



Biosecurity (Suspended Goods—Uncooked Prawns) Amendment (Exceptions) Determination 2017

I, Daryl Quinlivan, Director of Biosecurity, make the following determination.

Dated 3 February 2017

Daryl Quinlivan
Director of Biosecurity

Contents

1 Name	3
2 Commencement	3
3 Authority	3
4 Definitions	3
5 Reasons for making this determination	4
6 Schedules	4
Schedule 1—Amendments	5
<i>Biosecurity (Suspended Goods – Uncooked Prawns) Determination 2017</i>	5
Schedule 2—Reasons—prawns sourced from exclusive economic zone	6
Schedule 3—Reasons—dried prawns and shelf-stable prawn-based food products	7
Schedule 4—Reasons—bait for aquatic use, pet fish food and aquaculture feed	10

1 Name

This is the *Biosecurity (Suspended Goods—Uncooked Prawns) Amendment (Exceptions) Determination 2017*.

2 Commencement

- (1) Each provision of this instrument specified in column 1 of the table commences, or is taken to have commenced, in accordance with column 2 of the table. Any other statement in column 2 has effect according to its terms.

Commencement information		
Column 1	Column 2	Column 3
Provisions	Commencement	Date/Details
1. The whole of this instrument	On the day after registration of the instrument	

Note: This table relates only to the provisions of this instrument as originally made. It will not be amended to deal with any later amendments of this instrument.

- (2) Any information in column 3 of the table is not part of this instrument. Information may be inserted in this column, or information in it may be edited, in any published version of this instrument.

3 Authority

This instrument is made under subsection 182(1) of the *Biosecurity Act 2015*.

4 Definitions

Note 1: A number of expressions used in this instrument are defined in the Act, including the following:

- (a) ALOP;
- (b) Australian territory;
- (c) approved arrangement;
- (d) goods.

Note 2: The term “exclusive economic zone” is defined in the *Acts Interpretation Act 1901*.

In this instrument:

Act means the *Biosecurity Act 2015*.

principal determination means the *Biosecurity (Suspended Goods – Uncooked Prawns) Determination 2017*.

proscribed class of goods means the class of goods to which Part 2 of the principal determination applies.

Note: Part 2 of the principal determination applies to uncooked prawns and uncooked prawn meat:

- (a) including uncooked prawns and uncooked prawn meat that have been marinated for human consumption; but
- (b) not including:
 - (i) uncooked prawns and uncooked prawn meat sourced from New Caledonia; or
 - (ii) uncooked prawns and uncooked prawn meat processed into dumplings, spring rolls, samosas, other dim sum-type products and other similar products; or

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- (iii) uncooked prawns and uncooked prawn meat which have been coated for human consumption by being breaded, crumbed or battered.

shelf-stable: goods are **shelf-stable** if:

- (a) the goods have been commercially manufactured; and
- (b) the goods have been packaged by the manufacturer; and
- (c) the goods are in that package; and
- (d) the package has not been opened or broken; and
- (e) the goods are able to be stored in the package at room or ambient temperature; and
- (f) the goods do not require refrigeration or freezing before the package is opened.

WSSV means white spot syndrome virus.

5 Reasons for making this determination

For subsection 182(5) of the Act, my reasons for making this determination are as follows:

- (a) the principal determination suspends the bringing or importing into Australian territory of goods included in the proscribed class of goods;
- (b) having undertaken further assessment of the biosecurity risks associated with the proscribed class of goods, I am of the view that it is possible to except further goods from the suspension, for the detailed reasons set out in:
 - (i) for uncooked prawns sourced from the exclusive economic zone, or uncooked prawn meat sourced from such prawns—Schedule 2; and
 - (ii) for uncooked prawns or uncooked prawn meat processed into dried prawns or a prawn-based food product that is shelf-stable—Schedule 3; and
 - (iii) for uncooked prawns or uncooked prawn meat processed into bait for aquatic use, pet fish food or aquaculture feed—Schedule 4.

6 Schedules

Each instrument that is specified in a Schedule to this instrument is amended or repealed as set out in the applicable items in the Schedule concerned, and any other item in a Schedule to this instrument has effect according to its terms.

