

110613

He tono nā



Te Rūnanga o NGĀI TAHU

ki te

**ENVIRONMENTAL PROTECTION AUTHORITY**

e pā ana ki te

**EPA APPLICATION APP202142 – Approvals for plant protection products containing acephate, dimethoate, methamidophos, methomyl or oxamyl.**

01 September 2014

**Contents**

1. EXECUTIVE SUMMARY
2. TE RŪNANGA O NGĀI TAHU
3. TE RŪNANGA STATEMENTS OF POSITION ON APP201847
4. RECOMMENDATION

**Sponsor – James Caygill**

**General Manager Tribal Interests | Te Rūnanga o Ngāi Tahu**

**James.caygill@ngaitahu.iwi.nz | Phone 03 366 4344 | PO Box 13-046 | Christchurch**

**Author – Oliver Sutherland**

**Member, Ngāi Tahu HSNO Komiti | Te Rūnanga o Ngāi Tahu**

**Request to be heard**

Te Rūnanga o Ngāi Tahu wishes to appear to speak to this response.

Page | 2

## **1. Executive summary**

Te Rūnanga o Ngāi Tahu is glad to see this application before the Authority correcting, as it does, an oversight in the controls imposed in an earlier Decision. However, on the basis of the data presented, and that not available, we propose stricter controls than the applicant proposes for four of the five plant protection products under consideration. This will not only afford more protection from the effects of insecticide residues for honey bees but may also go some way to protecting native flower-visiting insect species for which there is no behavioral or mortality data.

## **2. Te Rūnanga o Ngāi Tahu**

2.1 This response is made on behalf of Te Rūnanga o Ngāi Tahu (Te Rūnanga). Te Rūnanga is statutorily recognised as the representative tribal body of Ngāi Tahu Whānui and was established as a body corporate on 24<sup>th</sup> April 1996 under section 6 of Te Rūnanga o Ngāi Tahu Act 1996 (the Act). We note the following relevant provisions of our constitutional documents:

(a) Section 3 of the Act States:

This Act binds the Crown and every person (including any body politic or corporate) whose rights are affected by any provisions of this Act.

(b) Section 15(1) of the Act states:

Te Rūnanga o Ngāi Tahu shall be recognised for all purposes as the representative of Ngāi Tahu Whānui.

(c) The Charter of Te Rūnanga o Ngāi Tahu (1993, as amended) constitutes Te Rūnanga as the kaitiaki of the tribal interest.

2.2 Te Rūnanga respectfully requests that this response is accorded the status and weight due to the tribal collective, Ngāi Tahu Whānui, currently comprising over 49,000 members registered in accordance with section 8 of the Act .

### **3. Te Rūnanga statements of position on APP202142**

#### **3.1 Introduction**

Te Rūnanga o Ngāi Tahu appreciates the Environmental Protection Authority's initiative in acting to restore non-contact periods for a number of organophosphate and carbamate-based plant protection products. While it is not clear how such controls were overlooked in the decision on APP201045, there is no doubt that such controls are necessary, not only to protect the major agricultural pollinator, the honey bee, but also native species (which may also be pollinators) that visit and feed on the flowers of those cultivated plant species subject to treatment with insecticides and other plant protection products.

#### **3.2 Proposed non-contact periods (see Appendix B)**

In general, and in the absence of comprehensive datasets in most cases, the applicant has adopted a policy of 'best guess' in setting non-contact periods. There may be no alternative to this, but as argued below, Ngāi Tahu would urge the adoption of a more conservative, precautionary, approach than that evidenced in the application. The following sections 3.2.1 to 3.2.5 relate to the relevant datasets included in Appendix B.

**3.2.1 Acephate:** No aged residue study lasted longer than 4 days, at which time honey bee mortality ranged from 5% to 40%. It is unknown what mortality might have occurred had the trials gone on for longer. However, these tests were undertaken with about 1/3<sup>rd</sup> the application rate that would be applied in New Zealand. Again, it is unknown just what mortality would have occurred, and for how long, had a more realistic application rate been used. The applicant's estimate that a non-contact period of 7 days would provide protection to honey bees seems too short. We would advocate at least 10 days.

**3.2.2 Methamidophos:** Little data was available to the applicant, but the DT50 results for this chemical gained from the studies of Orthene (see the results for acephate, Table 4.2, p. 224) of 4.63, 5.95, 8.0 and 11.9 days should surely indicate the need for caution. We can see no justification for the applicant's proposed 0 days

and would suggest a non-contact period of 5 days. [We note that prior to the decision on APP201045, the non-contact period for methamidophos was 7 days].

**3.2.3 Dimethoate:** We cannot accept (or see the applicant's rationale) for a 7-day non-contact period for this chemical. The two key studies ran for only 7 days, at which time both studies still showed an effect on bee behavior and/or mortality. Regrettably, the studies terminated before any end-point was reached. The third trial ran for up to 14 days and showed significant mortality at 12 days. The fourth trial ran for 23 days with effects still obvious at 7 days if not longer. The fifth study can be disregarded, but the final study – on contaminated nectar – ran for 14 days with harmful levels of dimethoate persisting for the full 14 days. Again in this case no end-point was reached.

The applicant concludes (6.5 p. 240) that 7 days is safe; but in fact this was simply the length of the trial in the two best studies. In each case, significant mortality was still occurring at 7 days and would almost certainly have gone on occurring for several more days had the trials run for longer (see the other dimethoate trials). Taken together, these data do not provide a basis for a non-contact period of 7 days. We propose a non-contact period for dimethoate of 14 or 21 days.

