO, 2010

8.1 Pathways investigated in detail.

Pathway 2: Fruits of minor hosts from countries where the pest is known to occur

Fruits in trade infested with eggs, larvae and most rarely pupae represent the most likely pathway.

The EWG considered that from the host list, the species that are:

- an incidental host, with only one or a few records. Usually with low infestation rate;
- a host that is used more regularly, but often with very low infestation rate. This can also be a host for which there are only few positive rearings, but with considerable numbers of flies emerging.

should be considered as minor hosts.

EPPO, 2010

8.1 Pathways investigated in detail.

Pathway 2: Fruits of minor hosts from countries where the pest is known to occur

The following species are considered as minor hosts:

Anacardium occidentale (Cashew), ***Annona cherimola***, *Annona senegalensis, Annona squamosa (*sugar apple*), Averrhoa carambola* (star fruit), *Blighia* sp., ***Capsicum annuum*** (sweet pepper), *Capsicum frutescens* (chilli pepper), ***Citrullus lanatus*** (watermelon), *Citrus aurantium, Citrus grandis* (pomelo), *Citrus limon, Coffea arabica* (Arabica coffee) and *C. canephora* (Robusta coffee), *Cordia* sp. cf *myxa, Cordyla pinnata, Cucumis figarei, Cucumis* sp nr *metuliferus,* ***Cucumis pepo,Cucumis sativus*** (cucumber), *Cucurbita maxima, Cucurbita* spp. (pumpkins), *Flacourtia indica,* ***Lycopersicon esculentum*** (tomato), ***Malus domestica*** (apple), *Manilkara sapota* (bully tree), *Momordica cf trifoliata, Musa* spp. (banana), *Musa* x *paradisiaca,* ***Persea americana*** (avocado), *Prunus persica* (peach), *Sarcocephalus latifolius, Sclerocarya birrea, Solanum aethiopicum, Solanum anguivi, Solanum incanum, Solanum nigrum, Solanum sodomeum, Sorindeia madagascariensis, Strychnos mellodora, Sizygium cumini, Sizygium jambos, Sizygium malaccense* (Malay apple) and *Sizygium samarangense* and *Ziziphus mauritiana*.

Syzigium

Blighia

Ziziphus

Sorindeaia

Cordia

Cordyla

Flacourtia

Sclerocarya

Manilkara

Sarcocephalus

8.1 Pathways investigated in detail.

Pathway 2: Fruits of minor hosts from countries where the pest is known to occur

The EWG analysed which of these fruits were recorded to be traded.
Although being recorded as minor hosts, *Solanum nigrum* and *Solanum sodomeum* do not produce edible fruits.

EPPO,2010

8.1 Pathways investigated in detail.

Pathway 3: Plants for planting with growing medium attached (except seeds) from countries where the pest is known to occur

Fruits on host plants could be infested with **eggs, larvae and most rarely pupae** of *Bactrocera dorsalis*. **The entry of planting material (bushes and shrubs) with fruits is prohibited by most some phytosanitary legislations** in the region, **but some of the main hosts are not prohibited** by the EU.
Nevertheless, although the introduction of plants for planting with fruits is a closed pathway, the situation could change and it could be open. For instance, ***Capsicum frutescens* with fruits used as an ornamental plant, or other plants could be imported**. It should be noted that this species cannot be imported in the EU because of the general prohibition applied to Solanaceae from non Mediterranean countries.

EPPO, 2010

8.1 Pathways investigated in detail.

Pathway 3: Plants for planting with growing medium attached (except seeds) from countries where the pest is known to occur

Even when the import of a plant species with fruit attached is prohibited there remains the possibility that, although plants for planting with fruits should not enter the EPPO region, **pupae could be also present in the growing media**. This pathway had been mentioned during EPPO ad hoc workshops on Pest Risk Analysis of non-European fruit flies in 1993 and 1994.
This pathway is not restricted by the USA Federal import quarantine order as any plant for planting with growing media is prohibited of entry in this country.
It is considered that the infestation by pupae of growing media from nearby **infested plants in a well managed nursery is very unlikely**, making the risk of plants for planting being contaminated lower.

EPPO, 2010

8.1 Pathways investigated in detail.

Pathway 3: Plants for planting with growing medium attached (except seeds) from countries where the pest is known to occur

The Netherlands import planting material of *Annona spp., Averrhoa spp., Carica spp., Chrysophyllum spp., Coffea spp., Eriobotrya spp., Ficus spp., Garcinia spp., Mangifera indica, Musa spp., Prunus spp., Psidium guajava, Syzygium spp., Terminalia spp*., of which some are imported from countries where the pest occurs (*Coffea spp., Dracaena spp., Ficus spp., Terminalia spp*.) But as these imports include seeds, tissue culture, cuttings, etc, and not all records correspond to plants for planting with growing media and it is therefore difficult to extrapolate data from this list.

The EWG considered that imported host plants include may include:
***Anacardium occidentale, Annona spp., Averrhoa carambola, Capsicum frutescens, Citrus spp., Eriobotrya japonica, Fortunella japonica, Fortunella margarita, Malus spp., Manilkara zapota, Prunus spp., Psidium spp., Solanum spp., Syzygium spp., Thevetia peruviana*.**

This list is only indicative as the species could extend its range to new hosts, and that detailed data on trade of ornamental plants is missing.

EPPO, 2010

8.1 Pathways investigated in detail.

Pathway 3: Plants for planting with growing medium attached (except seeds) from countries where the pest is known to occur

It should be noted that the importation of some of these species is restricted in at least the EU countries: *Citrus spp*. (prohibition), *Eriobotrya spp*. (protected zone fire blight), *Fortunella spp., Malus spp., Solanaceae*.

The EWG considered that the following hosts are unlikely to be imported as plants for planting with growing medium: *Carica papaya, Chrysophyllum albidum, Citrullus lanatus, Coffea arabica, Coffea canephora.*

EPPO, 2010

8.1 Pathways investigated in detail.

Pathway 4: Fruits carried with passengers

White & Elson-Harris (1992) report that many fruit fly outbreaks may be attributable to undetected **illegal imports of a few fruits in an airline passenger's baggage**. This has also been recognized in later studies (Miller, 1997). Passengers could potentially bring back from countries they visit fruits that would be contaminated with *B. dorsalis.*

Passengers in cars, ferries are also a pathway.

Passengers bringing contaminated plants for planting are considered unlikely and are not considered further.

The pathway “fruits carried with passengers” is further considered.

EPPO, 2010

8.1 Pathways investigated in detail.

PRESENTACIÓN DE LAS PREGUNTAS DEL ESQUEMA LARGO PM 3/3

Esquema largo: Preguntas 2.03-2.2 (versión B.invadens)

8.1 Pathways investigated in detail.

Esquema largo (versión B.invadens):

Probability of the pest being associated with the individual pathway at origin.

2.03 How likely is the pest to be associated with the pathway at the point(s) of origin taking into account the biology of the pest?

Note: This question is about the likelihood that the pest may be able to enter the pathway at the point(s) of origin. In order to answer the question, consider the following criteria:

- Is the pest in a life stage that would be associated with commodities, containers, or conveyances?
- Is seasonal timing appropriate for the pest to be associated with the pathway at origin?

very unlikely, unlikely, moderately likely, likely, very likely.

Level of uncertainty:	Low	Medium	High

8.1 Pathways investigated in detail.

Esquema largo (versión B.invadens):

2.04 How likely is the pest to be associated with the pathway at the point(s) of origin taking into account current management conditions?

Note: Consider the concentration of the pest on the pathway in the country of origin and the influence of practices), such as plant protection product application (including herbicides for plants), use of specific cultivars, removal of substandard produce, kiln-drying of wood, cultural methods, sorting and cleaning of commodities. Pre-shipment phytosanitary measures already in place that may be efficient against the pest should be considered. Note that practices may change over time.

very unlikely, unlikely, moderately likely, likely, very likely.

