

23rd February, 2015

To; Helen Atkins, Chair Person, EPA Decision Making Committee APP202142

From; Technical Committee of the National Beekeepers Association

Discussion Paper APP202142 - REF:0084853

The Chair Person of the EP Decision Making Committee has requested that the Technical Committee of the National Beekeepers Association review the alternate control options contained in the Market Access Solutionz/Hort NZ submission, and provide an opinion, on behalf of the NBA, on the practicality and appropriateness of their proposals. It would be useful to hear your thoughts on the merits and/or drawbacks of those proposals.

1. This discussion paper is specific to the discussion items raised in the Market Access Solutionz/Hort NZ submission with respect to the beneficial pollinators, honey bees and bumble bees.
2. Reference 6.2 of the Market Access Solutionz/Hort NZ submission. It is our belief that this section misrepresents the position of the NBA for the following reasons;
 - a. The NBA initiated this reassessment of organo phosphates and carbamates because it rightfully believed that the non-contact periods in place before the decision of APP201045 was an omission by the EPA. This is confirmed in section 2.1 of the EPAs Evaluation and Review Report for APP2020142.
 - b. No new data on dimethoate was submitted to the EPA when the omission was discovered. We used existing data on dimethoate in our discussion and called for a further reassessment
 - c. The Market Access Solutionz/Hort NZ submission is correct, that the NBA did not make a submission to the original re-assessment APP201045, because it was our belief that there would be no changes in the non-contact periods for these products.
 - d. The changes being recommended by the EPA – see Table 1.2 Executive Summary of the Evaluation and Review Report for APP202142, should not make any significant difference to horticultural practices that were in place before the decision was made with respect to APP201045.
 - e. The NBA does not support or agree with the argument presented by the Market Access Solutionz/Hort NZ submission,
 - i. ‘that we had undue influence on the EPA’ and:
 - ii. “Industry does not believe that a reassessment should have been granted for any of these compounds based on a request from NBA who chose not to participate in the original reassessment process.” is especially disturbing to the NBA and to all other submitters.
 - iii. The NBA acknowledges that we were not a submitter for APP201045 but we defend our right to point out to the EPA that they had made an omission in APP201045.

3. Reference 6.4 the Market Access Solutionz/Hort NZ submission.

The NBA believes that EPA has made New Zealand a world leader in environmental protection through improving the management of hazardous substances.

The HSNO Act and Regulations with their 4 categories of ecotoxicity (9.1, 9.2, 9.3, 9.4) are unique in the world and we are not in favour of 9.2, 9.3, 9.4 being phased out as presently being proposed by adopting the UN GHS.

The NBA recognises that Section 49 of the Hazardous Substances (Classes 6, 8 & 9 Controls) regulations 2001 is also unique, and very important mechanism for protecting beneficial pollinators from the effects of systemic pesticides.

4. Reference 6.4 the Market Access Solutionz/Hort NZ submission.

The NBA's primary interest is the safety and protection of domesticated and managed colonies of honey bees. For crop pollination in NZ, domesticated hives of honey bees or bumble bees are the two main pollinators used.

We are not aware of crop growers moving their crops to be near feral populations of honey bees or bumble bees. But growers seek beekeepers to move bees close to their crops for pollination purposes. Feral bees are not really the subject of this discussion.

Feral honey bees were significant pollinators until the advent of Varroa. Varroa had a marked effect on the feral honey bee population, but no effect on feral bumble bees as they do not invade their colonies.

Feral means that these colonies are not domesticated or hived and they propagate naturally. Honey bees escape from domestication to the wild on a regular basis through swarming, the process when a Queen bee leaves the hive to seek a new home and takes a number of worker bees with her. If they make a hive in the wild, inside a tree, wall or box, they are considered feral. Without human intervention to control Varroa they will eventually die out. Varroa destroyed feral bee hive colonies that had existed in some localities for many years. There are feral honey bee colonies still in our environment and some appear to be adapting to living with Varroa on a longer term basis.