**3.2.4 Oxamyl:** We agree with the 10-day non-contact period for this material.

**3.2.5 Methomyl:** The applicant's conclusion regarding methomyl (last sentence of 8.4) viz. "the residual toxicity control of 10 days...should be kept, but could be slightly reduced to 8 days" makes no sense to us at all. In our view, a reduction from 10 to 8 days is not 'slight' and, in any case, the data which shows significant bee mortality still at 8 days suggests that the non-contact period should remain at 10 days.

**3.2.6 Applicant's bias towards the agricultural sector:** The applicant points out on several occasions that the new set of non-contact period controls should not unduly upset the agricultural/horticultural sector and the agrichemicals industry because such controls were already in place for some time prior to the APP201045 decision. At the same time he remarks in several places that the proposed controls are less restrictive in some cases; viz. "the restrictions proposed are now less stringent than the original HSNO approvals with no non-contact periods proposed

for methamidophos products, and reduced non-contact periods proposed for methomyl” (p. 11). It appears to us that the applicant is endeavoring to play down the impact of the controls on the agrichemicals industry, and this appears to us to be the motivation behind the less restrictive controls on methamidophos and methomyl. In neither of the latter two cases do the honey bee trials back up these softer controls.

Te Rūnanga o Ngāi Tahu urges the Authority to take a precautionary approach (as required by the Act) and to err on the side of protecting the environment (and thus native biodiversity) rather than impose softer controls in order to appease industry.

### **3.3 Benefits and impacts on Māori culture and traditions**

There is no doubt that the imposition of non-contact periods for the application of the plant protection products included in this application will reduce honey bee mortality resulting from the ingestion of, or contact with, residues of these products. This will certainly contribute to healthier bee colonies and hence benefit beekeepers and those involved in the honey industry, Māori and Pākehā alike. There will also be major benefit to pastoral agriculture and to the horticultural and field crop sectors through honey bee pollination of white clover and other valued commercial plant species.

But a question arises regarding the applicant’s statement of the wider benefits resulting from the proposed non-contact periods: “The measures proposed...are intended to mitigate the risks arising from the extended residual toxicities of these substances so that bees *and other pollinators* are not adversely affected” (p. 10) (our emphasis), and “The expected benefits of [honey] bee protection should aid Māori in their role as kaitiaki *and protecting the 28 native bee species* as well as the introduced species” (p. 15) (our emphasis).

In fact, the applicant produces no data to show that the measures which it hoped will protect the honey bee, *Apis mellifera*, will be sufficient to protect the native bee species nor other flower-visiting native species, which include at least six insect orders, in particular native diptera (up to 15 families).<sup>1</sup> While it is true that these

---

<sup>1</sup> Walker M.K., Howlett B.G., McCallum J.A., Wallace A.R. and Teulon D.A.J., 2009, Small arthropods as pollinators in a New Zealand pak choi field trial: *New Zealand Plant Protection* 62, 92-98.

native species are not particularly abundant in human-modified environments, some species can be abundant. For example, Donovan<sup>2</sup> has shown that native bee species can be very numerous on kiwifruit flowers, and are commonly found in onion and brassica seed crops, as well as on citrus, avocado and lucerne as well as on red and white clover. While there is less data on flower-visitations by other native insects (e.g. flies, beetles and moths) they are certainly regularly found on commercial crops<sup>3</sup> – for instance, a total of 31 species found on flowering *Brassica rapa*.<sup>4</sup>

There is, in fact, nothing to back up the applicant's statement that the proposed non-contact periods will be sufficient to protect these taonga native bee and other native flower-visiting species and in the absence of data we remind the Authority of the Treaty Principle of Active Protection of taonga species and urge the Authority to adopt the precautionary approach and the controls which we have advocated.

#### **4. Recommendation**

In the absence of any data on the effects of these chemicals and their residues on the health and behaviour of flower-visiting native insect species, and on the basis of the data on honey bee behaviour and mortality, Te Rūnanga o Ngāi Tahu recommends that the Authority imposes the following non-contact period controls: acephate, 10 days; methamidophos, 5 days; dimethoate, 14 or 21 days; oxamyl, 10 days; methomyl, 10 days. We also recommend that the agribusiness industry commissions research on the effects of these and other plant protection products on those native bee and other insect species which are known commonly to visit the flowers of commercial crop species.

---

<sup>2</sup> Donovan B.J., 2007, Apoidea (Insecta: Hymenoptera): *Fauna of New Zealand* 57, pp. 23, 192-197. <sup>2</sup>

<sup>3</sup>Howlett B.G., Walker M.K., Newstrom-Lloyd L.E., Donovan B.J., Teulon D.A.J., 2009, Window traps and direct observations record similar arthropod flower visitor assemblages in two mass flowering crops: *J. Appl. Entomol.* 133, 553-564.

<sup>4</sup> Rader R., Howlett B.G., Cunningham S.A., Westcott D.A., Newstrom-Lloyd L.E., Walker M.K., Teulon D.A.G., Edwards W., 2009, Alternative pollinator taxa are equally efficient but not as effective as the honeybee in a mass flowering crop, 2009, *J. Appl. Ecol.*, 46, 1080-1087.

