

Assessment report and recommendation for new organisms proposed for prescription as not new organisms

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Submission analysis

We received six submissions, summarised in Table 1 and Table 2 (end of the report), and briefly in the following two paragraphs. This is followed by a detailed analysis of the proposals for the prescription of “not new” status of the seven species, and the submissions provided in response to these proposals.

Submitter	Organism						
	<i>Dicyphus</i> n. sp. (bug)	PepMV (virus)	<i>Paropsisterna</i> <i>cloelia</i> (beetle)	<i>Pilea</i> <i>peperomioides</i> (plant)	<i>Philodendron</i> <i>pedatum</i> (plant)	<i>Philodendron</i> <i>squamiferum</i> (plant)	<i>Paenibacillus</i> <i>alvei</i> (bacterium)
s 9(2)(a)	✓		✓				✓
School of Forestry			✓				
NZDFI			✓				
DOC	✗	✗	✓	✗	✗	✗	✓
Ngāi Tahu	✗	-	✓	✗	✗	✗	-
Tomatoes NZ		✓					

Table 1: Submissions received on the seven organisms. (✓ support, ✗ against, - neutral).

The full submissions and the proposals are available if required by the Minister.

The submission from s 9(2)(a) does not focus on or name any of the seven organisms listed on the proposal, but rather made two general comments. The first is to support declaring all the organisms to be not new, “if they have become established”. The second is a request to amend the definition of ‘microorganism’ in section 2 of the HSNO Act.

The School of Forestry, NZDFI, DOC, and Ngāi Tahu, all provided submissions in support of the proposal for the beetle *Paropsisterna cloelia* to help research on this forestry pest. The bacterium *Paenibacillus alvei* was endorsed by DOC. Ngāi Tahu and DOC oppose the change of status of *Dicyphus* n. sp. (NZAC04236621) due to the lack of information and identification at the species level. They are also both opposed to the deregulation of the three ornamental plants *Pilea peperomioides*, *Philodendron pedatum*, and *Philodendron squamiferum*, either to avoid inadvertently legitimising the illegal introduction of plants, or because of the lack of assessment of their potential impact on the New Zealand environment. DOC opposes the deregulation of Pepino mosaic virus, as at the time of the consultation the virus was still under investigation by MPI and its effect on native solanaceous plants related to tomato is unknown. Tomatoes New Zealand supports its deregulation at the strain level to assist the industry in its management of the virus.

Pepino mosaic virus

Proposal

Pepino mosaic virus (PepMV) is a member of the genus *Potexvirus* and is proposed by Bioforce Limited to be prescribed “not new” by an Order in Council.

We note the lack of information submitted by the applicant. Therefore, the information in this section is based on the EPA’s investigation into this species.

This single-stranded RNA virus mainly infects solanaceous plants such as tomato, potato, eggplant, and tobacco. It was detected in Peru in 1974, and for the first time outside South America in 1999 when it quickly spread through Europe.

There are currently five known strains of this virus, the European (EU), the Chilean (CH2), the North American (US1/CH1), the original Peruvian (LP), and the new Peruvian (PES) strains. The viral disease is known to cause significant economic losses worldwide in tomato crops¹.

Pepino mosaic virus is considered a highly infectious and readily transmissible virus that systemically infects tomato plants. Various symptoms are associated with this virus such as bright angular yellow spots and bubbly areas on the leaf, and ‘marbled’ fruits².

The species was first detected in four Auckland greenhouses between April and May 2021. MPI decided not to initiate an eradication programme as the actions were considered to be too costly for the growers without a guarantee of eradication. Currently, affected glasshouses continue to grow and sell their products in New Zealand under higher stringency hygiene measures³.

Submissions

We received three submissions from Ngāi Tahu, DOC, and Tomatoes New Zealand regarding the change of status of Pepino mosaic virus.

Ngāi Tahu neither opposes nor supports the deregulation of PepMV.

DOC opposes the deregulation of PepMV, because at the time of the submission the incursion was still under investigation by MPI and could have potentially led to an eradication programme. DOC stressed the lack of information provided by the applicant regarding this organism. DOC further noted the risks associated with the use of an attenuated strain of the virus as a vaccine when the disease is not yet widely spread in the country, particularly given

¹ F. Alajmi, C. Zeng and D. R. Jerry 2015. Domestication as a novel approach for improving the cultivation of calanoid copepods: a case study with *Parvocalanus crassirostris*. *PloS one*, 10, e0133269

² S. Sabaratnam 2021. Pepino Mosaic Virus in Greenhouse Tomatoes. Department: B. C. M. o. A. Abbotsford Agriculture Centre, Food and Fisheries 2021 (ed.)