Level of uncertainty:	**Low**	**Medium**	**High**

8.1 Pathways investigated in detail.

Esquema largo (versión B.invadens):

2.05 Consider the volume of movement along the pathway (for periods when the pest is likely to be associated with it): how likely is it that this volume will support entry?

Note: This should be estimated on the basis of quantities of the traded commodity, packing materials, persons, baggage, mail and conveyances, on a yearly basis. For natural spread, movement of the pest should be estimated as far as possible (usually little information is available).

very unlikely, unlikely, moderately likely, likely, very likely

Level of uncertainty:	**Low**	**Medium**	**High**

8.1 Pathways investigated in detail.

Pathway 1: Fruits of major hosts from countries where the pest occurs

Esquema largo:

2.06 Consider the frequency of movement along the pathway (for periods when the pest is likely to be associated with it): how likely is it that this frequency will support entry?

Note: This should be estimated on the basis of movements of the traded commodity, packing materials, persons, baggage, mail and conveyances, on a yearly basis. For natural spread, movement of the pest should be estimated as far as possible (usually little information is available).

very unlikely, unlikely, moderately likely, likely, very likely

Level of uncertainty:	Low	Medium	High

8.1 Pathways investigated in detail.

Pathway 1: Fruits of major hosts from countries where the pest occurs

Esquema largo:

Probability of survival during transport or storage

2.07 How likely is the pest to survive during transport or storage?

Note: Consideration should be given to: speed and conditions of transport (including treatments performed during transport); vulnerability of the life-stages likely to be transported (for plants viability of seeds or other propagules, for all pests tolerance of low or elevated temperatures); whether the life cycle is of sufficient duration to extend beyond time in transit. Detection data can be used to indicate the ability of a pest to survive in transit.

very unlikely, unlikely, moderately likely, likely, very likely

Level of uncertainty:	**Low**	**Medium**	**High**

8.1 Pathways investigated in detail.

Esquema largo (versión B.invadens):

2.08 How likely is the pest to multiply/increase in prevalence during transport or storage?

Note: Some pests do not multiply/increase in prevalence during transport or storage, in this case it should be rated very unlikely.

very unlikely, unlikely, moderately likely, likely, very likely

Level of uncertainty:	**Low**	**Medium**	**High**

8.1 Pathways investigated in detail.

Esquema largo (versión B.invadens):

Probability of the pest surviving existing pest management procedures

2.09 Under current inspection procedures how likely is the pest to enter the PRA area undetected?

Note: The likelihood of detecting the organism during inspection or testing will depend on a number of factors including:

• ease of detection of the life stages that are likely to be present. Some stages are more readily detected than others, for example insect adults may be more obvious than eggs, growing plants may be more obvious than seeds or bulbs, etc.;

• location of the organism on the commodity - surface feeders may be more readily detected than internal feeders;

8.1 Pathways investigated in detail.

Esquema largo (versión B.invadens):

2.09 Under current inspection procedures how likely is the pest to enter the PRA area undetected? (cont.)

• symptom expression - many diseases may be latent for long periods, at certain times of the year, or may be without symptoms in some hosts or cultivars and virulent in others;
• distinctiveness of symptoms - the symptoms might resemble those of other organisms or sources of damage such as mechanical or cold injury;
• the intensity of the sampling and inspection regimes;
• accessibility of the consignment for inspection
• distinguishing the organism from similar organisms

The assessor should bear in mind that such measures could be removed in the future if the other pests were to be re-evaluated.

very unlikely, unlikely, moderately likely, likely, very likely

Level of uncertainty:	**Low**	**Medium**	**High**

8.1 Pathways investigated in detail.

Esquema largo (versión B.invadens):

Probability of transfer to a suitable host or habitat

2.10 How likely is the pest to be able to transfer from the pathway to a suitable host or habitat?

Note: Factors to consider include:

- innate dispersal mechanisms or the need for vectors
- the likelihood that the pest might find suitable hosts and habitats, considering the distribution of the commodity throughout the PRA area. The more scattered the destinations, the more likely it is that the pest might find suitable hosts and habitats.
- the likelihood that the pest will arrive during the months of the year most appropriate for establishment. Introduction at many different times of the year will increase the probability that entry of the pest will occur at a life stage of the organism or the host suitable for establishment.

8.1 Pathways investigated in detail.

Pathway 1: Fruits of major hosts from countries where the pest occurs

Esquema largo:

2.10 How likely is the pest to be able to transfer from the pathway to a suitable host or habitat? (cont.)

- the intended use of the commodity (e.g. processing, consumption, planting, disposal of waste, by-products) and how it can affect the transfer of the pest to a suitable host or habitat **Some uses are associated with much higher probability of introduction (e.g. planting) than others (e.g. processing).** Consider whether the intended use of the commodity would destroy the pest or whether the processing, **planting or disposal might be done in the vicinity of suitable hosts** or habitats.

very unlikely, unlikely, moderately likely, likely, very likely

Level of uncertainty:	Low	Medium	High

8.1 Pathways investigated in detail.

Pathway 1: Fruits of major hosts from countries where the pest occurs

Esquema largo:

- **2.11 The probability of entry for the pathway should be evaluated**

Consideration of further pathways

In principle, all the relevant pathways selected at point 2.01 may in turn be considered. However, the replies given for the pathway(s) so far considered may indicate that it is not necessary to consider any more.

2.12 Do other pathways need to be considered?

if yes Go back to 2.02 for the next pathway

if no Go to 2.13 and then to 3.01

8.1 Pathways investigated in detail.

Esquema largo (versión B.invadens):

Una vez contestadas todas las preguntas para cada vía de entrada relevante:

Conclusion on the probability of entry

2.13 Describe the overall probability of entry taking into account the risk presented by different pathways and estimate the overall likelihood of entry into the PRA area for this pest (comment on the key issues that lead to this conclusion).

Note: The overall likelihood rating for entry should combine the assessments of the individual pathways.

Very unlikely, unlikely, moderately likely, likely, very likely

Level of uncertainty:	Low	Medium	High

8.1 Pathways investigated in detail.

PRESENTACIÓN DE LA TABLA DEL ESQUEMA CORTO PM 3/5

EPPO EXPRES PRA

Etapa 2: Evaluación del Riesgo de Plagas

(CONT.)

(i) Vías de entrada más probables y aparentemente con más

Table 4. Table format to assess pathways for entry when performing a detailed PRA (content is based on EPPO Standard PM 5/3 with additions based on experience when performing EPPO PRAs).

Pathway	Pathway 1
Coverage	The pathway should be clearly defined.
Pathway prohibited in the PRA area?	Yes/No. Give references.
Pathway subject to phytosanitary measures, including inspection at import?	Pre-shipment phytosanitary measures already in place that may be efficient against the pest should also be considered. Note that practices may change over time.
Pest already intercepted?	To show if the pest has already been observed to move on the pathway. This does not necessarily relate to the PRA area, but may be wider. Give references to any known interception reports of the pest. e.g. national databases, europhyt, EPPO Reporting Service, publications from outside the EPO region. **Links:** Europhyt, EPPO platform on PRAs
Most likely stages that may be associated	Consider association of the life stages with the pathway.
Plants concerned	List species considered in this pathway (possibly cross-referring to section 7) and how the plant species impact the association with the pest.
Important factors for association with the pathway	Association with the pathway at the point(s) of origin takes into account: - the biology of the pest (e.g. life stage, seasonal timing. For plants: access of seeds or other propagules to commodities, containers or conveyances) - the current management conditions (consider the concentration of the pest on the pathway in the country of origin and the influence of practices, such as plant protection product application (including herbicides for

(cont.)

