

Import risk analysis: Freshwater Prawns (*Macrobrachium rosenbergii*) from Hawaii

Review of Submissions

**Biosecurity New Zealand
Ministry of Agriculture and Forestry
Wellington
New Zealand**



11 August 2006

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Pre-Clearance
Biosecurity New Zealand

*Import risk analysis: Freshwater Prawns (*Macrobrachium rosenbergii*) from Hawaii*

Review of Submissions

11 August 2006

Approved for general release

Debbie Pearson
Director Preclearance
Biosecurity New Zealand

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Executive Summary

Biosecurity New Zealand carried out an analysis of the risks associated with the importation of freshwater prawns (*Macrobrachium rosenbergii*) from Hawaii. The risk analysis was released for public consultation on 7 April 2006, and submissions closed 6 weeks later on 19 May 2006.

Five submissions were received. In general submissions indicated that stakeholders considered the risk analysis to be a thorough assessment of the major risks.

Issues highlighted by the submissions included: -

- Comments regarding risk from *Aphanomyces* spp. contaminating the water or broodstock. In response to these comments Biosecurity New Zealand has readdressed the risk management measures originally recommended to ensure they are as effective as possible.
- The potential effects of the introduction of White Spot Syndrome Virus on local decapod crustaceans. While the concerns were noted, the original recommendations of the risk analysis relating to this pathogen were considered appropriate.
- The need to consider potential effects of pathogen introduction on endemic freshwater finfish populations. These concerns related in part to the potential risk from *Aphanomyces* spp. which was covered above. Of the potential hazards with a non-negligible release assessment, none pose a significant risk to finfish.
- Clinical similarity of White Tail Disease and *Thelohania* spp. infection.
- Source of local broodstock of *M. rosenbergii*, which is outside the scope of the risk analysis.
- Arguments to include some of the more pathogenic, although ubiquitous, organisms in the risk management measures. The risk analysis did not consider those organisms that are ubiquitous in nature as requiring risk management measures.
- Pre-export quarantine and thorough disease investigations on the prawns were requested to at least equal those imposed post import in New Zealand. The risk analysis recommendations included extensive disease testing requirements and a period of isolation from other crustaceans which was considered adequate.
- The importance of considering food borne zoonotic conditions e.g. exotic serotypes of salmonella. These risks were considered in the risk analysis, but were readdressed in response to concerns raised.

Biosecurity New Zealand remains satisfied with the selection of the organisms defined as potential hazards in the commodity. Nevertheless, as a result of issues raised in several submissions, Biosecurity New Zealand has decided to alter two risk management measures and introduce one new measure relating to the standard of treatment for the water used to hold pre-export selected animals and to ship animals to New Zealand.

To improve flushing of any infective stages of *Aphanomyces* spp. and to prevent their potential re-entry and purify water for shipment, Biosecurity New Zealand will require that prawns to be exported must be held for 1 month in 5 µm filtered, sterilised water. The prawns must also be shipped in water that is similarly treated. This measure will prevent contamination with bacteria such as *Vibrio* spp. or *Salmonella* spp. from the water supply.

To prevent the movement of animals that are clinically affected with ubiquitous organisms Biosecurity New Zealand will require shipments to be accompanied by a health attestation from the

competent authority of the exporting country stating that the animals were free of clinical signs of pest and disease when despatched.

