

Biotechnologies and Māori: An Ongoing Conversation

Palmer, Symon*; Mercier, Ocean Ripeka*; King-Hunt, Alan*; Lester, Phil*

***Victoria University of Wellington**

Aotearoa is faced with declining bioheritage due to invasive species and biosecurity threats. Recognising this, the government has set a target of becoming predator free by 2050. However current pest management tools depend on manual labour or broad-spectrum poisons that lack landscape scale. The BioHeritage National Science Challenge has invested in research to address these issues. Our research so far has considered invasive invertebrates, specifically, the German and common wasp, which cost the New Zealand economy an estimated \$133 million annually. Māori are invested in primary industries said to benefit from the control of wasps, and as Treaty partners, play an enduring and critical role in managing our natural environment.

While some advancements have been made in pest management tools, a 'step-change' will be required for Aotearoa to become predator free. Biotechnologies are one possibility but are contentious historically to Indigenous peoples globally. Internationally, technological advancements like CRISPR Cas-9 are developing at pace across industries such as health, agriculture and bioenergy. Indigenous peoples must continue to engage and guide on these complex issues.

In our research, three mixed-method studies were conducted, including ranking exercises, Q-method, focus groups and interviews. We sought and examined Māori perspectives on the potential use of several novel biotechnologies in pest wasp management. Participants included Māori businesses, university students thinking and writing on these topics, and religiously or spiritually affiliated tangata whenua. Across these studies, participants expressed that 'doing nothing' about wasps was the worst possible option, a view consistent with kaitiakitanga. A spectrum of views were expressed, including opposition to and interest in new technologies. Participants saw the benefits of some kinds of technology over others, favouring demonstrably safe, effective, 'natural' and tikanga-friendly controls. Risk, trust and communication of biotechnologies surfaced as major barriers. Participants made strong connections to tikanga and rangatiratanga to inform their responses.

Two potential tools are surmised to have the greatest potential in pest wasp and varroa mite management: RNAi and gene drive (CRISPR cas9). Thus, we will focus on these two novel technologies in this presentation, and present a 'baseline' of Māori perspectives on gene silencing and gene drive. This will illuminate the next steps required in research to contribute to this emerging discussion.

Biography of presenting author

Symon Palmer (Ngāi Te Rangī)

Symon Palmer (Ngāi Te Rangī) is a Research Assistant and Teaching Fellow at Te Kawa a Māui (School of Māori Studies) at Te Herenga Waka (Victoria University of Wellington). His research interests include pest management issues, identity, and decolonisation.