Pathway	Pathway 1
	plants), use of specific cultivars, removal of substandard produce, kiln-drying of wood, cultural methods, sorting and cleaning of commodities. Pre-shipment phytosanitary measures already in place that may be efficient against the pest should be considered. Note that practices may change over time). The likelihood of detecting the organism during inspection or testing at the point(s) of origin will depend on a number of factors including: o ease of detection of the life stages that are likely to be present. Some stages are more readily detected than others, for example insect adults may be more obvious than eggs, growing plants may be more obvious than seeds or bulbs etc o location of the organism on the commodity - surface feeders may be more readily detected than internal feeders; o symptom expression - many diseases may be latent for long periods, at certain times of the year, or may be without symptoms in some hosts or cultivars and virulent in others; o distinctiveness of symptoms - the symptoms might resemble those of other organisms or sources of damage such as mechanical or cold injury; o the intensity of the sampling and inspection regimes; o accessibility of the consignment for inspection; o distinguishing the organism from similar organisms
Survival during transport and storage	Consideration should be given to: o speed and conditions of transport (including treatments performed during transport); o vulnerability of the life-stages likely to be transported (for plants viability of seeds or other propagules, for all pests tolerance of low or elevated temperatures); o whether the life cycle is of sufficient duration to extend beyond time in transit. Detection data can be used to indicate the ability of a pest to survive in transit. Mention whether the pest could multiply/increase during transport or storage.

(cont.)

Trade	Volume and frequency of movement along the pathway should be estimated on the basis of quantities of the traded commodity, packing materials, persons, baggage, mail and conveyances, on a yearly basis. Any limitations on the availability of data can be specified **Links:** Eurostat, FAO Stat
Transfer to a host	Transfer is the dispersal mechanism that allows movement from a pathway to a suitable host (ISPM 11). The probability of transfer from the pathway to a suitable host or habitat should be considered. Factors to consider include: o innate dispersal mechanisms or the need for vectors o the likelihood that the pest might find suitable hosts and habitats, considering the distribution of the commodity throughout the PRA area. The more scattered the destinations, the more likely it is that the pest might find suitable hosts and habitats. o the likelihood that the pest will arrive during the months of the year most appropriate for establishment. Introduction at many different times of the year will increase the probability that entry of the pest will occur at a life stage of the organism or the host suitable for establishment. o the intended use of the commodity (e.g. processing, consumption, planting, disposal of waste, by-products) and how it can affect the transfer of the pest to a suitable host or habitat Some uses are associated with much higher probability of introduction (e.g. planting) than others (e.g. processing). Consider whether the intended use of the commodity would destroy the pest or whether the processing, planting or disposal might be done in the vicinity of suitable hosts or habitats.
Likelihood of entry and uncertainty (ratings: e.g. very low, low, moderate, high, very high)	When performing detailed PRAs, the EPPO secretariat found very convenient to rate individually each pathway (here 'Pathway 1'). As performed in EPPO PRAs, the likelihood of entry can be expressed on a five-level scale (very low, low, moderate, high, very high) with an uncertainty on a three-level scale (low, moderate, high). Reasons for the uncertainty rate (when moderate or high) can be recorded. If this section considered a broad pathway, but the information above indicates a different likelihood and uncertainty for different commodities (including types of commodity and species) or origins, several sub-pathways can be rated here. Users can refer to PRAs of similar pests which may guide for ratings (e.g. using the EPPO platform on PRAs)

8.1 Pathways investigated in detail.

EJEMPLO DE CONTESTACIÓN AL ESQUEMA LARGO PARA VÍA DE ENTRADA 1

(VERSIÓN UTILIZADA PARA B.INVADENS)

8.1 Pathways investigated in detail.

Pathway 1: Fruits of major hosts from countries where the pest occurs

1.3a Is this pathway a commodity pathway?

International trade with the EPPO region is recorded for these fruits considered as major hosts:
*Annona muricata (*Sour sop), *Carica papaya, Citrus x paradisi* (grapefruit)*, Citrus reticulata, Citrus sinensis, Citrus x tangelo, Eriobotrya japonica, Fortunella japonica, Fortunella margarita, Irvingia gabonensis, Mangifera indica, Psidium guajava, Psidium littorale, Spondias cytherea, Spondias mombin, Vitellaria paradoxa.*

No international trade with the EPPO region is recorded to date for these fruits considered as minor hosts, but the situation may change: *Chrysophyllum albidum* (edible fruit with national market in Benin), *Diospyros montana, Terminalia catappa.*

8.1 Pathways investigated in detail.

Pathway 1: Fruits of major hosts from countries where the pest occurs

1.3a Is this pathway a commodity pathway?

Se debe recopilar información del comercio de estos frutos en **Azores y Madeira**

Canarias: Parece ser un comercio muy minoritario y debe estudiarse en profundidad. Entre 2018 y 2019 sólo hay datos de mangos procedentes de Senegal y Burkina Faso. 12.000 kg en total.

Senegal, Cabo Verde:? Existen vías evaluadas por *B. dorsalis*

8.1 Pathways investigated in detail.

1.3b How likely is the pest to be associated with the pathway at origin taking into account factors such as the occurrence of suitable life stages of the pest, the period of the year?

In countries where *B. dorsalis* is present, **potential host plants are available all year** and the pest can develop all year round (Mwatawala *et al.*, 2009). Consequently, suitable life stage of the pest are present when fruits mentioned above are present, and the association is likely.

The EWG considered that the likelihood of association is **lower for immature mangoes, or for cultivars fruiting ealier.**

LIKELY, LOW

8.1 Pathways investigated in detail.

1.4 How likely is the concentration of the pest on the pathway at origin to be high, taking into account factors like cultivation practices, treatment of consignments?

Concentration

Concentration may vary according to hosts and to agro-ecological zones. ***B. dorsalis*** **occurs significantly on major hosts** .Hosts and abundance of hosts vary between agro-ecological zones, It should be noted that populations of ***B. dorsalis*** **can occur in fluctuating quantities according to the season, but seem to be positively correlated with rainy seasons** (Mwatawala *et al.* 2009; Vayssières *et al*., 2009). Rainy seasons can vary, depending on the geographic region. This applies to Africa and data for other regions are missing.

Existing cultivation practices

Treatments during the growing season: treatment with plant protection products such as **GF120 (Spinosad) has given good results in controlling *B. dorsalis* in mango orchards** (Vayssières *et al.*, 2009). Nevertheless, such phytosanitary treatments are not very commonly applied in particular in small production units in contrast to commercial orchards. Costs of treatments is also a reason for **lack of treatment in orchards.** Treatments with GF120 (Spinosad) could nevertheless be an option for the future in combination with sanitation activities

8.1 Pathways investigated in detail.

1.4 How likely is the concentration of the pest on the pathway at origin to be high, taking into account factors like cultivation practices, treatment of consignments?

Post harvest treatment: the cleaning and sorting of fruits, particularly mango are supposed to remove heavily infested fruits for which some signs of contamination are visible. **Tephritidae (non European) are already present in these infested areas and post-harvest treatment** is necessary before issuing of a PC to guarantee freedom.

LIKELY ; MEDIUM

8.1 Pathways investigated in detail.

1.5 How large is the volume of the movement along the pathway?

Information is not available for all fruits of major hosts. Information of the trade of fruits of *Annona muricata* (Sour sop), *Eriobotrya japonica, Fortunella margarita, Irvingia gabonensis, Spondias cytherea, Spondias mombin, Vitellaria paradoxa* is missing.

MAJOR?; LOW?

1.6 How frequent is the movement along the pathway?

Guavas, mangoes and papayas are imported all year round from countries where *B. dorsalis* occurs

VERY OFTEN? , LOW?

8.1 Pathways investigated in detail.

1.7 How likely is the pest to survive during transport /storage?

Eggs, larvae and rarely pupae are found inside the fruits and **are protected from adverse conditions**. It is therefore very likely that **the pest will survive transport and storage conditions of fruits**.

The mangoes coming from subsaharian Africa are usually **transported at temperatures around 9°C (between 7 and 11°C) in shipped container**, and around **12°C by airplane** (Guichard & Félicité-Zulma, pers. com., 2009). In **passengers** planes, the temperature is supposed to be at around **15°C** (McGregor, 1987), and these conditions are suitable for *B. dorsalis* to survive as pre-imaginal stages.