A member of the Technical Committee of the NBA is presently mapping them to determine their longevity and perhaps their long term resistance to Varroa infection.

Bumble bees are present widely in the NZ Environment. They do not swarm like honey bees. The hive lasts for a single season, early spring to late autumn and the Queen bumble bee winters over alone, starting a new colony in the early spring.

Bumble bee growers in NZ rely on sourcing new genetic stock each year by harvesting feral bumble bees, mainly from the South Island.

5. Reference 7 the Market Access Solutionz/Hort NZ submission.

The claim that 4 crops cannot comply with non-contact periods is we believe not substantiated.

Active Ingredient	Earliest registration as a pesticide in New Zealand ¹	HSNO Act came into force, with Non-contact periods set
acephate	3/01/1974	2001
dimethoate	10/03/1977	2001
methamidophos	7/06/2001	2001
Methomyl	1/12/1973	2001
Oxamyl	28/02/1979	2001

It concerns the NBA to hear this claim as all these chemicals have a long history of use in NZ agriculture and horticulture. They have been safely used for many years with growers having full knowledge of their toxicity to honey bees. Refer to the above table.

6. Reference 7.1 the Market Access Solutionz/Hort NZ submission

It concerns the NBA to hear that the submitters support a non-label use for acephate. Orthene WSG (ACVM Registration P002041).

The label recommendation for application to Citrus could not be clearer; *“Apply at monthly intervals from petal fall until 14 days before harvest.”*²

The ecotoxicity warning could not be clearer; *“Very toxic to terrestrial invertebrates including bees. Spray must not contact plants from 7 days before flowering to petal fall if the plants are likely to be visited by bees.”*³

The only other registered acephate containing product Lancer (ACVM Registration P006086) has the identical label recommendations as Orthene WSG for citrus. The Lancer label was renewed by MPI on 24/9/2014, after the decision of APP201045, and there is no addition of Citrus Flower moth or any change to the non-contact period, which is 7 days, the same as before the APP201045 decision.⁴ Surely it is in the chemical’s proprietor’s commercial interests to register that their product controls citrus flower moth?

Our review suggests that the submitters have been expedient with the truth with respect to citrus by not mentioning that despite the funds spent on research that to date no registration has been applied for applications during flowering for the pest citrus flower moth.

The NBA acknowledges that bees will forage for pollen and nectar in citrus crops.

But we must point out that lemons do not require bees for pollination. Many seedless varieties of citrus fruit are produced without pollination, by parthenocarpy.

¹ ACVM Public register - <https://eatsafe.nzfsa.govt.nz/web/public/acvm-register>

² <http://www.zelam.com/product/orthene-wsg.pdf>

³ <http://www.zelam.com/product/orthene-wsg>

⁴ <http://www.adriacp.co.nz/docTech/Lancer%2075DF.pdf>

Since the introduction of the HSNO Act, the NBA has no reports of any incidents involving bees and the spraying of insecticides on flowering citrus. It could be assumed that citrus growers and bee keepers have a healthy respect for each other's activities

The NBA believes that beekeepers can accept the situation with respect to citrus crops and not have undue harm to their hives. Do not spray during flowering and maintain the 7 day non-contact period prior to flowering.

The submitters have not taken into account the systemic nature of acephate in their argument, which the NBA believes is significant. Applied 7 days before flowering acephate is still active in the plant for sucking insects, and this indicated by the submitters suggested a 21 to 56 day spray interval for control of citrus flower moth. Overlooking the systemic mode of action of the insecticide is a significant error of the submission.

Beekeepers ask for the 7 days non-contact period on other crops where acephate is used to prevent unnecessary harm to their bees, and we believe growers have not been harmed with this non-contact period being in place for over 12 years.

7. Reference 7.2 the Market Access Solutionz/Hort NZ submission

It is a mistake to categorically state that honeybees do not enter a greenhouse or work under covered crops. During drought conditions large numbers of honey bees have been observed foraging in greenhouse capsicums as that is the only place they can obtain nectar and pollen. Honeybees have been used in NZ to pollinate covered blueberry crops and recently covered kiwifruit crops. Dow AgroSciences presented the EPA with honey bee trial data where honeybees were restricted to forage in extensive plastic tunnel houses⁵.