The final recommended risk management measures are: -

1. The water supply for the exporting facility must be treated by filtration (to a level of 20 µm) and/or ultraviolet irradiation and/or ozonation to a level which can be shown to remove all known vectors of *A. cantonensis*.
2. The exporting facility must have a verifiable 2-year history of testing for diseases in their stocks of *M. rosenbergii* which demonstrates that the facility is not infected with the organisms that cause White Spot Disease or White Tail Disease.
3. Twenty eight (28) days prior to despatch, the *M. rosenbergii* intended for export must be removed from the main population and placed in tanks which are physically isolated from other crustaceans held at the rearing facility and which have their own water supply of ≥ 10 °C, filtered to permit entry of a particle size of no greater than 5 µm and sterilised by UV radiation (at a level of at least 25,000 µWs/cm²) or ozonation (at a level of at least 0.2 mg/L for at least 4 minutes) or chlorination/de-chlorination (with at least 2% available chlorine for at least 10 minutes). Any animals that die during the pre-export quarantine period must be tested for the organisms that cause White Spot Disease and White Tail Disease at a diagnostic facility approved by the competent authority in the exporting country
4. At the same time as the export animals are isolated; a sample of 150 individuals must be taken from the specific population of *M. rosenbergii* from which the animals are being sourced for export and must be submitted to the following diagnostic tests, with negative results, at a diagnostic facility approved by the competent authority in the exporting country :
 - a. Examination of haemolymph, gills or pleopods for the causative agent of White Spot Disease using the nested PCR method recommended by the World Organisation for Animal Health (OIE 2005a).
 - b. Examination of haemolymph, gills, tail muscle or pleopods for the organisms causing White Tail Disease using the PCR described by Yoganandhan et al. (2005).
5. If any of the pre-export tests are positive for the organisms that cause White Spot Disease or White Tail Disease, the *M. rosenbergii* from that facility will not be permitted entry into quarantine in New Zealand.
6. The *M. rosenbergii* must be exported in water that is filtered to permit entry of a particle size of no greater than 5µm followed by sterilisation by UV radiation (at a level of at least 25,000 µWs/cm²) or ozonation (at a level of at least 0.2 mg/L for at least 4 minutes) or chlorination/de-chlorination (with at least 2% available chlorine for at least 10 minutes). Water must not be exchanged during transport.
7. Each consignment of animals must be accompanied by a health attestation signed by an authorised officer of the competent authority of the United States of America stating that, at the time of despatch, the animals were free of clinical signs of pest or disease.
8. On arrival in New Zealand, the *M. rosenbergii* must be transported directly to an approved transitional facility complying with MAF Standard 154.02.06: *Transitional Facilities for*

Ornamental Fish and Marine Invertebrates. Here the *M. rosenbergii* can be released into quarantine tanks but the water used for transport must be treated before disposal as prescribed in the MAF Standard.

9. Any *M. rosenbergii* broodstock that are dead on arrival, and any dead or diseased animals that are detected during the quarantine period must be subjected to a thorough virological, bacteriological and histopathological examination by a laboratory approved by Biosecurity New Zealand.
10. The *M. rosenbergii* imported from Hawaii will not be permitted to leave quarantine at any time, but locally grown *M. rosenbergii* broodstock will be allowed within the quarantine facility to co-habit with imported broodstock. Locally sourced broodstock will not be permitted to leave the facility once they have been introduced. Batches of larvae spawned from broodstock of imported and domestic origin may only be released from the quarantine facility after 150 larvae have been tested and found free from the organism causing white spot disease, using the nested PCR method recommended by the OIE (2005a) for this organism, by a laboratory approved by Biosecurity New Zealand.
11. The conditions in (10) above will be followed for the first 3 batches of larvae, or a minimum of 12 months (whichever takes the greater period of time), after which if all batches of larvae test negative for the organism causing white spot disease, the broodstock will be considered free of that disease and will be permitted to leave the quarantine facility.

Introduction

The completed risk analysis on freshwater prawns (*Macrobrachium rosenbergii*) from Hawaii was released for public consultation on 22 March 2006. Submissions closed on 19 May 2006.

Biosecurity New Zealand received the following submissions:

Name	Organisation Represented	Date Received
Robert Johnston	Ministry of Fisheries	19 May 2006
Karen Mitchell	Ministry of Health	16 May 2006
Robert Sowman	Fish & Game New Zealand	16 May 2006
Richard Klein, Terry Toomey	New Zealand Prawns Limited	12 May 2006
Hilary Eade, Tim Knox	New Zealand Food Safety Authority	19 May 2006 & 7 June 2006

This document reviews each submission in turn. The full text of each submission is included in Appendix 1.