Interceptions is the proof that this pest can survive during transport

VERY LIKELY, LOW

8.1 Pathways investigated in detail.

1.8 How likely is the pest to multiply/increase in prevalence during transport /storage?

Tephritidae are **not recorded as reproducing during transport or long-period storage.**
The species is multivoltine (i.e. several generations/year) with an average **life span of about 3 months**, and **pupal development lasts about 12 days** (Ekesi et al., 2006).
Transport of fruits can be done by airplane for high quality fruits, it does not take more than **6 to 10 hours**, and the species can therefore not reproduce.
Through shipping, the transport conditions are not suitable for reproduction
Some hosts may be stored, but reproduction is unlikely.

VERY UNLIKELY; LOW

1.9 How likely is the pest to survive or remain undetected during existing management procedures (including phytosanitary measures)?

The detection by visual inspection of fruits **is difficult** since the inspector would have to look for signs of oviposition punctures. It is broadly recognized in phytosanitary inspection that both *Anastrepha spp*. and *Bactrocera spp*. punctures are even more difficult to detect than *Ceratitis* spp (Spanish NPPO, pers. com., 2009). **A proper inspection implies suspected fruit being cut open** in order to look for larvae, and even if detected, larvae of *B. dorsalis* may be confused with other tephritid species. Nevertheless, **fruit flies may easily go undetected even if the fruit is dissected (**White & Elson-Harris, 1992).
The older the infestation the better the chances of detection due to the fact that the fruit will show some symptoms (discoloration around punctures, brownish rings, visible dejections, etc.) (Vayssières *et al*., 2008). **The ease of detection also depends on the varieties** (e.g. easier to see in yellow varieties of mango) and maturation stage of the fruit.

As a conclusion, the **EWG assumed that visual inspection does not give enough guaranties against Tephritidae**. This is supported by existing legislation in many countries that do not rely solely on visual inspections of consignments for fruit flies (e.g. USA, China, Australia, Japan, South Korea, etc.).

LIKELY , LOW

8.1 Pathways investigated in detail.

1.10 How widely is the commodity to be distributed throughout the PRA area?

Due to the limited extension of the majority of the territory within the Macaronesian Region and the high dispersal capacity of the pest it is believed that whether introduced into an island the commodity will be distributed throughout the island

VERY WIDELY, LOW

1.11 Do consignments arrive at a suitable time of year for pest establishment?

At least, major hosts such as mangoes and guava, as well as papaya are imported all year.

Within the Macaronesian Region it is believed that during all the year the pest will find suitable conditions for establishment except in the driest islands during the dry season

YES. LOW?

8.1 Pathways investigated in detail.

1.12 How likely is the pest to be able to transfer from the pathway to a suitable host or habitat?

Eggs and larvae, and rarely pupae of *B. dorsalis* might contaminate fruits of host plants. In all cases, at least one mated female or **one female with one male will need to be present to start a breeding population**. Each female can lay on average 700 eggs, depending on the host (Vayssières *et al*., 2008a). It is therefore very likely that there will be both female(s) and male(s) within a single infested fruit. About 55% of eggs developed to the adult stage. After finding a partner and mating, **the life cycle of the pest will be completed only in case females find hosts for oviposition**. The successive and successful completion of all these events is required for pest transfer.

Transport and storing of such commodities is not supposed to be as long as to allow the eggs or larvae to reach the adult stage. Additionally, in case the commodities are stored, the **cold conditions to conserve the commodities are very likely to block the development of eggs or larvae.**

8.1 Pathways investigated in detail.

1.12 How likely is the pest to be able to transfer from the pathway to a suitable host or habitat?

In the Macaronesian Region, fruits of hosts are available all year round:
- from September till June, *Citrus* spp. are available,
- from October to November, mangoes are available
- from May till September, fruits of other hosts are available.

MODERATELY LIKELY, LOW

8.1 Pathways investigated in detail.

1.13 How likely is the intended use of the commodity (e.g. processing, consumption, planting, disposal of waste, by-products) to aid transfer to a suitable host or habitat?

The intended use of the commodities may be either fresh consumption or processing:

Fresh Consumption
Consignments of imported fruits and vegetables **can be transported to be handled before being sold,** and these places might be located in the vicinity of production areas.

Additionally, hosts plants are common and are very likely to be present. **Contaminated fruits may be discarded outdoors, allowing *B. dorsalis* to develop and fly away.**

When consignments of fruits and vegetables are transported to be **sold on markets and in supermarket,** infested fruits could as well be discarded outdoors, allowing *B. dorsalis* to develop and fly away.
When the infested fruits or vegetables are noticed by consumers, the species could only develop and fly away if the commodity is composted. **The increasing interest in composting of plant waste by individuals increases this possibility.** In general, it is supposed that the trash would be incinerated.

8.1 Pathways investigated in detail.

1.13 How likely is the intended use of the commodity (e.g. processing, consumption, planting, disposal of waste, by-products) to aid transfer to a suitable host or habitat?

Processing

EFSA (2007) report that fruits and vegetables intended for processing (e.g. for juice, jam, etc.) are less subject to inspections, but Plant Health regulation makes no such differentiation. As fruits and vegetables intended for processing are commonly of lower quality, they are therefore more susceptible to be infested. Eggs, larvae or pupae unnoticed will be destroyed during the processing. When noticed, the pest may survive if no effective waste disposal procedure is carried out.

Re-export

Consignments can be imported into the Macaronesian region to be re-exported outside the Region The transfer to a suitable host is very unlikely to take place.

MODERATELY LIKELY, LOW

8.1 Pathways investigated in detail.

EJEMPLO DE CONTESTACIÓN AL ESQUEMA CORTO PARA VÍA DE ENTRADA 1

8.1 Pathways investigated in detail.

Pathway 1 Fruits of major hosts from countries where the pest is known to occurs

Pathway	**Pathway 1 Fruits of major hosts from countries where the pest is known to occurs**
Coverage	Fruit commodities moving in trade from host species where the pest occurs. The fruits species concerned are discussed in the row 'Plants concerned'. This pathway includes fruit with or without green parts (leaves and peduncles) associated. **It also covers crates or boxes used for packing of host fruit.** Fruit carried by travellers are covered separately
Pathway prohibited in the PRA area?	Yes in part: Fruits of major hosts are forbidden in Cape Verde, Senegal and the Canary Islands
Pathway subject to a plant health inspection at import?	Yes, in Azores and Madeira there would be inspection to ensure compliance with phytosanitary requirements • Major fruits: Specific measures for Tephritids in Citrus, Fortunella, Poncirus, Mangifera and Prunus • Other major fruits have requisites for different pests that may have an effect on *B.dorsalis* and Visual inspection at the port of entry.
Pest already intercepted?	466 interceptions in fruits in the EU during 2000-2018

Pathway 1 Fruits of major hosts from countries where the pest is known to occurs

Pathway	Pathway 1 Fruits of major hosts from countries where the pest is known to occurs
Plants concerned	More than 300 hosts of *B.dorsalis* (see question 2). Nevertheless, considering: *- regular hosts that are usually relatively highly infested;* *- major hosts for which a large proportion of the samples is infested, number of flies emerging is often very high.* *Should be considered as major hosts the following:* ***Annona muricata (Sour sop), Carica papaya, Chrysophyllum albidum, Citrus x paradisi (grapefruit), Citrus reticulata, Citrus sinensis, Citrus x tangelo, Diospyros montana, Eriobotrya japonica, Fortunella japonica, Fortunella margarita, Irvingia gabonensis, Mangifera indica, Psidium guava, Psidium littorale, Spondias cytherea, Spondias mombin, Terminalia catappa, Thevetia peruviana, Vitellaria paradoxa.*** *EPPO, 2010*
Most likely stages that may be associated	Eggs and larvae
Important factors for association with the pathway	In countries where *B. dorsalis* is present, potential host plants are available all year and the pest can develop all year round (Mwatawala *et al.*, 2009). Consequently, suitable life stage of the pest are present when fruits mentioned above are present, and the association is likely. The likelihood of association is lower for immature mangoes, or for cultivars fruiting ealier. Although itdepends on the hosts; there is high prevalence of the pest in the field. Life stages are inside the fruits.