It is agreed that honeybees prefer to be in the open, but wrong to say they never forage under covered crops. Bumble bees are recognised as being much more proficient pollinators in covered crops and are the preferred pollinator for greenhouses.

There is a fundamental difference between the users and the owners with respect to honey bee hives and bumble bee hives when these pollinators are used.

- a. In the majority of cases when honey bees are used to pollinate a crop the hive ownership remains with the beekeeper. The beekeeper moves the hive to the crop for flowering so his bees provide the pollination service and at petal fall the beekeeper moves the hives to another site where he may gather honey. Example; pollination of kiwifruit occurs first then the hives maybe moved to a manuka area to gather manuka honey.

The grower pays for the use of the hives during pollination and there is a contract between the grower and beekeeper which includes keeping the bees safe from pesticide exposure. The beekeeper wants a healthy fully populated hive to be ready and able to continue foraging for nectar and pollen, once the pollination service is completed. The grower wants his crop pollinated.

The beehive continues in use, earning income for its owner when moved to another property. A beehive is worth \$350 to \$400 (Purchase value).

⁵ EPA application ERMA200886 – Sulfoxaflor

- b. When bumble bees are used for pollination, the grower purchases the hives from a bumble bee breeder and the grower owns the hives for the growing season. Hives cost \$150 to \$200 and they become an asset for the season for the grower.

It is in the best interests of the owners, the beekeeper and the grower, to not lose their hives to pesticide use.

Bumble bee hives are considerably smaller than a honey bee hive – 80 to 400 bumble bees per hive⁶ compared with 20,000 to 40,000 honeybees per hive. Bumble bees used in pollinating greenhouse crops are placed in special hives⁷ that can enable the grower to lock them up. They can be shut up in the evening and left locked up for 24 to 72 hours during spraying and afterwards. This does not harm the bumble bee.

It is noted that the application of oxamyl in irrigation systems is not a registered use for this active ingredient. But in the NZ greenhouse industry it is widely used and has proven to be very effective as oxamyl is a very systemic insecticide.

We have been advised by Roelf Schreuder Operations Manager of NZ Gourmet, that the metabolites of oxamyl in the plant are not toxic to bumble bees⁸. But if the bumble bees access the freshly mixed irrigation water it can be toxic. NZ Gourmet's subsidiary Zonda is the NZ representative for Koppert and a NZ breeder of bumble bees.

It is acknowledged that this past season has seen very high levels of whitefly infestation with some catastrophic failures of some chemicals to control this pest. During this time greenhouse growers used many non-registered and registered products and they all showed whitefly resistance. One of which was not overly effective is methomyl. Whitefly it is agreed is one of the biggest problems facing greenhouse growers.

The 10 day period for methomyl does appear to be excessive but has been in existence for some time. The present approved label (P1786 Vydate L, 20/12/2010) has no non-contact period warning on the label, and no greenhouse crop registration. The proposed 8 day period for oxamyl when used in greenhouses does appear to be excessive, based on grower experience.

It is disappointing to see that the importer and distributor of oxamyl, DuPont NZ, is not prepared to locally support their product Vydate L, when the US DuPont website states clearly that Vydate L can be applied "as a foliar spray at planting or via chemigation"⁹.

Someone at the EPA needs to talk to the chemical manufacturers about responsible product stewardship in the NZ market.

⁶ <http://www.biobees.co.nz/biology.html>

⁷ Natupol Bumble bee hives - <http://www.koppert.com/products/pollination/products-pollination/detail/natupol-beehive/>

⁸ Email from Roelf Schreuder to Nikki Johnson, 10/2/1015 – See Appendix 1.