Schedule 1—Amendments

Biosecurity (Suspended Goods – Uncooked Prawns) Determination 2017

1 Section 5 (after the heading)

Insert:

Note: This section sets out the reasons for making this determination in its original form. This determination has been amended by the *Biosecurity (Suspended Goods—Uncooked Prawns) Amendment (Exceptions) Determination 2017*. The reasons for making these amendments are set out in the amending determination.

2 Section 6 (note)

Omit “Note”, substitute “Note 1”.

3 Section 6 (after Note 1)

Insert:

Note 2: The term “exclusive economic zone” is defined in the *Acts Interpretation Act 1901*.

4 Section 6

Insert:

shelf-stable: goods are *shelf-stable* if:

- (a) the goods have been commercially manufactured; and
- (b) the goods have been packaged by the manufacturer; and
- (c) the goods are in that package; and
- (d) the package has not been opened or broken; and
- (e) the goods are able to be stored in the package at room or ambient temperature; and
- (f) the goods do not require refrigeration or freezing before the package is opened.

5 Before paragraph 7(3)(a)

Insert:

- (aa) uncooked prawns sourced from the exclusive economic zone, or uncooked prawn meat sourced from such prawns;

6 At the end of subsection 7(3)

Insert:

- ; (d) uncooked prawns or uncooked prawn meat processed into dried prawns or a prawn-based food product that is shelf-stable;
- (e) uncooked prawns or uncooked prawn meat processed into bait for aquatic use, pet fish food or aquaculture feed.

Schedule 2—Reasons—prawns sourced from exclusive economic zone

Note: See subparagraph 5(b)(i).

- There is a very low risk that WSSV could enter the Australian territory with prawns sourced from within the exclusive economic zone (**EEZ**). This very low risk meets Australia's ALOP.
- Prawns sourced from Australia's EEZ are considered either to be free of WSSV or to have a very low prevalence of WSSV.
 - Australia's territorial waters are considered free of WSSV. Prawn populations in Australia's territorial waters are often contiguous with prawn populations in the EEZ. It is reasonable to consider that prawns in the EEZ have an equivalent disease status to prawns in Australia's territorial waters or at least a very low prevalence of WSSV. Recently, two consignments of wild prawns caught in Australia and exported to Thailand and China respectively for processing tested negative for WSSV DNA on return to Australia.
 - WSSV is a notifiable disease in Australia and has not been reported in prawns from the EEZ. Catching prawns in the EEZ represents at least 17% of Australia's total annual prawn catch (at least 3284 tonnes per annum).
- There have not been any reported outbreaks of WSSV in Australia linked to prawns from the EEZ.
- No evidence has been found linking the Logan River outbreak (see paragraph 5(d) of the principal determination) to prawns caught in the EEZ. The risk of WSSV being present in the EEZ has not increased as a result of the Logan River outbreak.
- In general, WSSV outbreaks are rarely observed in wild prawn populations. Prawns in the wild that are affected by WSSV are considered likely to be eaten by non-susceptible predators, which reduces the risk of spread of the disease. The prevalence of WSSV can vary due to seasonal factors but is generally considered low.
- The EEZ, to the extent that it surrounds Christmas Island extends to within close proximity of Indonesian waters where WSSV is endemic in the aquaculture industry. Prawns sourced from that portion of the EEZ are a potential risk for WSSV. However, the Australian Fisheries Management Authority (AFMA) has confirmed it has never issued a licence for prawning within the Australian Fishing Zone of Christmas Island.

Schedule 3—Reasons—dried prawns and shelf-stable prawn-based food products

Note: See subparagraph 5(b)(ii).

Summary of reasons

- Various preparation methods for dried prawns and shelf-stable prawn-based food products are likely to reduce the amount of infective WSSV, if present in the fresh material.
- The 2009 Generic import risk analysis report for prawns and prawn products (the **2009 IRA**) considered that shelf-stable food products containing prawns, such as canned prawns or condiments containing prawns as an ingredient (e.g. prawn balachan, shrimp paste) were unlikely to come into contact with live crustaceans in Australia.
- No new information has come to light since the publication of the 2009 IRA to challenge this assessment.
- Because exposure of susceptible species in Australia through dried prawns and shelf-stable prawn-based food products is unlikely, the biosecurity risk posed by WSSV associated with these products meets Australia's ALOP.