Review of Submissions

1. Robert Johnston, Ministry of Fisheries

1.1. The Ministry of Fisheries regarded the risk analysis as being a very comprehensive analysis of the pathogens that could be introduced and become established in New Zealand. In addition the ultimate requirement for a fish farm licence was highlighted.

MAF response: Biosecurity New Zealand acknowledges these comments. The requirement to apply for a fish farm licence is the responsibility of the individuals wishing to farm the resultant animals and is outside the scope of the risk analysis.

1.2. The Ministry of Fisheries indicated that *Aphanomyces astaci*, crayfish plague, is of particular concern because of the potential effects on freshwater crayfish species in New Zealand and suggested that the importers should be required to undertake studies to assess any risk to endemic freshwater crayfish from *Aphanomyces astaci* by feeding crayfish with freshly killed prawns and observing the crayfish for signs of disease.

MAF response: Biosecurity New Zealand recognises that a scientific investigation along the lines proposed above would provide some additional information for future risk analysis, but it would not distinguish between a lack of susceptibility of endemic crayfish to infection and a lack of infectious *A. astaci* in the freshwater prawns. The risk analysis was conservative in its estimation and assumed that New Zealand species would be susceptible and the risk management measures were recommended assuming that transmission of disease could occur.

1.3. The Ministry of Fisheries highlighted that some of the other organisms present significant risks to the fisheries of New Zealand and raises White Spot Syndrome Virus (WSSV) as a specific example that could have a highly significant adverse impact on freshwater and marine crayfish species. Based on the moderate to high likelihood of introduction and establishment of WSSV identified in the risk analysis the Ministry of Fisheries believes that importation should not be permitted as it would represent an unacceptably high risk to New Zealand commercial, recreational and customary fisheries.

MAF response: The organisms of concern to the Ministry of Fisheries were highlighted in the risk analysis and as such Biosecurity New Zealand and Ministry of Fisheries agree that they represent the organisms that require risk management. The risk analysis concluded that there was a moderate to high likelihood of introduction and establishment of WSSV, and risk management measures were recommended to reduce the risk to an acceptable level.

2. Karen Mitchell, Ministry of Health

2.1. The Ministry of Health indicated that the risk analysis took into account human health issues in a competent and integrated manner and that there were no substantive concerns or comments on the risk analysis.

3. Robert Sowman, Fish & Game New Zealand

3.1. Fish and Game New Zealand pointed out that quarantine measures must be rigorous to contain any diseases that might be brought in with the prawns.

MAF response: The purpose of the risk analysis was to identify those organisms of concern to the biosecurity of New Zealand. The risk analysis recommended suitable risk management measures to manage any risk from the import of the prawns.

3.2. The submission asked whether the scope of the risk analysis included Malaysian prawns.

MAF response: The risk analysis defined the commodity as “adult freshwater prawn species *Macrobrachium rosenbergii*, sourced from Hawaii”. The resultant IHS will therefore cover only the import of *M. rosenbergii* from Hawaii.

3.3. The submission indicated that Fish and Game New Zealand would like to have seen more detail on potential effects to freshwater fish, the main thrust of the risk analysis considering marine crustaceans.

MAF response: The risk analysis considered both freshwater and marine pathogens in the development of the list of organisms of potential concern. However, many of the organisms that might cause disease problems in both freshwater crustaceans and freshwater fish are cosmopolitan organisms commonly found in freshwater environments, including those in New Zealand, and therefore the risk analysis did not consider them further. The pathogens that were considered further tend to be restricted to crustacean hosts and therefore a consideration of their effects on marine crustaceans is valid.

3.4. With respect to *Aphanomyces astaci*, Fish and Game New Zealand indicate that statements in the risk analysis alluding to available data suggesting absence of a pathogen should not be relied upon in risk management decisions.

