

Iwi & stakeholder questions and submissions (a selection is included in the application)

Part 1: response summaries

1) Questions (and responses from Dr Bob Brown) from Ian Shapcott, Kaitiaki o te Taiao, Guardians of the Environment Te Ātiawa Manawhenua Ki Te Tau Ihu Trust (December 2019)

- Does the introduction of these 2 biological control agents anticipate eradication?

No, biocontrol is not an eradication technique. Biocontrol agents bring populations of a target species down to a less harmful level. In this case the two proposed biocontrol agents should drive down the population levels of the wasps to a point where other technologies are more effective than they would have been prior, such as mating disruption and/or poison baiting.

- Do the agents die out if eradication occurs? (The ideal outcome is that the interdependence of these organisms is total, meaning that the introduced species disappear when the target species go.)

These two agents will not survive without their social wasp hosts. They are completely dependent on social wasps (in the genus *Vespula*) to survive.

- I'm guessing that they will compete for food with native pollinators, irrespective. And we are losing native pollinators

Yes, the adult hoverflies will compete for pollen and nectar at a small scale. However, they will also be reducing the wasp population which consumes a very high number of native bees, flies and other pollinators. On balance, the pollinators will be much better off with minor competition for flowers than with trying to avoid predation by wasps. Due to the predator-prey cycle, as the wasp population decreases with good levels of control, so will the population of the agents.

- NZ has ground-dwelling native bees. Please comment on potential direct threat and habitat competition.

These two potential agents come from the UK, which is home nearly 250 species of solitary bees, most of which are ground nesting species. None of these bee species have been found to be attacked by either of these agents. It is extremely unlikely that the two potential agents will start to attack solitary bees here in New Zealand. The two target species of *Vespula* wasps do likely compete with the native bees for nesting habitat. Since the agents require colony forming *Vespula* wasps to complete their lifecycle they will not compete with the bees for ground nest habitat, but instead will help reduce competition for the habitat by the invasive *Vespula*.

- Is TDC the first agency to look at this solution? If no, is there an Aotearoa history of application and monitoring?

The *Vespula* Biocontrol Action Group is the first in the world to consider using these two species as biological control agents against common and German wasps. There was a previous biocontrol programme that ran in the 1980s that released a parasitoid wasp (*Sphexophaga*

vesparum) that attacked wasp grubs in the nest. Unfortunately, that parasitoid wasp did not establish well and never had the desired effect on the wasp population. They can still be found in a few of the original release areas but are very rare today. One of the main reasons for the low impact of *Sphecophaga* was that the established population likely derived from a single female and therefore has little genetic diversity to adapt to changing conditions. Another reason is that the *Sphecophaga* were originally introduced from Switzerland and we now know that the wasps here originated from the southern part of the UK, so there may be a mismatch in ecotypes.

2) List of questions emailed to iwi/stakeholders in November 2019

- (1) What is the occurrence of *Vesputula* spp. wasps in your region? What impact do they have?
- (2) What is the current management regime on affected land and how successful is it?
- (3) Do you have any details about current management costs?
- (4) Do you have any comment on the possible effects on introducing the control agents?
- (5) Any other comments that you think might be helpful?