Pathway 1 Fruits of major hosts from countries where the pest is known to occurs

Pathway	Pathway 1 Fruits of major hosts from countries where the pest is known to occurs
Survival during transport and storage	Hosts would be transported in conditions favorable to the fruits. Eggs, larvae are found inside the fruits and are protected from adverse conditions. It is therefore very likely that the pest will survive transport and storage conditions of fruits. Pupae could be present in boxes or containers The mangoes coming from sub-Saharan Africa are usually transported at temperatures around 9°C (between 7 and 11°C) in shipped container, and around 12°C by airplane (Guichard & Félicité-Zulma, pers. com., 2009). In passengers planes, the temperature is supposed to be at around 15°C (McGregor, 1987), and these conditions are suitable for *B. dorsalis* to survive as pre-imaginal stages. Interceptions indicate the capacity of survival of *Bactrocera* spp. Transport may occur under cool conditions, which would not impact survival but probably slow development. Life stages in the fruit can survive. Through shipping, the transport conditions are not suitable for reproduction Some hosts may be stored, but reproduction is unlikely.
Trade	It is unknown the existing trade of these fruits within the Macaronesia Region Canary Islands : Tropical fruits are forbidden Senegal, Cabo Verde:

Pathway 1 Fruits of major hosts from countries where the pest is known to occurs

Pathway	Pathway 1 Fruits of major hosts from countries where the pest is known to occurs
Transfer to a host	Due to the limited extension of the majority of the territory within the Macaronesia Region and the high dispersal capacity of the pest it is believed that whether introduced into an island the commodity will be distributed throughout the island At least, major hosts such as mangoes and guava, as well as papaya are imported all year. Within the Macaronesian Region it is believed that during all the year the pest will find suitable conditions for establishment except in the driest islands during the dry season In the Macaronesian Region, fruits of hosts are available all year round: - from September till June, *Citrus* spp. are available, - from October to November, mangoes are available - from May till September, fruits of other hosts are available. Eggs and larvae, and rarely pupae of *B. dorsalis* might contaminate fruits of host plants. In all cases, at least one mated female or one female with one male will need to be present to start a breeding population. Each female can lay on average 700 eggs, depending on the host (Vayssières *et al*., 2008a). It is therefore very likely that there will be both female(s) and male(s) within a single infested fruit. About 55% of eggs developed to the adult stage. After finding a partner and mating, the life cycle of the pest will be completed only in case females find hosts for oviposition. The successive and successful completion of all these events is required for pest transfer. The intended use of the commodities may be either fresh consumption or processing: *Fresh Consumption* Consignments of imported fruits and vegetables can be transported to be handled before being sold, and these places might be located in the vicinity of production areas.

Pathway 1 Fruits of major hosts from countries where the pest is known to occurs

Pathway	Pathway 1 Fruits of major hosts from countries where the pest is known to occurs
Transfer to a host (CONT)	Additionally, hosts plants are common and are very likely to be present. Contaminated fruits may be discarded outdoors, allowing *B. dorsalis* to develop and fly away. When consignments of fruits and vegetables are transported to be sold on markets and in supermarket, infested fruits could as well be discarded outdoors, allowing *B. dorsalis* to develop and fly away. When the infested fruits or vegetables are noticed by consumers, the species could only develop and fly away if the commodity is composted. The increasing interest in composting of plant waste by individuals increases this possibility. In general, it is supposed that the trash would be incinerated. *Processing* EFSA (2007) report that fruits and vegetables intended for processing (e.g. for juice, jam, etc.) are less subject to inspections, but Plant Health regulation makes no such differentiation. As fruits and vegetables intended for processing are commonly of lower quality, they are therefore more susceptible to be infested. Eggs, larvae or pupae unnoticed will be destroyed during the processing. When noticed, the pest may survive if no effective waste disposal procedure is carried out. *Re-export* Consignments can be imported into the Macaronesian region to be re-exported outside the Region The transfer to a suitable host is very unlikely to take place

Pathway 1 Fruits of major hosts from countries where the pest is known to occurs

Pathway	Pathway 1 Fruits of major hosts from countries where the pest is known to occurs
Likelihood of entry and uncertainty	Major hosts such as Mangifera indica (mango), Psidium guajava (guava), Carica papaya (papaya) and Citrus spp. (citrus) represent a **likely pathwhay for the entry** of B. dorsalis. The concentration of the pest on these fruits is considered to be high. **Uncertainty is low.** **There is no risk in this pathway where these fruits are forbidden.** **Guava and Papaya may be at risk in Azores and Madeira where not specific measures for Tephritids are put in places** **Cabo Verde and Senegal may be at risk if authorized pathways were evaluated before *B.dorsalis* was found in the counties of origin.**

8.1 Pathways investigated in detail.

EJEMPLO DE CONTESTACIÓN AL ESQUEMA LARGO PARA VÍA DE ENTRADA 2

(VERSIÓN UTILIZADA PARA B.INVADENS)

8.1 Pathways investigated in detail.

Pathway 2: Fruits of MINOR hosts from countries where the pest occurs

La principal diferencia es el grado de asociación con la mercancía

MODERATELY LIKELY

Los datos de comercio son inciertos como con los principales hospedantes

El resto de parámetros no sufre variaciones

8.1 Pathways investigated in detail.

EJEMPLO DE CONTESTACIÓN AL ESQUEMA LARGO PARA VÍA DE ENTRADA 3

(misma metodología)

8.1 Pathways investigated in detail.

EJEMPLO DE CONTESTACIÓN AL ESQUEMA LARGO PARA VÍA DE ENTRADA 4

(VERSIÓN UTILIZADA PARA B.INVADENS)

8.1 Pathways investigated in detail.

Pathway 4: PASSENGERS

1.3 ASSOCIATION (BIOLOGY)

In countries where *B. dorsalis* is present, **potential host plants are available all year** and the pest can develop all year round (Mwatawala *et al.*, 2009). Consequently, **suitable life stage of the pest are present when fruits mentioned above are present**, and the association is likely.

White & Elson-Harris (1992) report that **many fruit fly outbreaks may be attributable to undetected imports of a few fruits in an airline passenger's baggage.** This has also been recognized in later studies, as pre-departure interceptions in Puerto Rico from **1994 to 1996** revealed the presence of *Anastrepha* spp. in mangoes in **158 different occasions** (Miller, 1997).

Additionally, Liebhold *et al*. (2006) report that infested fruits appear to be most commonly found in the baggage of passengers arriving from developing countries, which is the situation of many countries where *B. dorsalis* is known to occur. Passengers could potentially bring back from countries they visit fruits that would be contaminated with *B. dorsalis*. **Passengers in airplanes cars and ferries between tropical Africa or Asia and the Macaronesian Region are also a pathway**, and this pathway is further considered.

8.1 Pathways investigated in detail.

Pathway 4: PASSENGERS

1.3 ASSOCIATION (BIOLOGY)

In mangoes, most egg-laying takes place at the pre-ripening and ripening stages, making *B. dorsalis* less likely to be present in fruits to be carried by passengers than comercially traded fruits, as they might bring mature fruits.

LIKELY, MEDIUM

8.1 Pathways investigated in detail.

1.4 ASSOCIATION (PRACTICES)

Concentration

Concentrations vary according to hosts and are **likely to be high on major hosts, and moderate in minor hosts**. Populations of ***B. dorsalis*** **can occur in fluctuating quantities according to the season, but seem to be positively correlated with rainy seasons** ((Mwatawala *et al.* 2009; Vayssières *et al*., 2009). When the rainy season occurs depends on the geographic region. This applies to Africa and data for other regions are missing.