MAF response: Biosecurity New Zealand recognises that absence of evidence does not equate to evidence of absence. In the case of *A. astaci* the risk analysis took a conservative approach and assumed that *A. astaci* was present in Hawaii in natural populations of the known carrier *Procambrus clarkii*. Risk management measures based on this assumption were recommended, specifically that imported animals should only be grown in waters free of *P. clarkii*. As likelihood that *M. rosenbergii* would act as an infected carrier is negligible, the only route of transmission would be through contaminated water or on the surface of the freshwater prawns themselves. To further reduce the possibility of transfer of contaminants it is suggested that a depuration (purification) stage be built into the pre-export requirements. This would eliminate the potentially difficult requirement to identify watercourses as free of *P. clarkii*. Evans *et al.*¹ produced a review of freshwater crayfish diseases and commensal organisms for the Australian Quarantine Inspection Service (AQIS) in which they summarised the current knowledge on *A. astaci* biology. This document, a review of scientific journal papers, indicates that *A. astaci* survives for only a short period outside a susceptible crayfish host. Infective zoospores (8-15 µm diameter) are motile for up to three days in water at 10 °C and for shorter periods in warmer water (although they may survive up to a maximum of 2 weeks in water chilled to 2 °C) before encysting. Cysts survive one to two days, and there can be up to three zoospore stages. Thus three zoospore stages of 3 days and two intermediate cyst stages of up to 2 days gives a total infectious survival period of 13 days. If animals destined for export, separated 28 days before despatch

• ¹ Evans LH, Edgerton BF, Stephens FJ and Overstreet RM;
http://www.daff.gov.au/corporate_docs/publications/word/market_access/biosecurity/animal/fw_crayfish_dis_pro_rev.doc

as suggested in the risk management measures, were placed in a sterilised water supply it would provide adequate time to flush any potentially infective *A. astaci* away before despatch. Water should be filtered to 5 µm and then sterilised using UV (25,000 µWs/cm²) or ozone (0.2 mg/L O₃ for ≥ 4 minutes) or chlorine (2% available chlorine for ≥ 10 minutes, followed by dechlorination). The IHS will include a requirement for depuration of the animals for export in 5 µm filtered, sterilised water (at temperatures of ≥ 10 °C) for 28 days before despatch.

- 3.5.** Fish and Game New Zealand requested that *A. invadans*, the causative agent of Epizootic Ulcerative Syndrome (EUS) in finfish should be considered further.

MAF response: As stated in the risk analysis *A. invadans* infects only finfish and thus consignments of *M. rosenbergii* could not be infected carriers. In addition EUS has not been reported from Hawaii. In the unlikely event that *A. invadans* was to contaminate the facility providing the animals to be exported, it would be eliminated by the depuration stage detailed above.

- 3.6.** The submission indicated that as *Thelohania* spp. already exist in New Zealand, no further assessment is needed.

MAF response: Biosecurity New Zealand concurs; the risk analysis indicated that no further consideration of *Thelohania* spp. was required.

- 3.7.** Fish and Game New Zealand highlighted that whilst the risk analysis stated White Tail Disease has not been recorded from New Zealand, there have been similar clinical signs detected in freshwater crayfish in New Zealand that had been attributed to *Thelohania* infection.

MAF response: The clinical signs of *Thelohania* infection include a white opacity of the muscles, similar to that described in the risk analysis for White Tail Disease (WTD). However *Thelohania* spp. infection has been reported in New Zealand whereas *Macrobrachium rosenbergii* nodavirus (MrNV) has only been reported from French West Indies, China and India. There is no evidence to suggest that muscle opacity of freshwater crayfish in New Zealand is attributable to MrNV.

4. Richard Klein & Terry Toomey, New Zealand Prawns Limited

- 4.1.** This submission queries the location of the quarantine facility, stating that a quarantine facility closer to the proposed aquaculture site would be prudent to reduce the risk of disease spread resulting from transportation.

MAF response: The aim of a risk analysis is to derive risk management measures that do not rely on the physical location of any particular facility, but are relevant and effective across the whole of New Zealand. Transportation of resultant offspring, produced from broodstock imported and held under conditions specified in the risk analysis, should represent no greater risk than transport of prawns produced elsewhere in New Zealand.