Date	Stakeholder	Responses
13/12/2019	Bay of Plenty Regional Council/ Toi Moana, Whakatāne	<p>(Q1) Wasps are widespread throughout the Bay of Plenty Region https://cdn.boprc.govt.nz/media/373646/pa03-wasps-web.pdf they may build up to moderately high numbers in some places but they generally don't reach the extremely high numbers you'd find in South Island beech/honey dew forests. Their impact are much the same as elsewhere in the country.</p> <p>(Q2) Wasps are listed as a "Restricted pest animal" in the Bay of Plenty Regional Council's (BOPRC's) current Regional Pest Management Plan (RPMP), which means "Occupiers and communities take the lead role in managing these pests, through voluntary control". The Council has the ability to "support funding if control is part of an approved Council programme (an Environmental Programme, Care Group, Community Control Programme)". The RPMP contains rules making it an offence to knowingly communicate...release... or propagate wasps.</p> <p>BOPRC provides advice on wasp control when requested.</p> <p>(Q3) BOPRC is not currently funding any wasp control</p> <p>(Q4) BOPRC supports the testing and release of Biological control agents (mainly for the control of pest plants) provided it can be demonstrated that they pose minimal risk of causing a negative impact to desirable non-target species.</p>
9/12/2019	Taranaki Regional Council	<p>(Q1) Our occurrences are based on public enquiries received through our biosecurity section. There could be a lot more we don't record as public engage directly with contractors. There is an obvious spike that occurs during the wasp season and so the types of enquiries fielded are Schools and child-care facilities as well as elderly households and retirement facilities. The region like many other places has a number of public gardens and walkways and have their fair share of encounters. The bee industry is</p>

	<p>huge in Taranaki and so I would imagine that this would spark huge interest; Enquiry wasp & bees received typically between Oct – April</p> <p>(Q2) Referral to contractors in most cases. Direct control where they pose a risk to children’s health and safety. Most cases for direct control staff will use puffer and dust. On the larger landscape particularly on stakeholder council owned gardens we have the provisions of vespex. Vespex we have trialled but timing wasn’t ideal as they weren’t taking protein.</p> <p>(Q3) Nil</p> <p>(Q4) No comment on effects but endorse that key stakeholders like commercial bee people, pest contractors, Doc and Iwi need to be a part of discussion.</p> <p>(Q5) The attached report has answered any questions that I have.</p>
<p>Marlborough Regional Council</p>	<p>(Q1) Vespula wasps are very common throughout Marlborough and are particularly abundant over the summer months in the northern part of the Marlborough Region (the Marlborough Sounds). This is predominantly due to the forested ecosystems and presence of beech forests. In terms of impacts (acknowledging the qualitative nature) – we receive a large amount of community feedback that Vespula wasps cause immense frustration when the public are using the likes of picnic areas, camping areas and the forested ecosystems at large in the Marlborough Sounds. This is primarily through the wasps attempting to forage food. When in large numbers we have received feedback that the wasps can also be a considerable danger with areas becoming virtually unusable due to the risk of ‘attack’.</p> <p>(Q2) Given the widespread, established nature of Vespula wasps, there is no large scale management using ‘standard’ control tools such as toxins. Each summer, some community groups and the Department of Conservation conduct baiting operations in some targeted areas to alleviate the above mentioned impacts. However, as this baiting protein occurs in late summer, users often experience the high numbers through the early part of summer – which is when they wish to utilise the same areas. With these operations occurring annually, there may be a gradual reduction in activities if having an impact of nests/queens but there is always a reservoir in the surrounding areas.</p> <p>(Q3) Sorry, no – as not directly involved in such projects. Do know that there is a large amount of volunteer/community labour inputs into existing work though. Department of Conservation may have better information on cost for projects they are directly involved in?</p> <p>(Q4) Given the limitations described above – widespread, very well established – Vesupla wasps are a perfect candidate for biological control. As agencies managing invasive species threats, a target is only considered for population level management if there are tools available to manage the threat and the nature of infestation means the population can be feasibly managed as a whole. Vespula wasps obviously fall outside</p>