The general public **(passengers) could bring fruits of mango, guava or any fruits as host bought in markets or taken in private orchards**. These plants are, therefore, less subject to controls than commercially imported plants. Fruit might even be untreated. Thus, the concentration of the pest might be even higher than in commercial consignments.

Passengers are not trained to recognize pests on fruits and may overlook the pest.

8.1 Pathways investigated in detail.

1.4 ASOCIATION (PRACTICES)

Treatment

Fruits carried by passengers might come from domestic markets or private orchards. In the vast majority of cases, they would **not have been officially inspected and certified for export** by the NPPO in the country of origin.

Consequently, the product may not meet the quality and plant health standards required for the international trade of fresh fruits. **If it is grown in a private garden, no pest management, washing or sorting takes place during its production**. Thus, **the concentration of the pest might well be higher than in commercial consignments**

VERY LIKELY, MEDIUM

8.1 Pathways investigated in detail.

1.5 VOLUMEN

Although there are many passengers crossing borders, **not all passengers will bring back fruits after visiting countries** where the pest occurs. Pre-departure interceptions in Puerto Rico from 1994 to 1996 revealed the presence of *Anastrepha* spp. in mangoes in 158 different luggage even though it is absolutely forbidden (APHIS, 1997).
In France, tropical fruit importers report that they cannot sell some niche species to retailers because of the competition with passengers (D. Félicité Zulma, pers. com., 2009).
Additionally, communities originating from countries where *B. invadens* occurs have a cultural heritage which includes giving fruit as gifts, including (even especially) when the recipient is going away. Therefore they bring back fruits. Tourists bring back fruit as a souvenir from countries they visit

MODERATE, HIGH (UNLIKELY IN MACARONESIA, BUT HIGHLY RISKY IN ANY CASE?)

8.1 Pathways investigated in detail.

1.6 FRECUENCY

Information is lacking on the frequency of passengers bringing fruits. The EWG considered that the frequency should be ranked at least “occasionally

OCASSIONALLY, HIGH

1.7 TRANSPORT SURVIVAL

Eggs, larvae and most rarely pupae are found inside the **fruits and are protected from adverse conditions.**

Baggage conditions are adequate for larval development. However, survival also depends on the way of transport: sea, car and ferries travels are sufficiently slow to think that infested fruit would have been consumed or discarded in transit; therefore, **airline traffic is considered more important** (Joomaye *et al*., 1999; Caton & Griffith, 2005).

VERY LIKELY, LOW

8.1 Pathways investigated in detail.

1.8 MULTIPLY IN TRANSPORT

The species is multivoltine (i.e. several generations/year) with an average life span of about 3 months, and pupal development lasts about 12 days (Ekesi *et al*., 2006).
The passengers' travel is not likely to last more than a few days, which does not allow the species to reproduce.

VERY UNLIKELY, LOW

8.1 Pathways investigated in detail.

1.9 VISUAL INSPECTION

In EU countries, according to EU regulation, provided that there is no risk of harmful organisms spreading in the Community, small quantities of fruits, when intended for non-industrial and non-commercial purposes, or for consumption during transport need not be subject to custom supervision or plant health inspection.

The NPPOs of the EU member states have the authority to limit the quantity allowed per passenger. Nevertheless, there is usually no implementation of such supervision, nor publicity on this measure.

LIKELY, LOW

1.10 DISTRIBUTION

Passengers may travel in the whole Macaronesian region.

VERY WIDELY, LOW

8.1 Pathways investigated in detail.

1.11 SUITABLE TIME ARRIVAL

Passengers travel all year round.

YES, LOW

1.12 TRANSFER

Hosts are available all year round

MODERATELY LIKELY, MEDIUM

8.1 Pathways investigated in detail.

1.13 INTENDED USE

The species could only develop and fly away if the commodity is composted or thrown outdoors. The increasing interest in composting of plant waste by individuals increases this possibility. A single infested fruit could develop a population.
The risk is low in cities, but is higher in the countryside.

MODERATELY LIKELY, MEDIUM

8.2 Unlikely pathways: very low likelihood of entry

8.2 Unlikely pathways: very low likelihood of entry

Pathway 5: Natural spread

B. dorsalis is supposed to have a high mobility (as Tephritidae, and *B. zonata* for instance, EPPO 2002).

Natural spread could occur between Mauritania and Canary islands (Fuerteventura)

As *B. dorsalis* is polyphagous, it is expected that at least one host could being cultivated.

From one island can jump to another.

There is a main road (N1 built in 2006 or 2007) between Nouakchott (in Mauritania) and Al Dahla (in Morocco, Western Sahara), followed by a road between Al Dahla and Agadir. Some oases are present along these roads, which would allow *B. dorsalis* to progress assuming that host plants are present. Natural spread in this region remains less likely than along the Nile.

EPPO, 2010

This pathway was considered moderately likely with a high uncertainty, and was considered to take a longer time than other pathways linked to international trade, hence not to happen in the immediate future.

What should us consider in the Macaronesian Region?

8.2 Unlikely pathways: very low likelihood of entry

Pathway 6: Fruits of hosts in mail

Fruits of hosts can be sent in mail either by individual people or by private companies. This pathway is not considered further as it is considered unlikely due to the price of sending fruits by mail. Nevertheless, whilst admittedly a minor pathway this does exist as Fera PHSI intercepted 24 illegal imports of fruit in mail from July 2009 – April 2010, mainly Malus, Citrus and Mangifera (Paul Bartlett, pers comm.., 2010).

Pathway 7: Cut branches with fruits used for ornamental purposes

On flower markets, cut branches with fruits such as *Coffea arabica* and *Coffea canephora* are a new niche, used for ornamental purposes. This has been observed in Rungis (D. Félicité-Zulma, pers. com., 2009). This pathway is considered anecdotic and is not developed further.

EPPO, 2010

8.2 Unlikely pathways: very low likelihood of entry

Pathway 8: Hitchhiker on commodities
This is a theoretical pathway which has never been recorded. It is very unlikely that flying adults would hide in containers, they would usually rather fly away. This pathway is therefore considered very unlikely and is not considered further.

Pathway 9: Growing media in non host plants for planting
Pupae could be present in the growing media accompanying plants for planting which would have been grown in the vicinity of contaminated hosts. This pathway is considered to be very unlikely and is not considered further.

Patway 10: Soil as a commodity
Pupae could be present in soil imported as a commodity. This pathway is usually prohibited and is not considered further.

Pathway 11: Soil attached to machinery
Pupae could be present in the soil attached to machinery. This pathway has never been reported for Tephritidae and is considered very unlikely and is therefore not considered further.