- 4.2.** The submission also raises a number of issues with respect to breeding of the imported prawns with locally grown *M. rosenbergii* broodstock to “reduce the likelihood of disease in the first generation of post larvae”. Questions raised include where the local broodstock are to be sourced and where expertise to carry out the crosses will come from.

MAF response: The risk analysis indicates that imported broodstock will not be permitted to leave the quarantine facility, at least in the immediate term, but that local broodstock would be permitted entry to enable breeding to occur. The risk analysis does not however make any reference to this crossing being a method of reducing likelihood of disease in offspring. The issues of source of local broodstock and expertise for successful crossing are outside the scope of the risk.

- 4.3.** New Zealand Prawns Limited indicated that the risk analysis was a thorough summary of potential pathogens affecting *Macrobrachium* spp. throughout the world; however they recommended that *Vibrio* spp. and *Thelohania* spp. should be considered further.

MAF response: The risk analysis concluded that, with the exception of *Vibrio cholerae*, *Vibrio* spp. and *Thelohania* spp. should not be considered further. This decision was partly based on their presence in New Zealand already, thus preventing Biosecurity New Zealand instituting import controls for these organisms in the absence of New Zealand based control programmes, and the fact that many organisms which do indeed pose a threat to the productivity of an aquaculture venture are secondary pathogens causing disease only in the presence of other exacerbating factors. *Vibrio* spp. already occur in New Zealand and generally only cause disease in fish and shellfish reared in suboptimal conditions. In addition, as indicated in the risk analysis, vibriosis tends to affect younger prawns although it may cause “loose shell syndrome” in older stock. *Thelohania* spp. have already been reported from New Zealand. Recognising that it is less than ideal to import animals clinically affected with ubiquitous disease causing organisms it is proposed that all consignments must be accompanied by a health attestation, signed by a suitable officer of the exporting country’s competent authority, that “at the time of despatch, the animals were free of clinical signs of pest and disease”. The depuration step, detailed in response 3.4.1, would provide safeguards against *V. cholerae*.

- 4.4.** In conclusion, New Zealand Prawns Limited, stated that extreme caution and vigilant monitoring is needed at all stages of quarantine.

MAF response: Biosecurity New Zealand utilises the risk analysis process to produce peer-reviewed, scientifically robust documents that recommend appropriate measures to minimise risks from the importation of animals or animal products. In the case of freshwater prawns from Hawaii, Biosecurity New Zealand believes that measures have been appropriately defined, based on current scientific knowledge and conservative assumptions where necessary.

5. Hilary Eade & Tim Knox, New Zealand Food Safety Authority

- 5.1.** NZFSA expressed concerns that the broodstock may bring into New Zealand recognised food borne pathogens, especially exotic serotypes of salmonella.

MAF response: The risk analysis examined a number of pathogens of *M. rosenbergii* with zoonotic potential and either discounted them or, in the case of *Angiostrongylus cantonensis*, specified risk management measures. The risk analysis also considered the potential for *Vibrio cholerae* to be present in the water in which the broodstock were transported and recommended risk management to prevent the entry of *V. cholerae* into New Zealand. Salmonella bacteria, like *V. cholerae*, would not cause disease in the broodstock, but could contaminate the shipment if the broodstock water supply was

contaminated by human sewage. The precautions necessary to prevent the entry of *V. cholerae* can be expected to also eliminate salmonella contamination of the water supply.

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Appendix 1: Copies of Submissions

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1. Robert Johnston, Ministry of Fisheries

19 May 2006

File Ref: 25/7/1

Martin Van Ginkel
Technical Support Officer, Risk Analysis
Biosecurity New Zealand
P O Box 2526
WELLINGTON

Dear Martin

Import Risk Analysis – Freshwater Prawns

I refer to your letter dated 6 April 2006 to the Chief Executive of the Ministry of Fisheries requesting comment on an Import Risk Analysis concerning freshwater prawns (*Macrobrachium rosenbergii*) from Hawaii.