Dried and shelf-stable prawn-based food products

Prior to the *Biosecurity (Suspended Goods – Uncooked Prawns) Determination 2017*, dried prawns and shelf-stable prawn-based food products were approved for import. An import permit was not required for commercial or personal use consignments.

The only intervention was that products may have been subject to physical inspection upon arrival to ensure the goods were dry or shelf-stable and free from other animal or plant material and soil.

Likelihood of entry of WSSV with dried prawns and shelf-stable prawn-based food products

Shelf-stable and dried prawn products are considered to have lower likelihood of contamination with WSSV compared to raw prawn products.

- The preparation of dried or shelf-stable products exposes the prawn material to conditions that are expected, at least partially, to incapacitate the virus. Processes that subject prawn meat to heat, pressure, or chemical treatments such as acidity (pickling), result in denaturing/coagulation of the meat protein. Prawns that are subjected to such processes, or their combinations, are likely to have reduced viral titres compared to their fresh state.
- There are no specific studies on the prevalence or infectivity of WSSV in dried prawns or shelf-stable prawns for human consumption. Various studies assessed the sensitivity

of WSSV to thermal, ultraviolet or pH exposure (Chang 1998, Balasubramanian 2006, Kumar 2013).

- These investigations indicate that WSSV is susceptible to these physical and chemical conditions. For example, WSSV in prawn tissue homogenates was completely inactivated (based on infectivity studies) with 20 minutes heating to 60°C or UV irradiation at $3.1 \times 10^5 \mu\text{W s/cm}^2$ (Balasubramanian 2006).
- Persistent infectivity of WSSV in deceased prawns has been demonstrated:
 - Whole carcasses: retain infectivity for six days at 25.5 – 28.8°C (Wang et al. 2002);
 - Heads: retain infectivity for at least 14 days at 27°C (Prior and Browdy 2002);
 - Tails: retain infectivity for at least 28 days at 27°C (Prior and Browdy 2002).

Likelihood of exposure of WSSV with dried prawns and shelf-stable prawn-based food products

The 2009 IRA considered that shelf-stable products and dried prawns, had a sufficiently low likelihood of exposure to susceptible hosts compared to raw prawn products:

“Shelf-stable food products containing prawns such as dried prawns, canned prawns or condiments containing prawns as an ingredient (e.g. prawn balachan, shrimp paste) are considered to pose a negligible risk because they are highly unlikely to come into contact with live crustaceans in Australia.” (p 176)

- Since the publication of this statement in the 2009 IRA, which underwent both peer review by an eminent scientists group and public consultation opportunities, no new information has come to light to contradict this assessment.
- Preparing prawns for human consumption in a dried or shelf-stable form is considered an effective risk mitigation measure, rendering them highly unlikely to come into contact with live crustaceans. Consequently, dried and shelf-stable prawn preparations are unlikely to represent a direct pathway for the introduction of aquatic animal pathogens into an aquatic environment. No specific studies were identified investigating the potential pathway for shelf-stable products or dried prawns to access exposure groups of concern.
 - Two national surveys of Australian recreational fishermen (Kewagama reports, 2002 and 2007) investigated the use of uncooked aquatic animals (or parts thereof) as bait or berley. ‘Uncooked’ products investigated in the survey included dried or salted preparations, but neither survey identified such products for human consumption as being used by recreational fishers.
- Several online fishing forums indicate that dried prawns are considered unsuitable for bait. Ornamental fish keepers do report feeding dried shrimp to aquarium fish. Prawns are bottom feeders and while commercial feeds are specifically designed to sink, dried prawns for human consumption do not, so are considered unsuitable for crustacean feed. Furthermore, were they to be used in the aquatic environment, their propensity to

float means they would be very unlikely to be targeted by and exposed to susceptible species.

- Dried and shelf-stable prawns present a lower biosecurity risk compared with uncooked fresh or frozen prawns, regardless of how shelf-stability has been achieved (likelihood of entry). The longevity of such products enables their storage for periods in excess of those explored in the infectivity studies outlined above. If viable virus is present in dried prawns, its ability to persist for the shelf life of the product is unknown. Any viable virus that remains is considered unlikely to enter exposure pathways.
- Because exposure of susceptible species in Australia through dried prawns and shelf-stable prawn-based food products is unlikely, the biosecurity risk posed by WSSV associated with these products meets Australia's ALOP.