EPPO, 2010

8.3 Overall rating of the likelihood of entry Probability

		PROBABILITY			
QUESTION		MAJOR HOSTS	MINOR HOSTS	PLANTS with FRUITS (PUPAE)	PASSENGERS
1.3	Association (biology)				
1.4	Association (Practices)				
1.5	Volumen				
1.6	Frecuency				
1.7	Transport survival				
1.8	Transport reproduction				
1.9	Visual inspection				
1.10	Distribution				
1.11	Suitability time arrival				
1.12	Transfer				
1.13	Intended Use				

8.3 Overall rating of the likelihood of entry Probability

		PROBABILITY			
QUESTION		MAJOR HOSTS	MINOR HOSTS	PLANTS with FRUITS (PUPAE)	PASSENGERS
1.3	Asociation (biology)	Likely	Moderately likely	Moderately likely	Likely
1.4	Asociation (Practices)	Likely	Moderately likely	Moderately likely	Very likely
1.5	Volumen	?	?	Minimal	Moderate
1.6	Frecuency	?	?	Low	Ocassionally
1.7	Transport survival	Very Likely	Very Likely	Very Likely	Very Likely
1.8	Transport reproduction	Very Unlikely	Very Unlikely	Very Unlikely	Very Unlikely
1.9	Visual inspection	Likely	Likely	Likely	Very Likely
1.10	Distribution	Very widely	Very widely	Widely?	Very widely
1.11	Suitability time arrival	Yes	Yes	Yes	Yes
1.12	Transfer	Moderately likely	Moderately likely	Likely	Moderately likely
1.13	Intended Use	Moderately likely	Moderately likely	Likely	Moderately likely
		LIKELY	MODERATELY LIKELY	MODERATELY LIKELY	MODERATELY LIKELY

8.3 Overall rating of the likelihood of entry Probability

		PROBABILITY			
QUESTION		MAJOR HOSTS	MINOR HOSTS	PLANTS with FRUITS (PUPAE)	PASSENGERS
1.3	Asociation (biology)	Likely	Moderately likely	Moderately likely	Likely
1.4	Asociation (Practices)	Likely	Moderately likely	Moderately likely	Very likely
1.5	Volumen	?	?	Minimal	Moderate
1.6	Frecuency	?	?	Low	Ocassionally
1.7	Transport survival	Very Likely	Very Likely	Very Likely	Very Likely
1.8	Transport reproduction	Very Unlikely	Very Unlikely	Very Unlikely	Very Unlikely
1.9	Visual inspection	Likely	Likely	Likely	Very Likely
1.10	Distribution	Very widely	Very widely	Widely?	Very widely
1.11	Suitability time arrival	Yes	Yes	Yes	Yes
1.12	Transfer	Moderately likely	Moderately likely	Likely	Moderately likely
1.13	Intended Use	Moderately likely	Moderately likely	Likely	Moderately likely

LIKELY	MODERATELY LIKELY	MODERATELY LIKELY	MODERATELY LIKELY

8.3 Overall rating of the likelihood of entry Uncertainty

		UNCERTAINTY			
QUESTION		MAJOR HOSTS	MINOR HOSTS	PLANTS	PASSENGERS
1.3	Asociation (biology)				
1.4	Asociation (Practices)				
1.5	Volumen				
1.6	Frecuency				
1.7	Transport survival				
1.8	Transport reproduction				
1.9	Visual inspection				
1.10	Distribution				
1.11	Suitability time arrival				
1.12	Transfer				
1.13	Intended Use				

8.3 Overall rating of the likelihood of entry Uncertainty

		UNCERTAINTY			
QUESTION		MAJOR HOSTS	MINOR HOSTS	PLANTS	PASSENGERS
1.3	Association (biology)	Low	Low	High	Medium
1.4	Association (Practices)	Medium	Medium	High	Medium
1.5	Volumen	High	High	High	High
1.6	Frecuency	High	High	High	High
1.7	Transport survival	Low	Low	Low	Low
1.8	Transport reproduction	Low	Low	Low	Low
1.9	Visual inspection	Low	Low	Low	Low
1.10	Distribution	Low	Low	Low	Low
1.11	Suitability time arrival	Low	Low	Low	Low
1.12	Transfer	Low	Low	Low	Medium
1.13	Intended Use	Low	Low	Low	Medium
		LOW?	LOW?	LOW?	LOW?

8.3 Overall rating of the likelihood of entry Uncertainty

		UNCERTAINTY			
QUESTION		MAJOR HOSTS	MINOR HOSTS	PLANTS	PASSENGERS
1.3	Asociation (biology)	Low	Low	High	Medium
1.4	Asociation (Practices)	Medium	Medium	High	Medium
1.5	Volumen	High	High	High	High
1.6	Frecuency	High	High	High	High
1.7	Transport survival	Low	Low	Low	Low
1.8	Transport reproduction	Low	Low	Low	Low
1.9	Visual inspection	Low	Low	Low	Low
1.10	Distribution	Low	Low	Low	Low
1.11	Suitability time arrival	Low	Low	Low	Low
1.12	Transfer	Low	Low	Low	Medium
1.13	Intended Use	Low	Low	Low	Medium

LOW?	LOW?	LOW?	LOW?

8.3 Overall rating of the likelihood of entry

Fruits of major and minor hosts

Major hosts such as *Mangifera indica* (mango), *Psidium guajava* (guava), *Carica papaya* (papaya) and *Citrus* spp. (citrus) represent a **likely pathwhay** for the entry of *B. dorsalis*. The concentration of the pest on these fruits is considered to be high. Uncertainty is low.

It is **likely** that major hosts such as provide a pathway for the entry of *B. dorsalis.*

8.3 Overall rating of the likelihood of entry

Fruits of major and minor hosts

Minor hosts such as *Capsicum annuum, Capsicum frutescens, Citrullus lanatus, Cucumis melo, Cucumis sativus, Cucurbita* sp., *Lycopersicum esculentum, Malus domestica, Musa* sp. and *Persea americana, Prunus persica* (peach) represent a **moderately likely** pathway.
The concentration of the pest on these fruits is considered to be lower than on major hosts.
Uncertainty is low.

Canary islands?
No risk, as it is already covered by the existing regulation?.

8.3 Overall rating of the likelihood of entry

Plants for planting with growing media (except seeds)

The uncertainty on this pathway is high.

EU countries and non EU countries

For non EU EPPO countries, the regulation is supposed to be aligned with the EU regulation.

It is **unlikely** that plants for planting with growing media of hosts provide a pathway for the entry of *B. dorsalis*, entering as pupae in the growing media.
It is **moderately likely** that plants for planting with fruits could provide a patwhay for the entry of *B. dorsalis*, but it is currently a closed pathway for many EPPO countries.

In the EU, as long as plants of *Solanaceae, Citrus spp.* and *Fortunella* spp. are prohibited, they do not provide a pathway of entry for *B. dorsalis*

8.3 Overall rating of the likelihood of entry

Fruits carried with passengers

It is **moderately likely** that infested fruits carried by passengers provide a pathway of entry for *B. invadens.*

Natural spread

It is **unlikely** that *B. invadens* could enter the Mediterranean EPPO region by natural means in the near future.

It is to be noted that the establishment in any Mediterranean third country, or the Canary Islands would increase the risk of entry from all pathways, especially Citrus and tomato fruit imports and plants for planting (some current restrictions would no longer apply, eg. no prohibition for Solanaceae).

8.3 Overall rating of the likelihood of entry

The different patwhays identified are:

- Fruits of major hosts from countries where the pest occurs
- Fruits of minor hosts from countries where the pest occurs
- Plants for planting with growing medium attached (except seeds)
- Fruits carried with passengers
- Natural spread
- Cut branches with fruits used for ornamental purposes
- Growing media in non hosts plants for planting
- Hitchhiker on commodities
- Soil as a commodity
- Soil attached to machinery

EPPO, 2010?

FUSARIUM OXYSPORIUM F. SP. CUBENSE TR4

EPPO EXPRES PRA

Etapa 2: Evaluación del Riesgo de Plagas

(CONT.)

8. Pathways for entry

8.1 Pathways investigated in detail.

Suggested tables may be used to investigate pathways more in detail

8.2 Unlikely pathways: very low likelihood of entry

Pathways with a very low likelihood of entry should be listed here. It is useful to provide a rationale for the very low likelihood.

