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Consumer Product Safety

Evaluation of Pesticide Incident Report 2010-4374

Background

Pest control products are registered by Health Canada's Pest Management Regulatory Agency (PMRA) for use only if there is reasonable certainty that no harm to human health or the environment will result from exposure to, or use of, the product as directed on the label. The PMRA collects incident reporting data under the authority of the *Pest Control Products Act*. If a pesticide manufacturer receives information about an incident involving one of their products, they are required by law to submit that information to the PMRA. Members of the public may also submit information about an incident directly to Health Canada. It is important to note that the information presented in incident reports reflects the observations and opinion of the person reporting it, and does not include any assessment by Health Canada, nor does it confirm an association between the pesticide and the effects reported.

Health Canada considers the reported information to determine if there are potential health or environmental risks associated with a pesticide and, if necessary, takes corrective action. Such action could range from minor label changes to discontinuation of the product.

Incident Report 2010-4374

On May 5, 2009, a bee keeper observed that more than 200 bee colonies collapsed in Ste-Martine, an agricultural area in the Montérégie region of Québec, which is located within the major corn growing regions of Canada. According to the incident report, the bee keeper stated that a nearby field was sown with corn seeds 24 hours prior to the incident and that "it is highly likely that the seeds were treated with clothianidin".

Dead bees from the site were collected by the bee keeper and analyzed by the Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec (MAPAQ) using a multiresidue method that can detect approximately 200 different pesticides. Residues of clothianidin, desethyl atrazine, atrazine and coumaphos were detected. For comparison purposes, bees from non-affected colonies located in a different area were also collected for analysis. Residues of atrazine and coumaphos were found in these control bees.

In accordance with the *Incident Reporting Regulations* classification system, this incident was classified as Environment Major. This incident report is posted on the PMRA electronic [Public Registry](#) on the Health Canada website.

Health Canada Evaluation

If used according to label directions, atrazine (registered herbicide for use in corn) and coumaphos (registered for use in bee hives to control varroa mites) are not known to be harmful to bees. Clothianidin, on the other hand, is highly toxic to bees through oral or contact exposure.

Clothianidin is conditionally registered in Canada for use as a seed treatment, foliar spray and in-furrow applications to control insects. Clothianidin is a systemic pesticide, which means that they are taken up by the plant's leaves or roots and transported throughout the plant. Possible exposure to bees could occur from contact or oral exposure to drift from foliar application, dust-off from treated seeds at planting, and oral uptake of residues that may be found in nectar, pollen and guttation droplets.

Health Canada Conclusion

The PMRA concluded that it is **highly probable** that exposure to clothianidin caused the bee mortality in Ste-Martine. Even though it is not clear how the bees were exposed to clothianidin in this incident, this conclusion is supported by the fact that residues of clothianidin were found in dead bees, clothianidin is known to be highly toxic to bees and that clothianidin was not found in control bees which were collected from a healthy hive in another location.

Atrazine and coumaphos are not thought to have contributed significantly to the bee mortality observed in this incident, as these are not known to be hazardous to bees. In addition, these compounds were also found in control bees collected from a healthy hive. Therefore, it is concluded that it is **unlikely** that atrazine and coumaphos contributed to the bee mortality.

The causality of this incident was assessed based on evaluated information present at the time of the review. The PMRA has concluded that no additional regulatory action is required by Health Canada at this time. Consideration was given to the fact that clothianidin is conditionally registered and that this incident would be considered during the conversion to full registration, along with other requested data. It should be noted that any additional information regarding this incident that is provided to the PMRA will be taken into consideration and may change this conclusion.

More information about the [Pesticide Incident Reporting Program](#) is available on Health Canada's website. Should you require further information please contact the [Pesticide Incident Reporting Program](#).

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