I sought comment on the analysis from a number of business groups within MFish. The following submission draws on comments from Steve Pullan, Fisheries Analyst in our Operations group, Julie Hills, Senior Scientist and Peter Todd, Principal Scientist in Nelson. Steve and Julie have both had extensive involvement in aquaculture issues. Steve also has a background in ornamental and tropical fish identification.

Overall, the report is a very comprehensive analysis of the pathogens that could be introduced and become established in New Zealand as the result of importing *M. rosenbergii* into this country. The analysis discusses four organisms that are classified as potential risks to the environment –

- White spot syndrome virus
- White tail disease
- *Aphanomyces astaci*
- *Angiostrongylus cantonensis*

Aphanomyces astaci is of particular concern because of its potential to have devastating effects on freshwater crayfish species. While the risk of zoospores reaching freshwater crayfish appears remote, if it did occur the results could be severe. Freshwater crayfish support a significant customary and recreational fishery and would be a grave concern to tangata whenua. There is also a developing freshwater crayfish farming industry for niche markets, and this could be put at risk.

If the importation and quarantine were to proceed, MFish would suggest that the applicant be required to undertake studies to assess the risk to freshwater crayfish under strict quarantine. This could be done by feeding crayfish with freshly killed prawns and the crayfish observed for signs of disease.

Some of the other hazardous organisms discussed in the report also present significant risks to our fisheries. The report highlights a moderate to high likelihood of introduction and establishment of White spot syndrome

virus (WSSV) in New Zealand if *M. rosenbergii* are imported from Hawaii. The resulting consequence of WSSV being introduced into New Zealand is likely to be a highly significant adverse impact on local crustaceans, especially freshwater and marine crayfish species.

Based on the risk analysis, MFish believes that the risk of importing freshwater prawns from Hawaii into New Zealand is unacceptably high in regards to the welfare of New Zealand commercial, recreational and customary fisheries, and that importation should not proceed.

Should importation proceed and the prawns survive quarantine, the proponent will (under the current regime) require a fish farm licence issued under the Freshwater Fish Farming Regulations 1983 if he or she wishes to farm them.

Thank you for the opportunity to comment.
Yours sincerely

Robert Johnston
Senior Policy Analyst

2. Karen Mitchell, Ministry of Health

Martin Van Ginkel
Pre Clearance
Biosecurity New Zealand
Ministry of Agriculture and Forestry PO Box 2526
Wellington

Dear Martin

- - - " -

IMPORTS RISK ANALYSIS: FRESHWATER PRAWNS FROM HAWAII

Thank you for providing the Ministry of Health with a copy of the import risk analysis for freshwater prawns. This document demonstrates that Biosecurity New Zealand is taking into account human health issues in a competent and integrated manner.

I have no substantive concerns or comments to make on this document.

Yours faithfully

/Karen Mitchell
Acting Deputy Director General
Public Health Directorate
Ministry of Health

16 May 2006

3. Robert Sowman, Fish & Game New Zealand

From: "Robert Sowman" <rsowman@fishandgame.org.nz>
To: <vanginkelm@maf.govt.nz>
Date: 16/05/2006 10:02:59
Subject: Freshwater Prawns

Martin Van Ginkel

Fish & Game New Zealand would like to make the following submission on the paper Import risk analysis: Freshwater prawns (*Macrobrachium rosenbergii*) from Hawaii.

Quarantine measures need to be rigorous enough to contain any diseases that might be brought in with the prawns.

The report refers to prawns from Hawaii yet the e-mail mentions Malaysian prawns. This a point that needs to be clarified.

The main thrust of the biosecurity report looks at the effects on marine crustacea but, as these are a freshwater species, there should be more effort put into considering effects on freshwater fish.

Statements such as "all available data suggests it is not present in Hawaii" are not reassuring when the importation of *Aphanomyces astaci* into Europe wiped out most of Europe's endemic freshwater crayfish species. That could potentially do the same in NZ, with flow on effects for fisheries such as Poolburn and Manor Burn Reservoirs where crayfish make up a large proportion of the trout diet (ref p 29).

