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From: [redacted]
To: Reassessments
Subject: Reassessments - For HiCane Submisson
Date: Thursday, 16 December 2021 5:12:52 pm
Attachments: HiCane_Reassessment_Submisson_Nigel George_16Dec2021.pdf

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Dear EPA

Please find my HiCane submisson for the HiCane Reassessment.

Would you email me back so I know you have received my submisson.

Regards
Nigel George
[redacted]

Submission guidance template

Submissions can be posted, emailed or you can fill in the online form on the EPA website

reassessments@epa.govt.nz

Reassessments
Environmental Protection Authority
Private Bag 63002
Waterloo Quay
Wellington 6140

Complete the online response form

Your name	Nigel George
Address	[redacted]
Email	[redacted]
Phone	[redacted]

I may be available to speak about my submission at the hearing

I do not support the EPA recommendation to ban hydrogen cyanamide (hicane) with a five year phase out period

My orchard is located in the Western Bay of Plenty region (Katikati). I own/manage 4 hectares of green/gold kiwifruit. I have been growing kiwifruit since 2016 and have been using hicane since 2016. I use hicane on my green/gold crops. I spray the hicane on my own orchard. As far as I am aware, I have had no medical implications from using hicane.

The following systems are used on my orchard to spray hicane. I transfer the undiluted Hicane product by tipping the 20 litre containers directly into the sprayer fill hole. When required I will use measuring jugs to measure smaller amounts. I use the appropriate PPE, spray overall/suit (chemical resistant), gloves, cap, eyewear and respirator (covering nose and mouth) to reduce any risk of my body coming into contact with the undiluted product. I am aware the product is most dangerous in its undiluted state so take interaction with this product seriously.

Equipment worn during spraying HiCane is chemical resistant overalls, spray helmet and piped filter air and gloves.

These are the Health & Safety measures taken on my orchard to protect worker exposure and minimise risks to the environment and to bystanders on my orchard.

During HiCane spraying I will plan my application around weather and wind events to maximise application success and minimize product drift/wastage. I pay a lot of money for this product and would prefer it to be applied where it will do the most benefit, rather than

drifting to another property. I believe this is one of the benefits of an owner operator applying the HiCane product.

I have shelter belts which assist in the reduction of spray drift traveling outside of the property. The shelter belts are usually trimmed after Hicane application to assist in any drift reduction should it get that far.

As per standard practise, Air Induction (AI) nozzles, drift stop chemical, shelter belts and application on low wind day are all used to reduce the risk of any spray drift. In addition the sprayer is calibrated on a regular basis.

There are no workers on the orchard while Hicane is being sprayed. Pets are located inside the house during the spraying of HiCane.

The sprayer vehicle makes a lot of noise and air, so people, pets and wildlife stay well away from the spray vehicle. Spray signs are placed at entry/exit points to alert people to spraying taking place. My front gate is closed to stop anyone driving into the property.

On my green kiwifruit orchard, the orchard front is open to a quiet country road. I will typically spray this property when there are light winds blowing away from the road way or at night when there is less people/vehicles are around. I use a spotter (person in vehicle) on the road side to make me aware if traffic or people are near.

The value/benefit to my orchard of using hicane is:

While I have never not used Hicane I believe a large reduction in production and revenue/profit is very real risk associated with a HiCane ban.

Below as a comparison an organic orchard (which does not use Hicane) vs a conventional orchard which does use Hicane

Using Zespri **average** (there will be orchards above and below these numbers) 1 x hectare production/revenue numbers.

Green (HW) Kiwifruit:

A green organic orchard, produce 6963 trays vs a conventional green orchard produces 11,907 trays. A difference of 4943 trays or 41.5%.

In revenues derived for these two orchards, on average the organic orchard revenue $66,434 vs conventional orchard $75,490. However, the conventional orchard would not achieve the organic premium so the revenue would be $44,150. A difference in revenue of $31,340 or a 41.5% reduction. Average production costs of approx. $42,000 (does not include rates, water, insurance, mortgage, etc), giving a profit of $2,150, making the green unviable to grow.