³ MPI. 2021. Pepino mosaic virus (PepMV) in Auckland [Online]. Ministry for Primary Industries. Available: <https://www.mpi.govt.nz/biosecurity/major-pest-and-disease-threats/pepino-mosaic-virus-pepmv-in-auckland/> [Accessed December 2021].

that its effects on native Solanaceae (plant species in the same taxonomic family as tomato) have not been assessed.

Tomatoes New Zealand supports the deregulation, but only at the strain level to facilitate the research on the organism and to assist the industry in its management. The strain found in New Zealand has been identified as CH2. They consider that changing the new organism status of PepMV at the species level would lead to export market access loss.

EPA response

We note that PepMV is currently classified as a notifiable pest species⁴ and an unwanted organism under the Biosecurity Act. These designations mean that it is an offence to breed, sell or release PepMV in New Zealand. Furthermore, the virus is still officially under investigation.

As mentioned by Tomatoes New Zealand, the change of status would facilitate its control if the vaccine appeared to be the right management tool. However, we understand the concerns raised by DOC as making Pepino mosaic virus “not new” appears to be premature considering its recent incursion and the uncertainty around its potential impact on native species. Therefore, bringing a vaccine that contains an attenuated version of the strain found in New Zealand contains non-negligible risks.

We note that MPI has the view that PepMV entered New Zealand as an incidentally imported organism. Incidentally imported organisms may only be collected and studied in the laboratory under an HSNO development approval. Due to the restricted distribution of the virus and its classification, the EPA recommends the use of a development in containment application and approval pathway to study the organism and its impact on native Solanaceae before considering its deregulation.

Recommendation

Based on the information provided by the applicant and the submitters, and to the best of our knowledge, Pepino mosaic virus has not yet formed a self-sustaining population in New Zealand and could be the subject of management, control or eradication efforts under the Biosecurity Act.

We recommend retaining the new organism status of Pepino mosaic virus.

Dicyphus n. sp. (NZAC04236621)

Proposal

The bug⁵ *Dicyphus* n. sp. was proposed by Bioforce Limited to be made “not new” by an Order in Council.

⁴ Must be notified to MPI if it is spotted in New Zealand

⁵ Insects of the taxonomic order Hemiptera, which have sucking mouthparts, eg, bedbugs, aphids, and shield bugs. Also known as “true bugs”.

As the species identity of the bug remains uncertain, the applicant could not provide any information on the biology of the organism. The only information currently available is that, according to an expert from overseas, the physical characteristics of the species are consistent with assigning an identification as an undescribed South African *Dicyphus* species.

The applicant only mentioned the first sightings in 2013 in the application to support the presence of a self-sustaining population in New Zealand. However, the MPI Biosecurity Surveillance & Incursion Investigation team was able to provide more information on the various *Dicyphus* sightings in New Zealand and their identifications.

We note the lack of information submitted by the applicant. Therefore, the information in the paragraphs below is based on the EPA's investigation into this species.

The genus *Dicyphus* contains more than 70 different plant bug species, including some species that have been used in horticulture as biological control agents to prey on other insects such as whitefly, aphids, mites and caterpillars.

The bug was sighted for the first time in 2013 around Auckland when a male specimen was collected on a *Pelargonium* plant by Plant Health and Environment Laboratory (PHEL) entomologists and was provisionally identified as *Dicyphus* sp. based on its morphological features.

Molecular testing done by MPI was inconclusive, and the specimen was posted to Miridae⁶ expert Professor Gerry Cassis, University of New South Wales, Australia, who confirmed the generic affiliation but was not able to identify the species based on a single specimen.

In 2016, PHEL entomologists collected more specimens identified as *Dicyphus* sp. and molecular testing on three specimens (male, female and nymph) confirmed the specimens were identical to the one collected in 2013. Prof. Cassis examined the specimens and identified them as members of an uncharacterised South African species. He suggested that the name '*Dicyphus* n. sp.' should be used until a formal species description and classification was assigned.

Since 2013, the bug has been sighted more than 50 times in the Auckland region and listed on the iNaturalist NZ website by freelance entomologist Stephen Thorpe. Pictures taken between 2013 and 2018 were examined by a PHEL entomologist who concluded that the species are very close to the specimens examined in 2013 and 2016 and probably the same uncharacterised species.

Because the proposed organism has only been partially characterised, we proposed to link *Dicyphus* n. sp. with a voucher specimen held in the New Zealand Arthropod Collection (NZAC) administered by Manaaki Whenua Landcare Research. The NZAC number assigned to the species is NZAC04236621.

The species *Dicyphus* n. sp. is linked to the voucher number NZAC04236621 to ensure that only this particular species will be deregulated. MPI has also confirmed that this species is

⁶*Dicyphus* species belong to the taxonomic family Miridae.

different from the *Dicyphus* species (*D. discrepans*, *D. errans*, *D. rhododendri* and *D. tamaninii*), which are all listed on the Unwanted Organisms Register.