		<p>these parameters. The impacts however continue to be felt widely and strongly, so should there be agents that can reduce or even suppress Vespula populations, this is whole heartedly endorsed by Marlborough District Council. Should those potential agents be mobile and able to impart effects across the landscape, then this would be even better. In short, a reduction in Vespula populations to even a modest amount, would relate to a tremendous positive effect on our community, environment and local economy (apiculture)</p> <p>(Q5) Key points covered in previous comment. 1) Perfect candidate for biocontrol, 2) current large impacts, 3) wholly support initiative for agents that may be able to provide landscape scale population reductions or suppression.</p>
23/12/2019	ApiNZ Science and Research Focus Group, Karin Kos	<p>The Focus Group supports the release of these parasitoids. Regarding the specific questions, many of the answers can be found in successive Colony Loss reports, for example, wasps ranked third in the most frequent cause of colony loss. They account for 12.1% of losses as detailed in the Colony Loss Survey of 2018.</p> <p>We also make the following comments to your points:</p> <ul style="list-style-type: none"> • What impact do common and German wasps have on beekeeping? Significant as outlined in the Colony Loss Surveys from 2015 to 2019. Wasps consistently ranked highly as a cause of Colony Loss: <p>12.1% in 2018 (3rd highest ranked cause)</p> <p>9.7% in 2017 (4th highest ranked cause)</p> <p>11.7% in 2016 (3rd highest ranked cause)</p> <p>See this link for the infographics and detail https://www.landcareresearch.co.nz/science/portfolios/enhancing-policy-effectiveness/bee-health</p> <p>(Q1) Poisoning with strong recommendations that the public and beekeepers use Vespex which is not attractive to bees. So while Vespex may be a relatively effective option, the issue is the public (particularly the public/landowners) using baits like jam baits, fly sprays, which also kill bees. We would also note that as with any insecticide that poses a moderate health risk to humans and the environment with overexposure, we would like to eventually see insecticides replaced by bio-control or other non-chemical methods.</p> <p>(Q2) No, unfortunately there are no records of costs relating to wasp management.</p> <p>(Q3) We support introducing the control agents. What do you see as the possible ecological effects of introducing each of the control agents? We are not aware of any possible ecological effects</p>
	Dairy NZ	<p>(Q1) DairyNZ has no information about this. I'd expect for the most part treatment is done for acute situations and probably to reduce the incidence of stings to farm workers rather than on stock.</p>

	<p>(Q2) DairyNZ has no information about this</p> <p>(Q3) DairyNZ supports in principle the use of biocontrol agents providing they meet all the requirements for host specificity etc and are approved via the EPA process.</p> <p>(Q5) No, but I wish you every success with the approval process. Biocontrol agents for wasps can make a big difference for native biodiversity and ecosystem services. Drop me a line if you want to discuss anything.</p>
**	<p>Kiwifruit Vine Health</p> <p>(Q1) Kiwifruit growers fund the majority of costs for destroying wild (or naturalised) kiwifruit plants (<i>Actinidia</i> spp.), which often establish in bush or forestry land near kiwifruit orchards. Most wild kiwifruit establishes via bird-borne seed dispersal. Destroying wild kiwifruit is now one of the biggest pest plant control programmes in NZ with contractors destroying 15 to 20 thousand wild plants annually. Most work is undertaken in the Bay of Plenty and Tasman District (and especially Golden Bay) regions. Contractors often encounter common or German wasp nests, and have to be very vigilant to not step into a nest and suffer multiple stings.</p> <p>Wasps do not cause significant damage to kiwifruit fruits, but do cause indirect problems which impact the industry. Every year wasps are a problem in some orchards – usually at harvest (March to June), presenting a health and safety risk to harvest workers. The industry has limited control options at (or near) harvest, as any insecticide residue on fruit may restrict market access. A wasp population developing resistance to an insecticide is also a possibility.</p> <ul style="list-style-type: none"> • At flowering (November), kiwifruit growers contract beekeepers to place beehives into orchards to assist pollination. Wasps have been known to attack hives or “rob” them of solutions used to feed bees. • Many orchards have willow shelter belts. Giant willow aphid (GWA) often establish in the willows. GWA honeydew is a major attractant for wasps, bringing them into kiwifruit orchards and increasing local wasp populations. These populations may cause the above problems. <p>(Q2) Contractors carry “Expra Stop Wasps” spray and “Permex” insect dust to apply to nests. These pesticides are only partially successful, contractors get stung approximately once every 5 to 10 working days. Up to 8 contract team members are working daily Monday-Friday.</p> <p>The Zespri Orchard Productivity Centre has produced a wasp technical bulletin (attached and based on Landcare Research information) which is available to all growers and advisors.</p> <p>(Q3) Of the three contract teams controlling wild kiwifruit, the cost of wasp sprays would likely be up to \$300 yearly. Contractors also have to purchase anti-histamines, also approximately \$300 yearly. Although vigilant, the contractors are managing a significant health and safety risk. Multiple stings are not uncommon and there is possibility of serious harm.</p> <ul style="list-style-type: none"> • The cost of stings to kiwifruit harvest workers is not documented.