References

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Schedule 4—Reasons—bait for aquatic use, pet fish food and aquaculture feed

Note: See paragraph 5(b)(iii).

Summary

- Imported bait for aquatic use, pet fish food and aquaculture feed products, containing uncooked prawns and uncooked prawn meat, are subject to physical treatments that eliminate, or considerably reduce, the prevalence of viable WSSV.
- Many products are irradiated on-arrival with a 50kGy dose of gamma radiation at an approved irradiation facility.
- The current dose of radiation administered to these products is considerably higher than the dose required to inactivate WSSV.
- Irradiation significantly reduces the likelihood of entry of WSSV in imported bait for aquatic use, pet fish food and aquaculture feed, containing uncooked prawns and uncooked prawn meat. Therefore, the level of risk associated with these goods falls within Australia's ALOP.

Bait for aquatic use, pet fish food and aquaculture feed

Prior to the *Biosecurity (Suspended Goods – Uncooked Prawns) Determination 2017*, Australia imported bait for aquatic use, pet fish food and aquaculture feed, containing uncooked prawns and uncooked prawn meat. This included whole or partial prawns, and processed prawn products such as extruded pellets and flakes.

Bait and feed composition and potential for WSSV infection

- Prawns are not commonly included as pet fish or aquaculture feed ingredients. However, uncooked prawn meat can be imported for bait for aquatic use.
- Bait for aquatic use, pet fish food and aquaculture feed, containing uncooked prawns and uncooked prawn meat, are considered susceptible to WSSV.
 - Uncooked prawns and uncooked prawn meat for pet fish food and aquaculture feed may be prepared by freezing with a small amount of fresh or salt water. Freezing is not known to be effective in mitigating WSSV. Sufficient viable virus remains in frozen prawns to infect and cause mortalities in exposed *Penaeus vannamei* (Hasson et al. (2006) and Durand et al. (2000)).
- Extruded pellets and flakes for pet fish food and aquaculture feed are subject to intense heat as part of their production processes. These temperatures are well above what is required to inactivate WSSV (AQUAVETPLAN, Whitespot Disease strategy, P41). As such, these feeds do not pose a risk of introducing WSSV and would fall within Australia's ALOP.

Note: In 2017, the AQUAVETPLAN Whitespot Disease strategy could be viewed on <http://www.agriculture.gov.au/SiteCollectionDocuments/animal-plant/aquatic/aquavetplan/white-spot.pdf>.

Irradiation treatment of bait for aquatic use, pet fish food and aquaculture feed

- The Department's 2014 gamma irradiation policy review identified gamma irradiation as an effective method of treatment for imported products that are not heat treated and not intended for human consumption.
- The import policy for bait for aquatic use, pet fish food and aquaculture feed products, containing uncooked prawns and uncooked prawn meat, requires gamma irradiation to a level of 50kGy at an on-shore facility approved by the Department. This is a requirement even for product that has been irradiated prior to export at an overseas facility.
 - On arrival irradiation at 50kGy is suitable in meeting Australia's ALOP for a wide range of animal biosecurity concerns. It is well above the necessary dose to mitigate risk of WSSV.
 - The D₁₀ value (the dose required to inactivate 90 per cent of relevant organisms) for WSSV is between 1.85 and 2.56kGy. Motamedi-Sedeh et al. (2015) and (2017) recommended a radiation dose of 13-15kGy to ensure that the vast majority of viral bodies are inactivated.
- On-shore Class 4.2 facilities approved for gamma irradiation treatment of imported goods by the department are located in New South Wales, Queensland, Victoria, and Western Australia. These facilities operate under an Approved Arrangement and the goods are considered to be under biosecurity control until they have been treated. Auditing is regularly performed at each of the facilities to ensure that there are current standard operating procedures for the calibration and maintenance of instruments and equipment. Auditing also includes verifying that all equipment associated with the irradiation of goods is fitted with a measuring device (e.g. a dosimeter) which can record the level of irradiation applied to a product and the storage of goods subject to quarantine is appropriate.
- Irradiation significantly reduces the likelihood of entry of WSSV in imported bait for aquatic use, pet fish food and aquaculture feed, containing uncooked prawns and uncooked prawn meat. Therefore, the level of risk associated with these goods falls within Australia's ALOP.

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