Bioforce Limited states that it is looking to study the biology of this new *Dicyphus* species to fully identify the species and to provide meaningful information on how to manage it.

Submissions

We received three submissions from s 9(2)(a), DOC and Ngāi Tahu to the change of status of *Dicyphus* n. sp. (NZAC04236621).

s 9(2)(a) did not specifically support the change of status of the bug but supports a broader approach where all organisms that have established in New Zealand should not be considered as new organisms.

DOC underlines the absence of information on the species and the lack of reasons for a change of status provided by Bioforce Limited. DOC would prefer to have the taxonomy and ecology of the organism carried out under containment to allow a more informed decision.

Ngāi Tahu express concerns about the presence of this bug being the result of a potential escape from containment in the first place and would like to keep any research under containment.

EPA response

We note that a well-known species of *Dicyphus* (*Dicyphus hesperus*) native to North America was approved to be imported into containment in 2008 under the approval NOC08008. The species under this approval is physically similar to the *Dicyphus* species observed around Auckland. However, the Australian expert described the Auckland samples as belonging to an uncharacterised South African species. Therefore, we consider that the presence of *Dicyphus* n. sp. (NZAC04236621) is unlikely to be the result of an escape from containment.

In their submissions, DOC and Ngāi Tahu suggested doing the research under containment to learn more about the organism before considering its deregulation. However, organisms that arrived in New Zealand after 29 July 1998 cannot be brought into a containment facility under a HSNO containment approval, because such approvals only cover organisms imported from overseas (unless declared as incidentally imported new organisms by MPI).

DOC and Ngāi Tahu also raised concerns around the lack of information on the bug's ecology and its potential adverse impacts on the environment. We share these concerns, and consider that more research on the species, potentially including examination of its ecological role in its presumed native country of South Africa should be completed before considering its change of status. We note that due to its presence in the country, there is no provision in the HSNO Act or the Biosecurity Act stopping the study of *Dicyphus* n. sp.

The applicant is looking to deregulate this bug to study its biology and identify options to manage it. We note that Bioforce Limited is a commercial company that specialises in the use of biological control agents as an alternative to chemical pesticides to control pests. Another reason to use caution against recommending denewing the organism is that the

population of *Dicyphus* n. sp. does not seem to have spread beyond the Auckland isthmus yet. A change of status could lead to its wider distribution in the country via commercial use which could represent a risk for native species.

Recommendation

Based on the lack of information on the identity of *Dicyphus* n. sp. (NZAC04236621) and its ecological role in its native country, as well as the concerns raised by other agencies and Ngāi Tahu, we recommend retaining the new organism status of *Dicyphus* n. sp. (NZAC04236621).

Paropsisterna cloelia

Proposal

The beetle *Paropsisterna cloelia*, commonly known as the eucalyptus variegated beetle, was proposed by Scion to be made “not new” by an Order in Council. The ladybird look-alike beetle is already widespread in New Zealand.

Adults and larvae of *Paropsisterna cloelia* feed on new foliage of various eucalyptus species. When large and repeated infestations occur, they can give the tree a ‘broom-topped’ appearance which impacts the production of pulpwood and timber production by slowing the growth of the trees. The beetle has a big impact on the eucalyptus forestry industry, even in its native country of origin, Australia.

The pest beetle was detected in Hawke’s Bay for the first time in 2016. Since then, it has rapidly spread across the North Island. It has been observed in Gisborne, and the Manawatu, Whanganui, and Wellington regions, as well as in the South Island, in Marlborough and the north of Canterbury.

The MPI Surveillance & Incursion Investigation Team stood down their response in 2017 due to the already large distribution of the pest in the Hawke’s Bay region.

The applicant noted that the change of status will allow scientists to freely undertake research on this pest in the field and the laboratory. Scion would also be able to investigate the impact of new pesticides in the field. Furthermore, if a new biological control agent is approved against *Paropsisterna cloelia*, having it prescribed as not a new organism would allow the release of infested beetles which will facilitate the establishment of the agent.

Submissions

We received five submissions in support of the deregulation of the pest beetle from ^{s 9(2)}
(a) [redacted], the School of Forestry, NZDFI, DOC and Ngāi Tahu.

^{s 9(2)(a)} [redacted] did not specifically support the change of status of the beetle, but he supports a broader approach where all organisms that have established in New Zealand should not be considered as new organisms.

The School of Forestry and NZDFI are strongly in support of having *Paropsisterna cloelia* prescribed as not a new organism. They stated that it would facilitate the study of the beetle

and the development of Integrated Pest Management solutions to help control its population and reduce its impact on commercial eucalyptus species. They also noted that the pest is more widespread than originally reported in the application, with recent observations reported just south of Kaikoura (Appendices J and K).