Pg. 27. *Aphanomyces invadans*, has been associated with Epizotic Ulcerative Syndrome (EUS), which has been "only reported from fin fish" - and therefore has not been considered for crustacea in the report. There really should be some consideration of effects on fin fish such as trout.

Pg. 29. *Thelohania* sp. already exists in NZ so no further assessment is needed if it is the same species.

Pg. 38. The report states whitetail disease is not currently found in NZ. There is a disease known as white-tail found in freshwater crayfish in New Zealand but it was attributed to *Thelohania* sp but the link was not tested. The symptoms described in the report are very similar to those occurring in NZ freshwater crayfish. The report is not up to date in this respect and this leads us to question the assessment of potential effects on native crustacea species (sports fish food) and fin fish (sports fish).

Kind regards

Robert Sowman

Policy & Planning Manager

Fish & Game New Zealand

P O Box 13-141
Wellington
Telephone 04 499-4767
Fax 04 499-4768

4. Richard Klein & Terry Toomey, New Zealand Prawns Limited

11 May 2006
To Martin Van Ginkel
Pre Clearance
Biosecurity New Zealand
Ministry of Agriculture and Forestry PO Box 2526
WELLINGTON

SUBMISSION REGARDING "IMPORT RISK ANALYSIS, FRESHWATER PRAWNS (*Macrobrachium rosenbergii*) FROM HAWAII."

ATTENTION:

MR MARTIN VAN GINKEL

We have read and understand the Bio Security Document forwarded to us and appreciate the contents contained within. We would however ask that you consider the additional risk factors we detail in this submission.

The *Macrobrachium* prawns at Wairakei were imported in 1987 under strict quarantine controls. With modern detection techniques and a greater understanding of aquatic pathogens, any new quarantine program would have to be of the most thorough nature with adequate safety checks and containment provisions.

QUARANTINE LOCATION

The location of such a quarantine facility needs to be known; obviously geographic practicality must play a deciding role. Having a quarantine facility in the far north of New Zealand presents its own set of biosecurity issues.

A quarantine facility closer to the proposed aquaculture site makes prudent sense as there is a reduced risk of disease spread resulting from transportation.

"LOCALLY SOURCED PRAWNS" CROSSBREEDING PROGRAMME

The risk analysis suggests cross breeding the imported prawns with "locally sourced prawns" to reduce the likelihood of disease in the first generation of post larvae. Firstly, we are unaware of any evidence to suggest that this would be successful. Notwithstanding even if this practice is successful, where will the "locally sourced prawns" come from? To our knowledge New Zealand Prawns Limited at Wairakei is the only "local source". New Zealand Prawns Limited has no Agreement with any other party to carry out such an exercise.

Secondly *Macrobrachium rosenbergii* are regarded as a difficult species to culture in captivity. New Zealand Prawns Limited has, over many years developed a very efficient, proven system for the breeding and grow out of this species. Good husbandry is essential for mitigating the risk of disease in these prawns. Who is to supply the expertise for the crossbreeding program to ensure its there is a guaranteed outcome of healthy stock.

DISEASE RISK IDENTIFICATION AND MONITORING

The risk analysis report provides a thorough summary of potential pathogens affecting *Macrobrachium* species throughout the world. The inclusion of viral conditions such as white spot disease (WSD) and white tail disease (WTD) on the hazard risk list is encouraging. However, several potentially devastating diseases have been omitted from the recommended quarantine program, based on lack of knowledge or lack of investigation in Hawaii or even cost restraints. *Vibrio* bacteria, for example have been dismissed as a negligible risk by the report. *Vibrio* is a disease agent that could wreak catastrophe on New Zealand Shellfish aquaculture industry

and permanently effect New Zealand's export trade relationships. We recommend that Vibro be considered further in the risk analysis.

The Protazoan Theloharia sp. Is a potential threat to New Zealand freshwater crayfish. For this reason we believe Theloharia should be considered further. Other diseases are considered a low threat because no transmissible factor has been associated with them in the past. This suggests a gap in scientific understanding and for this reason such conditions should be treated with increased scrutiny until they are proven not to be a threat.