⁹ <http://www.dupont.com/products-and-services/crop-protection/vegetable-protection/products/vydate-l.html>

Major exporters of greenhouse crops, often do their own pesticide residue testing prior to shipment as a precautionary measure, especially for the Japanese and US markets where every shipment is sampled and tested on arrival.

Note all Zespri crops are tested for pesticide residues prior to export.

Due to the failure of the pesticide manufacturers not wishing to service minor crop markets in NZ, the major export greenhouse growers have to use unregistered pesticides for pest control, so testing their own crops for residues means that they have assumed a management with monitoring role.

8. Reference 7.3 the Market Access Solutionz/Hort NZ submission

The NBA agrees with the submitters that strawberries are not normally pollinated by bees and we have no disagreement with their comments.

9. Reference 8 the Market Access Solutionz/Hort NZ submission

The NBA's position is that Section 49 of the Hazardous Substances (Classes 6, 8 & 9 Controls) regulations 2001, is an excellent tool for managing systemic insecticides that present a long term risk to honeybees. It is unique but it enables the EPA to introduce non-contact periods for pollinators and benefice insects. The reason is that in most instances honeybees being used for crop pollination have been introduced to the area in cooperation with the grower and the beekeeper and this should be a win win partnership.

The submitters have used the 2 kilometre radius from the hive, but experience shows that this is not substantiated in NZ. When MAF first introduced Tutin area controls, they initially used a 3 km radius from the hive, which had to be significantly free of Tutu plants¹⁰. Local research into foraging distance of honey bees from hives showed bees were travelling up to 5km from the hive, so the 2010 Food (Tutin Honey Standard) 2010, was changed to read "the predictable range of bee foraging from the geographical location" of the apiary¹¹. Bees will forage for significant distance from the hive and that distance is dependent on available pollen and nectar sources. In some areas this will be extremely difficult to just notify beekeepers, let alone expect them to move all their hives.

The 2 km distance is not applicable to NZ and the EPA should not repeat the same mistake made by MAF with respect to Tutin in honey Food Standards.

The 2 km distance is not acceptable to the NBA whereas the non-contact period is measurable and specific to the crop being treated with the pesticide.

The NBA considers that the submitters have not fully assessed if the suggested method of control is practical. This method is not as simple as it looks on paper.

Has the grower the ability to identify all apiary sites within a (say) 2km foraging range?

The national list of apiary sites which is held for the National Pest Management Strategy for American Foulbrood is not for use for other means – the Biosecurity Act 1993

¹⁰ Section 13, Food(Tutin in honey) Standard 2008 -

http://www.foodsafety.govt.nz/elibrary/industry/Food_Tutin-Sets_Maximum.pdf

¹¹ Section 10 Food (Tutin in honey) Standard 2010. <http://www.foodsafety.govt.nz/elibrary/industry/tutin-honey-standard-2010.pdf>

Will the grower have liability if he fails to identify an apiary site and does not contact the beekeeper, and these bees die due to pesticide poisoning within the 2km radius?
 Where would the beekeeper or grower put the hives and would they be returned and placed in the correct location after the spray operation?
 Would the beekeeper be able to claim for the losses associated with a 'business interruption' of the beehives?
 Would the surrounding landowners be comfortable with the possibility of having no bees on their crop which is requiring pollination?

In the small seed growing area around Ashburton, brassica seed crops are a significant crop and honey bees are used for pollination of these crops. Within a 2 km radius of any crop there are a significant number of apiaries on different landowner's properties. The non-contact period for acephate has applied to these crops as well, with no complaint of possible business curtailment.

NZ has a fundamental weakness in that MPI or the EPA do not monitor pesticide use at all. Until we know how much pesticide is used and what types we are using and have a reporting and investigation system for all pesticide incidents including bee poisoning, we cannot forecast likely outcomes, only guess them.

EPA Decision Making Committees mainly use overseas data, not necessarily applicable to NZ, whereas they should be seeking NZ data and monitoring environmental exposures on an ongoing basis. Without good data we cannot measure performance of expected outcomes.