DOC expressed its support for the change in status of this beetle, given its rapid spread. They noted that keeping the new organism status will not bring any benefit to the industry.

Ngāi Tahu also supports the proposal, to help find a biological control agent against this pest species.

EPA response

Paropsisterna cloelia was classified by MPI as an incidentally imported new organism, which allowed the EPA to provide a development approval to Scion in 2017. Indeed, any work on an incidentally imported new organism, including isolating and rearing (usually covered under an import approval) can only be done under a development approval.

All development approvals can only be used by the applicant, therefore, in this case, students from the University of Canterbury cannot use Scion's approval to undertake laboratory experiments on the Canterbury campus.

One of the objectives of the deregulation process is to allow research on pest organisms already present in New Zealand to gain a better understanding of their impacts on the environment, health and safety of people and communities.

If the barriers to research are not addressed, there may be a lost opportunity to address the impacts of these organisms on the agricultural and horticultural sectors, as well as to research into its management, control, and/or eradication.

Recommendation

Based on the information provided by the applicant and the submitters, and our own investigation, *Paropsisterna cloelia* formed a self-sustaining population in New Zealand after 1998 and is not subject to management, control or eradication efforts under any Act.

We recommend the prescription of *Paropsisterna cloelia* as “not new” by an Order in Council.

Pilea peperomioides, *Philodendron pedatum* and *Philodendron squamiferum*

Proposal for *Pilea peperomioides*

The plant *Pilea peperomioides* was proposed by NZ Plant Producers Inc to be prescribed as “not new” by an Order in Council. This houseplant was found to be widely distributed among plant enthusiasts by MPI in 2018.

This small plant originates from temperate cloud forests of the province of Yunnan, China, and is characterised by round-shaped green leaves. *Pilea peperomioides* produces small seeds but offshoots from the main stem are mainly used for its propagation.

The applicant proposed to change the status of this ornamental plant to improve the wellbeing of people with indoor plants, promote access to healthy and well-priced plants (eliminating illegally traded plants), and reduce the number of enquiries received by MPI, saving time, money and staff resources.

NZ Plant Producers Inc also noted that the change of status would allow commercial nurseries to add this plant species to their catalogues to respond to the high demand, which should contribute to bringing down the price tag of this pot plant.

The presence of *Pilea peperomioides* was notified for the first time to MPI in 2018 when they received an enquiry from someone who claimed to have inherited a specimen 10 years earlier from an elderly relative. The enquirer stated that the plant had been present in her relative's house for many years before. However, despite the old looking appearance of the plant, the time of its entry into the country could not be established.

Due to the lack of strong evidence, the species was determined by the EPA to be a new organism. In 2019, MPI investigated the sale of the plant on TradeMe website, which resulted in the seizure and destruction of 49 plants.

The applicant noted that due to the popularity of this plant since the 1940s, it was likely to have been brought to New Zealand before the HSNO Act came into force, however, no evidence could be found to confirm this.

MPI stood down its investigation on the plant when they concluded that the establishment of this plant in the New Zealand environment would pose negligible risks.

Proposals for *Philodendron pedatum* and *Philodendron squamiferum*

The plant species *Philodendron pedatum* and *Philodendron squamiferum* were proposed by MPI to be made "not new" by an Order in Council. Both species are currently illegally distributed in New Zealand by boutique retailers and private plant enthusiasts.

Philodendron pedatum is a climbing vine native to subtropical South America that can grow up to 3 meters in length. The juvenile leaves can have a variety of shapes, but mature plants have characteristic large oak-shaped multi-lobed leaves that can reach up to 35 cm in length with smooth green petioles, hence its common name, the oak leaf philodendron.

Philodendron squamiferum is a climbing vine native to northern Brazil, French Guiana, and Suriname. Juvenile plants have elongated leaves, whereas adults have variable length multi-lobed leaves. The leaves are similar to *Philodendron pedatum*, but the species can easily be distinguished by *P. squamiferum*'s hairy and red petioles. The plant is commonly known as the hairy philodendron.

Both plants produce inflorescences and fruits in their natural environment, but rarely or not at all when kept in a pot. Like many tropical plants, the leaves and stems of philodendrons produce calcium oxalate crystals to deter insects. This substance can cause temporary irritation to the throat, swelling, nausea, and vomiting if ingested.

The applicant proposed to change the status of these houseplants to limit the biosecurity risks associated with the illegal importation and distribution of these plants, as well as to improve the wellbeing of people with indoor plants. New Zealand Plant Producers Incorporated stated that “indoor plants are an essential connection to the natural environment” for people living in apartments. The applicant states that plants “create a sense of taha wairua/spiritual connectedness to nature, contributing positively to taha hinengaro/mental health and well-being”.