	<p>(Q4) A range of host-specific, biological control agents for common and German wasps presents the best opportunity to effectively reduce wasp populations.</p> <p>Parasitoids are generally a good option for control, especially because (as mentioned) insecticides can give residue and resistance problems.</p> <p>(Q5) Reducing wasp populations, through a successful biological control programme, will reduce risk of serious harm from common and German wasps to contractors controlling wild kiwifruit.</p>
**	<p>Waikato Regional Council</p> <p>(Q1) Vespula wasps are widespread throughout the Waikato Region at varying densities. Wasps are considered to impact on primary production (e.g. bee hives, orchards, vineyards etc.), the environment (but this has not been quantified) and public e.g. amenity values, health) in the Waikato</p> <p>(Q2) Vespula wasps are included in the Waikato Regional Pest Management Plan (2014-2024). The long-term objective is to 'Reduce the adverse effects of wasps species within the Waikato Region' and the objective for the current plan is to 'Reduce the risk of wasps adversely affecting the environment, production and people in the Waikato region for the duration of the plan'. Vespula wasps are listed as 'site-led' species in the current plan. The rules are as follows: Plan rule 6.18.3: On complaint from any affected party the occupier is required, on direction from an authorised person, to control Australian paper wasp, common wasp and German wasp by destroying any wasp nest where the nest occurs on land occupied. A breach of this rule will create an offence under Section 11.3.1 of the plan. Exemptions to a rule may apply, as outlined in Section 11.3.2 of the plan.</p> <p>Good neighbour rule 6.18.4: The occupier shall, on a complaints basis, unless otherwise agreed, control Australian paper wasp, Asian paper wasp, common wasp and German wasp by destroying any wasp nest within 50m of the boundary of a property or high public use area. This rule shall be enforced on receipt of a complaint and following the direction of an authorised person. This rule is subject to the process requirements listed in Section 4.23. Direct control: In accordance with section 11.6 of the plan, Waikato Regional Council will undertake compliance monitoring of the above rule, on a complaints only basis, in accordance with section 11.2.2 of the plan.</p> <p>Information and advice: Waikato Regional Council will provide advice and information on the threats of Australian paper wasp, Asian paper wasp, common wasp and German wasp to affected land occupiers and other interested parties, in accordance with section 11.1 of the plan.</p> <p>In 2018/2019, we did the following:</p> <ul style="list-style-type: none"> • Responded to 51 enquiries/complaints about wasps (this includes both Vespula wasps and paper wasps) • Provided advice on where to purchase products, and provided factsheets/advice to landowners • No site visits were undertaken <p>(Q3) In 2018/2019 we budgeted \$40,383 for wasp control, but only spent \$22,545. \$20,000 of this was WRC's contribution to the national wasp biocontrol programme, so only \$2,545 was spent on actual control</p>

		<p>(Q4) WRC fully supports the use of biocontrol agents to control wasps</p> <p>(Q5) While WRC recognises the impacts of wasps, we have taken a low-key approach to wasp control. Basically, they fall into the ‘too hard’ basket, and we do not have enough information on their impacts in the Waikato to justify to the councillor’s an increase in the budget. While we recognise that biocontrol will not be the silver bullet, we hope that it will have enough impact on wasps to reduce their impacts on production/environmental and public values in the Waikato.</p>
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