Any imported prawns from Hawaii require intense quarantine and disease monitoring in their country of origin for at least the same amount of time as is being suggested once they reach New Zealand.

The biological threat to New Zealand native flora and fauna by such an import could be considered statistically remote, if all quarantine conditions and protocols are followed. However, should anyone of the aforementioned diseases escapes and proliferate, the effect on New Zealand Environment and economy could be very significant. For this reason, extreme caution, and vigilant monitoring at all stages of quarantine need to be employed, beginning at the earliest stage of the risk analysis.

The views and opinions of this submission are to be taken seriously as they are based on sound scientific principles from within the Aquaculture industry specific to this species for almost twenty years.

New Zealand Prawns Limited look forward to further opportunities to examine and comment on the proposal.

Yours sincerely

Richard Klein & Terry Toomey

New Zealand Prawns Limited

Steven Pope BSc Marine Science - - - Andrew Harrison BSc Marine Science

5. Hilary Eade & Tim Knox, New Zealand Food Safety Authority

From: Hilary Eade

To: van Ginkel, Martin

Date: 19/05/2006 15:36:49

Subject: submission on Import Risk Analysis for freshwater prawns (*Macrobrachium rosenbergii*) from Hawaii

Hi Martin

NZFSA wishes to comment on the above Import Risk Analysis but unfortunately the document didn't reach me until Wednesday this week (an NZFSA internal mail problem!) and so the relevant people have been unable to review the document fully. However, I can provide the following comments now:

"NZFSA's comments are based on the commodity definition given on page 9 of the Import Risk Analysis that the prawns being considered for import are for use as brood stock only i.e. they are not intended to be sold for human consumption. Given that definition, NZFSA has some concerns relating to food safety. If the imported brood stock are carrying organisms that are known food borne pathogens then there may be the potential for these to be transferred to their offspring, resulting in a possible food safety issue. NZFSA intends to give further consideration to the food borne illness implications of this proposal and in particular the possibility of exotic food borne illness serotypes being introduced into New Zealand. Further comments will be provided by 2 June 2006"

Hopefully you will be able to accept these additional comments. I left a message on your answerphone about this but you mustn't be around at the moment please let me know if this is ok or if there is a problem with it.

Also, the analysis was sent to Andrew McKenzie could you please change the contact to Tim Knox, Director NZ Standards. He is the contact for all formal requests for comments on Import Risk Analyses. He then forwards them to me via my manager and I am responsible for coordinating NZFSA's comments. To help us provide these by the deadline is there some way of emailing me when they are released so I can make sure they are forwarded to the right people immediately? I see that the analysis is available on Biosecurity's website maybe there's a web notification system I can register with?

Please give me a ring if you want to discuss any of this.

Regards, Hilary

Hilary Eade

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6 June 2006

Martin Van Ginkel
Technical Support Officer, Risk Analysis
Biosecurity New Zealand
PO Box 2526
WELLINGTON

Dear Mr Van Ginkel

**COMMENTS ON IMPORT RISK ANALYSIS: FRESHWATER PRAWNS
(*MACROBRACHIUM ROSENBERGII*) FROM HAWAII**

Thank you for the opportunity to comment on the above import risk analysis and for extending the deadline to give the New Zealand Food Safety Authority (NZFSA) time to consider the analysis.

After giving further consideration to the food safety implications of importing the product outlined in the import risk analysis, NZFSA continues to have concerns about the imported brood stock carrying organisms that are known food borne pathogens, such as exotic serotypes of *Salmonella*, and transferring these to their offspring. NZFSA's report *Analysis of Foodborne and Other Pathways for the Exposure of New Zealanders to Salmonella* released in September 2005, identifies that there is the risk of exotic serotypes of *Salmonella* being introduced from raw prawns from the United States.

As a result, NZFSA intends to investigate this matter further and will keep you informed of progress.

Yours sincerely



Tim Knox
Director
New Zealand Standards Group