In 2020, the EPA determined under section 26(1) of the HSNO Act that both species were new organisms. We note that the plants have never been recorded in any New Zealand herbaria, nor could MPI find any evidence indicating that the species (including their taxonomically accepted synonyms listed in the MPI application form for their determination in 2020⁷) was present in New Zealand immediately prior to 29 July 1998.

MPI investigated *Philodendron pedatum* and *Philodendron squamiferum* in 2020 and stood down any actions to control these plants, as no biosecurity risk was identified.

Submissions

We received two submissions from DOC and Ngāi Tahu regarding the change of status for *Pilea peperomioides*, *Philodendron pedatum* and *Philodendron squamiferum*.

DOC is opposed to the deregulation of these ornamental plants to avoid the legitimisation of likely illegally imported plant species in New Zealand. DOC stated that the change of status would encourage people to continue bringing new species illegally into the country.

Ngāi Tahu opposed the deregulation of these species due to the uncertainty around the biosecurity risk associated with the plants and the lack of information around the potential impacts on taonga species and the environment if they escape.

EPA response

Pilea peperomioides, *Philodendron pedatum* and *Philodendron squamiferum* were determined to be new organisms in 2020, meaning that owning, importing, propagating, or trading these plants is illegal.

The EPA understands the concerns raised by DOC regarding the potential increase of illegal imports if it were to deregulate plant species that may have been brought unlawfully into the country. We note that there is a risk of inadvertently encouraging the illegal importation of plant species that are new organisms into New Zealand, followed by their prescription as not new organisms.

Ngāi Tahu’s concerns about the biosecurity risk of *Pilea peperomioides*, *Philodendron pedatum* and *Philodendron squamiferum* were answered by the MPI Biosecurity team assessment. However, no assessment was done on their potential impact on taonga species and the environment if they were to escape gardens and establish themselves in the wild.

⁷ APP204097-Application.pdf (epa.govt.nz)

To date, the plants have not been reported to grow outdoors in New Zealand, but the climate in the north of North Island could potentially provide a suitable environment for them to establish.

One of the purposes of the HSNO Act is to protect the environment by preventing the adverse effects of new organisms. Despite being already present in the country, the impact of the deregulation of these ornamental plants remains unknown. The EPA must take a precautionary approach when dealing with uncertainty (section 7 HSNO Act). Therefore, we recommend having these plants evaluated through a release application to the EPA, as would be required for the import of any other new organism under the HSNO Act.

Recommendations

Based on the information provided by the applicant and the submitters, and to the best of our knowledge, *Pilea peperomioides*, *Philodendron pedatum* and *Philodendron squamiferum* are available and being sold in New Zealand as houseplants. There is, however, no evidence that these plants have formed a self-sustaining population in New Zealand, as they are only known to be present as pot plants. There are currently no efforts to manage, control or eradicate these plants under any Act.

As other pathways are available to change the status of these plants, we recommend retaining the new organism status of *Pilea peperomioides*, *Philodendron pedatum* and *Philodendron squamiferum*.

Paenibacillus alvei

Proposal

The bacterium *Paenibacillus alvei* (formally *Bacillus alvei*) was proposed by MPI to be made “not new” by an Order in Council. This organism is considered to be widespread in New Zealand.

Paenibacillus alvei is a facultative spore-forming Gram-positive bacterium. It is a ubiquitous saprophytic⁸ organism that can be found in various environments, such as cheese, fermented tomatoes, healthy beehives, honeybee guts, honey and soil. This bacterium is an opportunistic secondary invader of beehives that can be found on dead honeybee larvae, it is not a primary pathogen. It is also known to have potent antimicrobial activity against various pathogenic bacteria.

The Ministry for Agriculture and Forestry (MAF, now MPI) applied for a statutory determination of the new organism status of *P. alvei* in 2007. The only evidence provided of *Paenibacillus alvei* presence in the country pre-1998 was an indirect reference to a single sample sent from New Zealand to England in 1980. No publication of identification had been provided and therefore the methodology for the identification could not be validated. The HSNO Decision-Making Committee considered that in these circumstances, doubt remained about possible contamination of the sample and/or incorrect diagnosis. Therefore, *Paenibacillus alvei* was determined to be a new organism.

⁸ Saprophytes can be a plant, fungus, or microorganism that lives on dead or decaying organic matter.

In 2008, the bacterium was isolated from a dead bumblebee in Ohope (Bay of Plenty). The discovery triggered a MAF surveillance programme on honeybee exotic disease. In 2010, more than 500 samples were collected including honey, hive floor and soil. As a result, two isolates of the bacterium were found in Whanganui and Auckland.