The submitters plan looks suspiciously like the US EPA mandated labelling recommendations for neonicotinoid pesticides introduced in August 2014¹². The label recommendation to remove hives is because USA have this provision. The NBA supports US beekeepers who are not happy with this methodology for protecting pollinators. This document is not appropriate to discuss the US EPA's actions.

SUMMARY

- a) There is no evidence given by the submitters that these crop growers will cease business due to these controls.
- b) It is acknowledged that some growers are having significant pest control issues, pesticide resistant whitefly is a major problem in NZ greenhouses. Likewise beekeepers are facing problems with Varroa resistant pesticides as well.
- c) Beekeepers and growers are in existing long term partnerships with respect to supplying pollination services. It is in both their interests to protect their pollinators.
- d) It is disappointing to see that the submitters have supported the use of non-registered crop applications in NZ. Without appropriate enforcement from our regulatory agencies this will continue to grow in our horticultural industry. There is a major enforcement gap in NZ which is not effective in ensuring our food growing industry is following GAP.

¹² <http://www2.epa.gov/sites/production/files/2013-11/documents/bee-label-info-ltr.pdf>

- e) The EPA has failed the NZ Environment by not monitoring pesticide use and following up non-approved uses for hazardous substances. Oxamyl is approved as a foliar spray, but to date the EPA has not considered the use of this hazardous substance in irrigation water, chemigation or fertigation systems. Change of use and risks can trigger a reassessment by the EPA – but who is responsible for this process; the grower who uses the product in a new methodology, the chemical distributor increasing sales by using ‘market creep’ or the owner of the product to notify the EPA?
Beekeepers are also in the same position with the use of vaporisers to control Varroa with oxalic acid – non ACVM registered pesticide and a process of application, oxalic acid vapours, not approved by the EPA.
- f) The suggested 2 km radius for exclusion of bees is flawed and MAF’s experience with controlling Tutin poison in honey clearly suggests we should not repeat this mistake again.
- g) The use of non-contact periods from spraying to contact with foraging bees is an excellent tool for protection of bees. The submitters have not introduced any new ideas to managing the conflict between pollinators and pesticides that is measurable and can be monitored.
- h) The NBA Technical Committee is happy to meet with the submitters to discuss the issues they have raised.

The NBA Technical Committee thanks you and your Decision Committee for the opportunity to express our comments about the submission made with respect to APP202142

NBA Technical Committee

Roger Bray

Barry Foster

Don MacLeod

John McLean

Appendix 1

----- Forwarded Message -----

Subject:FW: Changes to oxamyl and methomyl - bees

Date: Tue, 10 Feb 2015 18:46:45 +1300

From: Roelf Schreuder <roelf@nzg.co.nz>

To: Don Macleod <macleod2@xtra.co.nz>

FYI,

You can speak on my behalf ;-)

Kind Regards,

Roelf Schreuder

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E; roelf@nzg.co.nz

From: Roelf Schreuder [mailto:roelf@nzg.co.nz]

Sent: Tuesday, 10 February 2015 6:46 p.m.

To: 'Nikki Johnson'

Subject: RE: Changes to oxamyl and methomyl - bees

Hi Nikki,

I'm in Holland at the moment and hence am not able to attend the meeting.

Oxamyl is safe for bees when used in capsicums as oxamyl is only used at the start of the crop when there are no flowers, also no bees are used and actual not wanted as fruit gets too big. Bees come in at the end of the season but that's in s stage when no oxamyl is used.

Methomyl is not used in capsicums at all as far as I know and also oxamyl is hardly used nowadays. We are not using it as does Southern Paprika as I far as I'm aware.

For tomatoes the situation is similar, methomyl is hardly been used as it doesn't work against whitefly, we tried is this year again but no effect at all.

Oxamyl, is only used at the start of the crop, there will be flowers here but this application has no effect on bumble bees, risk is that the bumbles can drink drain water which will kill them.

But like in capsicums the use of oxamyl is very limited as there are better products.

Kind Regards,

Roelf Schreuder

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