8.3 Overall rating of the likelihood of entry

Vías de entrada. Discusión

A raíz de la información existente podrían existir las siguientes vías de entrada

1) Plantas destinadas a plantación del género Musa (excepto plantas in vitro testadas y producidas en medio estéril)
2) Plantas in vitro testadas y producidas en medio estéril
3) Plantas ornamentales destinadas a plantación de especies hospedantes
4) Plantas ornamentales de especies hospedantes
5) Pasajeros provenientes de países con presencia de la plaga que puedan haber estado en campos de cultivo infectados
6) Pasajeros con plantas o alimentos envueltos en hojas de plátano
7) Suelo de lugares infectados

Vías de entrada. Discusión

A raíz de la información existente podrían existir las siguientes vías de entrada

8) Compost de lugares afectados
9) Dispersión natural
10) Maquinaría procedente de lugares infectados
11) Frutos de banana en contenedores (con restos de hojas y cultivos)
12) Frutos de banana
13) Hojas de banana u otros hospedantes para fines ornamentales
14) Herramientas utilizadas en áreas afectadas
15) Vehículos procedentes de áreas afectadas

Vías de entrada. Discusión

SELECCIÓN DE LAS VIAS DE ENTRADA DE MAYOR RELEVANCIA PARA LA REGIÓN MACARONÉSICA

A raíz de la información existente podrían existir las siguientes vías de entrada

1) Plantas destinadas a plantación del género Musa (excepto plantas in vitro testadas y producidas en medio estéril)
2) Plantas ornamentales destinadas a plantación de especies hospedantes
3) Plantas ornamentales de especies hospedantes
4) Pasajeros provenientes de países con presencia de la plaga que puedan haber estado en campos de cultivo infectados
5) Pasajeros con plantas o alimentos envueltos en hojas de plátano

8.3 Overall rating of the likelihood of entry Plant material

		PROBABILITY		UNCERTAINTY
QUESTION		PLANT MATERIAL	COMENTARIOS	
1.3	Asociation (biology)			
1.4	Asociation (Practices)			
1.5	Volumen			
1.6	Frecuency			
1.7	Transport survival			
1.8	Transport reproduction			
1.9	Visual inspection			
1.10	Distribution			
1.11	Suitability time arrival			
1.12	Transfer			
1.13	Intended Use			

8.3 Overall rating of the likelihood of entry Plant material

		PROBABILITY		UNCERTAINTY
QUESTION		PLANT MATERIAL	COMENTARIOS	
1.3	Association (biology)	Very Likely	El hongo está presente en los "suckers" habitualmente utilizados para plantación que además son asintomáticos	Low
1.4	Asociation (Practices)	Very Likely	Las prácticas no impiden la contaminación	Low
1.5	Volumen	Minimal	Este tipo de material está prohibido	Medium
1.6	Frecuency	Very rare	Este tipo de material está prohibido	Low
1.7	Transport survival	Very Likely	Las condiciones de transporte no inciden en la capacidad de supervivencia del hongo	Low
1.8	Transport reproduction	Very Likely	El hongo puede seguir su proceso de infección durante el transporte	Low
1.9	Visual inspection	Very Likely	La inspección visual no es suficiente sin un análisis y el hongo es además asintomático en fases tempranas que es cuando se utiliza este tipo de material	Low
1.10	Distribution	Limited		Medium
1.11	Suitability time arrival	Yes	Al desarrollarse internamente no debe verse frenado por las condiciones climáticas	Low
1.12	Transfer	Very Likely	Se trata de plantas destinadas a ser plantadas	Low
1.13	Intended Use	Very likely	Se trata de plantas destinadas a ser plantadas	Low
		Moderately Likely	El único factor limitante es la ausencia de comercio	Low

8.3 Overall rating of the likelihood of entry Plant material

		PROBABILITY		UNCERTAINTY
QUESTION		PLANT MATERIAL	COMENTARIOS	
1.3	Asociation (biology)	Very Likely	El hongo está presente en los "suckers" habitualmente utilizados para plantación que además son asintomáticos	Low
1.4	Asociation (Practices)	Very Likely	Las prácticas no impiden la contaminación	Low
1.5	Volumen	Minimal	Este tipo de material está prohibido	Medium
1.6	Frecuency	Very rare	Este tipo de material está prohibido	Low
1.7	Transport survival	Very Likely	Las condiciones de transporte no inciden en la capacidad de supervivencia del hongo	Low
1.8	Transport reproduction	Very Likely	El hongo puede seguir su proceso de infección durante el transporte	Low
1.9	Visual inspection	Very Likely	La inspección visual no es suficiente sin un análisis y el hongo es además asintomático en fases tempranas que es cuando se utiliza este tipo de material	Low
1.10	Distribution	Limited		Medium
1.11	Suitability time arrival	Yes	Al desarrollarse internamente no debe verse frenado por las condiciones climáticas	Low
1.12	Transfer	Very Likely	Se trata de plantas destinadas a ser plantadas	Low
1.13	Intended Use	Very likely	Se trata de plantas destinadas a ser plantadas	Low

8.3 Overall rating of the likelihood of entry Passengers

		PROBABILITY		UNCERTAINTY
QUESTION		PASSENGERS	COMENTARIOS	
1.3	Asociation (biology)			
1.4	Asociation (Practices)			
1.5	Volumen			
1.6	Frecuency			
1.7	Transport survival			
1.8	Transport reproduction			
1.9	Visual inspection			
1.10	Distribution			
1.11	Suitability time arrival			
1.12	Transfer			
1.13	Intended Use			

8.3 Overall rating of the likelihood of entry Passengers

		PROBABILITY		UNCERTAINTY
	QUESTION	PASSENGERS	COMENTARIOS	
1.3	Asociation (biology)	Likely	El hongo puede estar presente en suelo adherido al calzado y en vuelos en avión llegar en pocas horas.	Low
1.4	Asociation (Practices)	Very Likely	Las prácticas no impiden la contaminación	Low
1.5	Volumen	Minimal	Este tipo de material está prohibido	Medium
1.6	Frecuency	Very rare	Este tipo de material está prohibido	Low
1.7	Transport survival	Very Likely	Las condiciones de transporte no inciden en la capacidad de supervivencia del hongo	Low
1.8	Transport reproduction	Unlikely	Normalmente se tratará de clamisdospsoras que no germinarán en ausencia de hospedantes, raices, exudados.	Low
1.9	Visual inspection	Very Likely	Sólo existen inspecciones aleatorias a pasajeros y no a su calzado	Low
1.10	Distribution	Widespread	El pasajero puede circular libremente	Medium
1.11	Suitability time arrival	Yes	Clamisdosporas	Low
1.12	Transfer	Unlikely	El pasajero debe caminar por campos de cultivo salvo en caso de profesionales	Low
1.13	Intended Use	Unlikely	Salvo en casos de profesionales	Low
		Unlikely	Las distancias con las zonas infectadas son todavía muy grandes aunque el riesgo cambiaría de introducirse en regiones más cercanas	Low

8.3 Overall rating of the likelihood of entry Passengers

		PROBABILITY		UNCERTAINTY
QUESTION		PASSENGERS	COMENTARIOS	
1.3	**Asociation (biology)**	Likely	El hongo puede estar presente en suelo adherido al calzado y en vuelos en avión llegar en pocas horas.	Low
1.4	**Asociation (Practices)**	Very Likely	Las prácticas no impiden la contaminación	Low
1.5	**Volumen**	Minimal	Este tipo de material está prohibido	Medium
1.6	**Frecuency**	Very rare	Este tipo de material está prohibido	Low
1.7	**Transport survival**	Very Likely	Las condiciones de transporte no inciden en la capacidad de supervivencia del hongo	Low
1.8	**Transport reproduction**	Unlikely	Normalmente se tratará de clamisdospsoras que no germinarán en ausencia de hospedantes, raices, exudados.	Low
1.9	**Visual inspection**	Very Likely	Sólo existen inspecciones aleatorias a pasajeros y no a su calzado	Low
1.10	**Distribution**	Widespread	El pasajero puede circular libremente	Medium
1.11	**Suitability time arrival**	Yes	Clamisdosporas	Low
1.12	**Transfer**	Unlikely	El pasajero debe caminar por campos de cultivo salvo en caso de profesionales	Low
1.13	**Intended Use**	Unlikely	Salvo en casos de profesionales	Low
		Unlikely	**Las distancias con las zonas infectadas son todavía muy grandes aunque el riesgo cambiaría de introducirse en regiones más cercanas**	Low

Muchas gracias!!