According to the applicant, the new organism status of *Paenibacillus alvei* is a barrier to the trade of bee products, as the requirements that would need to be imposed in an Import Health Standard will be seen as unjustifiable by trading partners.

The applicant considered that the bacterium is highly likely to have been present in New Zealand for a prolonged period of time, based on its isolation from geographically disparate locations within New Zealand. Furthermore, due to its wide distribution in the country and the absence of evidence of the existence of more pathogenic strains overseas, MPI considered that there is no reason to maintain its new organism status.

Submissions

We received three submissions from Ngāi Tahu, s 9(2)(a), and DOC regarding the change of status for *Paenibacillus alvei*.

Ngāi Tahu neither supported nor opposed the deregulation of the bacterium.

s 9(2)(a) did not specifically support the change of status of *Paenibacillus alvei*. He is supporting a broader approach where all organisms that have established in New Zealand should not be considered as new organisms. He is proposing to amend the definition of 'microorganism' in section 2 of the HSNO Act.

DOC supported the deregulation as a determination has already been completed.

EPA response

We recognise the challenge to determine the new organism status of microorganisms under the HSNO Act, especially with the development of new technologies that allow the rapid isolation and identification of thousands of new (to science) microbial species. Since 2014, the EPA has taken the Baas-Becking theory of microbial ubiquity, as described in an EPA-commissioned paper by Ehlers and Lear⁹ into consideration when determining the new organism status of free-living bacteria. Species that are widely spread internationally and found in environments similar to those found New Zealand are evaluated on the balance of probability to be new organisms or not. Each determination is a case-by-case assessment, as not all microorganisms are ubiquitous.

Had the EPA considered the determination of new organism status after 2014 instead of 2007, it would have recommended the determination of this organism as 'not new', based on its global ubiquity, and evidence that it is a free-living organism (as opposed to an obligate pathogen). Although the EPA may revoke or reissue a determination issued by it if it receives further information, there is no new information beyond what was available to the EPA in

⁹ Ehlers C, Lear G 2014. The Biogeography of Environmental Microorganisms EPA Contract Reference Number: AAN2014-130

2007 at hand. Therefore, a reconsideration of the same evidence in a new determination is not a viable option. Therefore, the prescription of this organism as “not new” by an Order in Council is the only remaining legal option to acknowledge the global ubiquity of this organism and to clarify *P. alvei*’s status as a not new organism.

Recommendation

Based on the information provided by the applicant and the submitters, and to the best of our knowledge, *Paenibacillus alvei* is a globally ubiquitous species that was present in New Zealand prior to 29 July 1998, with a self-sustaining population in New Zealand. Additionally, there are no efforts to manage, control or eradicate this bacterium under any Act.

We recommend changing the status of *Paenibacillus alvei* to “not new” by an Order in Council, based on this information.

Taking into account sections 5 to 8 of the HSNO Act

Principles to be recognised and provided for (section 5)

The safeguarding of the life-supporting capacity of air, water, soil, and ecosystems; the maintenance and enhancement of the capacity of people and communities to provide for their own economic, social, and cultural wellbeing and for the reasonably foreseeable needs of future generations.

The applicants for *Dicyphus* n. sp. (NZAC04236621), *Parapsistera cloelia* and the Pepino mosaic virus stated that prescribing these organisms as “not new” organisms would enable the industry to undertake greater research into their impact on the New Zealand environment. The research would play a vital role in understanding any negative impacts and beneficial aspects to provide insight into viable management options.

The applicants for the three ornamental plants, *Pilea peperomioides*, *Philodendron pedatum* and *Philodendron squamiferum*, considered that a change of status would enhance the wellbeing of people and allow New Zealanders to source healthy and well-priced plants from reputable nurseries.

In the case of *Paenibacillus alvei*, prescribing this bacterium as “not new” would have economic benefits with the development of an Import Health Standard for bee products.

We consider that facilitating research to study organisms, improving the wellbeing of people or the commercial exchanges is consistent with the principles found in section 5 of the HSNO Act.

Matters to be taken into account (section 6)

The sustainability of all native and valued introduced flora and fauna; the intrinsic value of ecosystems; public health and the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu, valued flora and fauna, and other taonga; The economic and related benefits and costs of using a particular hazardous substance or new organism.

The matters relevant to the purpose of the HSNO Act, described in section 6, have been taken into account by recognising that the change of status by an Order in Council will:

- facilitate research to understand the impacts of the virus and the beetle on the New Zealand environment and to provide insight into viable management options;
- remove a trading barrier by lifting the sanitary measures on imports for bee products

The applicants provided information that *Paenibacillus alvei* and *Parapsistera cloelia* are established in New Zealand. Prescribing these two organisms as “not new” organisms will negate the need for approval from the EPA, removing costs and unnecessary regulatory burdens on research and innovation, and trade.