Also bear in mind, the organic premium will be lost/reduced as a number of conventional orchards would probably convert to organic, over supply of this product with cause a drop in the organic returns also harming organic growers.

Gold (GA) Kiwifruit:

An average gold organic orchard, produces 11,418 trays vs an average conventional gold orchard produces 15,322 trays. A difference of 3,903 trays or 34.2%.

In revenues derived for these two orchards, on average the organic orchard will produce $139,646 vs conventional orchard $169,3030. However, the conventional would not achieve the organic premium so the revenue would be $126,172. A difference of $43,130 or a 25.5% reduction. Average production costs are approx. $52,000 (does not include rates, water, insurance, mortgage, etc), giving a profit of $52,172.

If Hicane use is band, conventional orchards would show these reductions, and while an orchard could convert to organic and receive a premium, because of Supply and Demand dynamics, the oversupply of organic fruit, I believe the organic fruit would reduce in demand/returns, thus also affecting the organics orchard business model.

If hicane is banned, this is what it would mean for me:

As per the above numbers, if Hicane were banned it would mean a large reduction in my income/profit. I estimated it would be a reduction in excess $150,000. This will be less money I will be able to spend in my community and less taxes I will be paying to government.

I believe it will push my orcharding operation to become unviable. I believe it will reduce the value of my property. These two impacts will also have an impact on my meatal health.

For my community there will be an even larger impact as it will reduce the number of people required in our industry and the amount of money spent in our community.

Bird activity during hicane season on my orchard is minimal. At this time of the year the kiwifruit vines have been pruned back ready for the new season growth.

Usually there are no birds near my kiwifruit vines as there is nothing to feed on and there is nowhere for them to nest, the birds do not nest in the open and are not nesting at this time of the year. At this time of the year (winter) there is minimal grass on the ground. I do not see birds feeding on the ground beneath the kiwifruit vines. What has been on the ground (kiwifruit pruning's) are usually mulched.

If birds are near by when hicane is being applied, the sound of the sprayer fan/tractor engine scares them off.

I have not observed deceased birds in, around or near my kiwifruit blocks during or after hicane application event.

Other information. I have avocado trees that boarder with my gold kiwifruit blocks, there would be 2 to 5 metre gap between these blocks. Every year the interface of the avocado tree leaves gets "burnt off" with the hicane application. While a layer of avocado leaves dies off, in a very short period of time a new layer of leaves has evolved. There does not appear to be any long term damage to these avocado trees.

Over the 5 years I have owned this property I have not seen any negative impact on these trees or any wildlife.

As an owner operator I can pick and chose when I apply HiCane. I usually pick the most suitable time to apply in regards to product drying time, time of the day, wind conditions, weather conditions, etc.

As an owner/operator I believe my HiCane practises are good and suitable in my environment.

From my basic research I believe an 80kg person would have to consume 400 mls of the diluted product (spray mixture, 6% HiCane mix) for it to be toxic to a person. To consume 400 mls from an applied spray would be very difficult to capture and swallow.

USA government website, National Library of Medicine listed this article below on Hicane use in New Zealand. Jan 2009.

https://pubmed.ncbi.nlm.nih.gov/18951270/

"The adverse effects of hydrogen cyanamide on human health: an evaluation of inquiries to the New Zealand National Poisons Centre"

"Conclusions: Based on the calls received by the NZNPC, acute exposure to hydrogen cyanamide in the workplace or acute exposure to those living within the vicinity of its use may not pose a significant immediate threat to human health."

Also

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3162724/

"DORMEX®-hydrogen cyanamide poisoning" Jul-Sep 2011

"Abstract

Case reports of acute and chronic exposure to hydrogen cyanamide (DORMEX®) have been reported but mainly as a result of occupational or accidental exposure and without any mortality."

I could not find any articles where HiCane for Kiwifruit use is damaging to the wildlife and environment.

HiCane does not appear to be having a major/minor impacts on our environment compared to many other harmful sources in our environment. Why does the EPA choose to focus on HiCane when there are many other deadly sources they could focus on?

Thank you for reading my submission.

Regards

Nigel George