

## **Catching strawberry pesticide drift: Community air monitoring in Watsonville, California**

This community air monitoring project was carried out by Pesticide Action Network (PAN) in partnership with the Safe Strawberry Coalition and Californians for Pesticide Reform (CPR) in a strawberry-growing region of central California. CPR is a statewide coalition of over 185 public interest groups working to protect public health and the environment from the harms of pesticides. PAN is a member of the CPR coalition and is part of an international network working to promote a just, thriving food system and replace the use of hazardous pesticides with ecologically sound alternatives via state and national-level policy.

The Drift Catcher is an air monitoring device of a design similar to California Air Resource Board's air monitoring equipment, and is used by community members who are trained and certified by a PAN scientist or organizer. The samples collected by community members are sent to an independent laboratory, and the data is then analyzed by a PAN scientist.

### ***Purpose/Expectations***

Observations of pesticide drift made by community members cannot always be confirmed by regulatory agencies—if an inspection is made hours or days after a drift incident, the evidence may no longer be present. The Drift Catcher makes it possible to collect scientific evidence of pesticide drift in areas where people live, work, and play.

The Drift Catcher data are then used by organizers and community members to engage policymakers, with the intention of spurring policy change on a local or statewide level. On the national level, PAN's Drift Catcher data has helped win regulatory recognition of volatilization drift for pesticides other than fumigants. For this project, the data were to support a call for stronger mitigation rules for the fumigant chloropicrin; rules on this pesticide were expected to be [issued](#) in early 2015 by California Department of Pesticide Regulation (DPR).

### ***Implementation***

Safe Strawberry Coalition member Justin M., a resident and special education teacher in the agricultural community of Watsonville, had frequently wondered about the health risks of living close to strawberry fields. Strawberries are a pesticide-intensive crop, and fall fumigation of strawberry fields frequently occurs prior to planting. These fields are tarped to mitigate drift risk, but drift escaping from tarps is known to occur at levels that increase health risks for residents nearby.

Justin and his family, including two young children under the age of 10, live about 350 feet from the nearest strawberry field—well outside of any regulatory agency's mandated buffer zones for fumigants. When he received notice of an upcoming fumigation with the pesticide chloropicrin, Justin reached out to CPR and PAN about his concerns. Air monitoring was proposed and Justin obtained some funds from a private donor to support the project. Approximately \$5,000 was spent, covering all costs of lab analysis, equipment, travel to Watsonville for training, and the press conference publicizing the report.

### ***Outcomes and Impacts***

In a little over one week of monitoring in November 2014, Justin documented levels of chloropicrin that were sufficient to increase cancer risk. Similar to past air monitoring data, chloropicrin in the air peaked in the first few days after application, and tapered off in the last few days of monitoring.

Though pesticide drift itself is illegal, there is no legally enforceable health standard for pesticides drifting in the air. Context for pesticide drift monitoring is thus provided based on regulatory agency target levels from California DPR and U.S. EPA, as well as government reports discussing other aspects of risk for pesticides, such as carcinogenicity. DPR scientists recently asserted that chloropicrin is carcinogenic and

assigned it a “cancer potency factor,”<sup>1</sup> so cancer risk was calculated based on the levels of chloropicrin measured in the air.

CPR and PAN publicized the findings with an [issue brief](#) released in Watsonville on Cesar Chavez Day, March 31, 2015. Justin spoke about his findings and concerns for the health of his family and community. PAN’s staff scientist who trained Justin and analyzed the data also spoke at the press conference to explain the findings. An in-depth [technical report](#) on the project and findings was submitted to California DPR. The findings were also publicized in a [PAN blog](#).

In terms of policy change, the finalized mitigation rules from California DPR did not appear to consider the data collected by PAN. However, community members finally had information that addressed some of their questions around pesticide use in their community. These data, combined with a recent California Department of Public Health report<sup>2</sup> summarizing amounts of pesticides used in agriculture-intensive counties, continue to highlight the potential health risks posed by pesticide use in communities and near schools, where vulnerable populations such as children are bearing an undue burden of exposure.

The Drift Catcher work is valuable for engaging and empowering community members. Justin continues to work on pesticide issues in his community and stays in touch with the advocacy groups involved. Finally, because so little air monitoring is conducted, the Watsonville data are a novel contribution to the science of air monitoring. California is the only state that conducts its own air monitoring.

### ***Barriers/Challenges***

Coordinating the project among multiple participants was a challenge, but is also one of the most rewarding aspects of this type of community based participatory research. Staying in communication with community members working at full-time jobs in addition to volunteering their time for air monitoring made it clear that time was the most limited and precious resource for all involved. A range of diverse stakeholders participated in the project and press conference, including a PAN scientist and media/organizing director, a CPR organizer and executive director, a state senator, community members/teachers, and a health professional.

### ***Lessons Learned***

Most Drift Catcher projects are done as part of ongoing campaign work, with a recommendation that projects be done as a piece of a 3-5 year commitment to making change in a community. The length of this commitment is so that groups can get established with the support of a larger network or coalition (such as PAN or CPR), as well as to see a potential outcome stemming from the campaign work.

One of the most unique qualities of community based participatory research with the Drift Catcher is that community members contribute their personal story of exposure and collect data at their homes. It should be noted that a scientist’s presence lends further credibility as well as providing additional support when it comes to answering technical questions about the project.

### ***Future Directions***

This project supported ongoing work on fumigant pesticides in California. The Drift Catcher will continue to be used as part of this campaign, and PAN is also assessing other community-based monitoring tools, such as community surveys and drift questionnaires that may allow communities to collect data that can also support the campaign work. Other approaches may be less expensive and allow greater flexibility for community members to shape their own surveying agenda.

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<sup>1</sup> CA DPR. *Chloropicrin Risk Characterization Document*. Medical Toxicology Branch, California Environmental Protection Agency, November 14, 2012. [http://www.cdpr.ca.gov/docs/risk/rcd/chloropicrinrisk\\_2012.pdf](http://www.cdpr.ca.gov/docs/risk/rcd/chloropicrinrisk_2012.pdf)

<sup>2</sup> California Department of Public Health. “Agricultural Pesticide Use near Public Schools in California.” California Environmental Health Tracking Program, April 2014.



**Emily Marquez**, is PAN's Staff Scientist. She is a biologist with a background in endocrine disruption and environmental toxicology in reptiles. In addition to supporting scientific research for PAN's campaigns, Emily trains community members in using PAN's Drift Catcher to monitor for pesticide drift.



From Drift Catcher training, 2015.



From Drift Catcher training, 2006.