However, the three ornamental plant species and the Pepino mosaic virus have not self-established in New Zealand and their impact on native and valued introduced flora and fauna have not been evaluated. In order to take the matters in section 6 of the HSNO Act into consideration, an evaluation of an application for the release of these organisms (should one eventually be forthcoming) is recommended.

The information provided by the applicant on *Dicyphus* n. sp. (NZAC04236621) is limited. In the absence of a more detailed identification of the species and some knowledge of its ecology we cannot evaluate its potential impact in New Zealand environment.

In New Zealand, parties need to apply to the EPA to work on new organisms. The type of application and subsequent costs depends upon what activities are to be undertaken. A release application will allow applicants to collect and work on new organism specimens collected from the New Zealand environment. In some cases, if MPI considers the organism to be incidentally imported, such as for Pepino mosaic virus, a development in containment application will be available for the applicant.

New Zealand's international obligations

We did not identify any international obligations that would be impacted by the proposed Order in Council.

Precautionary approach (section 7)

All persons exercising functions, powers, and duties under this Act [...] shall take into account the need for caution in managing adverse effects where there is scientific and technical uncertainty about those effects.

Section 7 of the Act requires the need for caution to be taken into account where there is scientific and technical uncertainty, and this is referred to as a “precautionary approach”. The term ‘precautionary’ has been used in environmental decision making to reflect an approach to environmental management that takes account of the lack of knowledge about long-term outcomes where cause-effect relationships are not fully established.

A public consultation was held to reduce the scientific and technical uncertainty of the potential prescription of these organisms as not new. For the species that are already self-established, keeping their new organism status would not limit the risk they may represent.

Conversely, making an organism “not new” would help understand the long-term consequences of the organism’s presence in the New Zealand environment. We note that deregulating an organism does not mean that it cannot be managed or controlled under the Biosecurity Act if it is found to have adverse effects on the environment.

After evaluation of the submitted information in the submission process, there is uncertainty around the environmental impact of the bug, the three ornamental plant species and the Pepino mosaic virus in New Zealand, which is why we recommend not to deregulate these organisms.

Treaty of Waitangi (section 8)

All persons exercising powers and functions under the Act are required (under section 8) to take into account the principles of the Treaty of Waitangi (Te Tiriti ō Waitangi).

In reference to the “principles” of the Treaty of Waitangi, we focused our attention on the generally accepted principles of partnership, participation and protection.

The principles of partnership and participation refer to the shared obligation on both the Crown and Māori to act reasonably, honourably and in good faith towards each other to ensure the making of informed decisions on matters affecting the interests of Māori. The Crown’s duty of active protection is the obligation to take positive steps to ensure Māori interests are protected. Further, this protection is not merely passive, but rather extends to active protection of Māori people in the use of their lands and waters to the fullest extent practicable.

We reached out to iwi and Māori representatives to give them the opportunity to submit their views during a public consultation. We received opposition to the change of status of the three ornamental plants due to the lack of information on their impact on the environment, and we agree to recommend that the new organism status should not be changed.

Conclusion

Our analysis is that making *Paropsisterna cloelia*, *Paenibacillus alvei* “not new” organisms by an Order in Council is consistent with the relevant principles and the purpose of the HSNO Act.

However, we concluded that making Pepino mosaic virus, *Pilea peperomioides*, *Philodendron pedatum*, *Philodendron squamiferum* and *Dicyphus* n. sp. (NZAC04236621) “not new” organisms by an Order in Council is not consistent with the relevant principles and purpose of the HSNO Act.

Considerations under section 140 and 141 of the HSNO Act

Whether the organism has formed a self-sustaining population in New Zealand

Before making a new organism “not new” under section 140(1)(c), consideration must be given to whether the organism has formed a self-sustaining population in New Zealand.

We have evidence that *Paropsisterna cloelia* and *Paenibacillus alvei* have formed self-sustaining populations in New Zealand, and the change of status is unlikely to increase their distribution.

Dicyphus n. sp. (NZAC04236621), has also formed a self-sustaining population, however its deregulation is likely to increase its current limited distribution.

Pepino mosaic virus has only been recently detected in five Auckland greenhouses, it is still too early to determine if the virus has established a self-sustaining population.

The three ornamental plants are widely distributed in households; however, they are not considered self-established. Indeed, they are only propagated by humans and have not been observed growing in the environment.

Organisms that are not yet established, may become a greater threat to New Zealand if they are prescribed as “not new” organisms and both propagated and distributed more widely.

Whether any person is attempting to manage, control, or eradicate the organism

Before making an organism “not new” by an Order in Council under section 140(1)(c), consideration must be given to whether any person is attempting to manage, control, or eradicate the organism under any Act.

Only the Pepino mosaic virus is currently listed on the Unwanted Organism Register. Regarding the other candidates, to the best of our knowledge, we are not aware of any efforts to manage these organisms and they are not listed as unwanted by MPI.

Best international practices

Non-native species bring both costs and benefits. International legislation in other jurisdictions and guidance for the safe management of a new organism are focused on invasive species with negative effects on the environment. International instruments concerned with nature conservation mainly refer to the prevention of introductions and the control of established non-native species. We note that there is no restriction or barriers to study these non-native species equivalent to the regulation of new organisms under the HSNO Act in New Zealand.

We consider that as New Zealand’s legislation is not comparable to any other country’s legislation, i.e. the concept of a “new organism” is unique to New Zealand, there are no international best practices that can be followed.

Summary and recommendation

Our analysis shows that *Paropsisterna cloelia*, and *Paenibacillus alvei* have formed self-sustaining populations, and we are not aware of any attempts to manage, control or eradicate them. Prescribing these two organisms as “not new” organisms will remove the need for a HSNO Act approval and the associated costs of obtaining and complying with a HSNO Act approval. Consequently, the proposed Order in Council will facilitate research to

understand any negative impacts or beneficial aspects of these organisms or facilitate international trade.

Despite the establishment of *Dicyphus* n. sp. (NZAC04236621) in New Zealand and no attempt to manage the bug, we recommend gathering more information on its ecology before considering its deregulation in response to the concern raised by other government agencies and Ngāi Tahu.

We took into consideration the submitters' concerns on the risk of inadvertently encouraging the importation of illegal plants in the country for the ornamental plants as well as the lack of assessment on the impact on the environment for the plants and the Pepino mosaic virus. We decided that due to the uncertainty surrounding the impact of the species in question on the environment, other pathways would be preferable for the ornamental plants and the Pepino mosaic virus.

We (the EPA) have made the technical assessment of the organisms, and propose that only the beetle, *Paropsisterna cloelia*, and the bacterium, *Paenibacillus alvei*, should have their status changed to "not new" organisms.

Next steps

If you agree that these two organisms should no longer be new organisms, MfE will begin the regulatory process to change their status by an Order in Council.

Once decisions have been taken, we intend, in consultation with your office, to publish relevant material, such as submissions, on our website.

Table 2: Summary of submissions

Submitter	Opinion on proposal	Summary of submission
s 9(2)(a)	Support	Support the deregulation of microorganisms in general and a change of the definition of new organism in the HSNO Act.
School of Forestry	Support	Support the deregulation of the beetle <i>Paropsisterna cloelia</i> to allow more research "to understand its behaviour, fecundity, development, and the interaction" with other species currently present in New Zealand and find solution to control this pest.
New Zealand Dryland Forests Initiative	Support	Support the deregulation of the beetle <i>Paropsisterna cloelia</i> to allow research outside containment and improve the management of this pest and its impact on the forestry industry.
Ngāi Tahu	Neutral	Pepino mosaic virus and <i>Paenibacillus alvei</i> .
	Oppose	Opposed to the deregulation of <i>Dicyphus</i> n. sp. as it might have escaped a containment facility. Would prefer having this research done under containment. Opposed to the deregulation of the three houseplants <i>Pilea peperomioides</i> , <i>Philodendron pedatum</i> , and <i>Ph. squamiferum</i> due to the uncertainty of their biosecurity risks on taonga species and potential impacts on the ngahere.
	Support	Support the deregulation of <i>Paropsisterna cloelia</i> to find a biological control agent, a chemical free option that would reduce the chemical burden on the environment.
Department of Conservation (DOC)	Oppose	Opposed to the three houseplants <i>Pilea peperomioides</i> , <i>Philodendron pedatum</i> , and <i>Ph. squamiferum</i> to avoid legitimising likely unlawfully imported plants which could increase future illegal importations. Strongly opposed to the change of status of Pepino mosaic virus, as the organism was still under investigation by MPI and the risk of using a vaccine that causes symptoms. No study on the impact on native Solanaceae tomato relatives. Opposed to the deregulation of <i>Dicyphus</i> n. sp. due to the lack of information on the species. Would prefer carrying the research under containment.
	Support	Support the deregulation of the beetle <i>Paropsisterna</i> and the bacterium <i>Paenibacillus</i> .
Tomatoes New Zealand	Support	Support the deregulation of Pepino mosaic virus only at the strain level to conduct research and find management tools. Deregulating at the species level could have cause significant crop losses, and export market access loss.

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Te Kāwanatanga o Aotearoa
New Zealand Government