

Pesticide Drift from Minnesota Potato Fields



Community air monitoring finds that pesticides commonly used on potato fields across Minnesota drift to neighboring homes and towns.

Air monitoring results indicate that Central Minnesota residents in potato-growing areas are exposed to chlorothalonil — a commonly used fungicide — in their air for several months at a time each summer.

Data were collected at 19 sites by members of the community trained to use Drift Catcher air monitoring instruments — provided by Pesticide Action Network (PAN) — between June 2006 and August 2009.

Potato fields cover roughly 50,000 acres of Minnesota. Fungicides are applied to a significant majority of those potato acres — 98% in 2005. Chlorothalonil, the most commonly

used fungicide, is applied to 83% of potato fields.

Chlorothalonil is classified by the Environmental Protection Agency (EPA) as a “probable” human carcinogen and “highly toxic” when inhaled. Along with cancer, other health impacts from exposure can include immunological reactions in the airways and skin, pneumonia or kidney failure.

—U.S. EPA classifies chlorothalonil as “highly toxic” when inhaled.

In addition to the harmful effects of chlorothalonil itself, residents of Central Minnesota are exposed to chlorothalonil’s breakdown products as well as other fungicides, herbicides and insecticides in the air.

The health impacts of multiple pesticide exposures have never been studied by EPA, and could potentially increase the susceptibility of these residents to illness.

EPA TAKES ANOTHER LOOK AT CHLOROTHALONIL HEALTH RISKS

Data from this community monitoring project indicate that residents of many counties are inhaling low doses of chlorothalonil during extended periods throughout summer months. Inhalation is the most likely route of exposure, and the toxicity of chemicals is highly dependent on the route of exposure. However, EPA’s current risk assessment of chlorothalonil uses data primarily from oral studies to determine potential health risks of chlorothalonil.

Further, the inhalation studies used in risk assessment of chlorothalonil are not adequate to assess potential impacts to human health from long-term, low-dose exposure to chlorothalonil.

EPA recently suggested — in the 2012 Human Health Scoping Document for the Registration Review of chlorothalonil — that the current risk assessment of chlorothalonil be changed since “using any oral endpoint may underestimate risk via the inhalation route.”



Cause for Concern: Harms to health & livelihood

Norma and Don Smith successfully raised sheep for many years near Frazee, Minnesota, until potato fields were planted across from their land in 1995. Each Saturday, while their sheep were out to pasture, pesticides were sprayed on their neighboring potato fields. The following spring, during lambing time, no lambs were born. The next year, 15 lambs died of birth defects. The rest of the Smith's flock continued dying off during the winter, until half was gone. The Smiths eventually sold their remaining sheep.

Upset by this drastic change in their ability to raise livestock, Norma called the Department of Agriculture. She was told that their loss in sheep had to be weighed

against the greater profits coming from potato production, and that nothing could be done.

In addition to livestock losses, the Smiths themselves experienced health impacts. In the early days of living near the potato fields, they would try to go indoors on spray days but still experienced headaches, sore throats and other short-term ailments.

The Smiths strongly suspect these worsening health conditions — and the harms to their flock — are linked to pesticide exposure.

Minnesotans Take Action

Norma and Don Smith are one of many families in rural Minnesota concerned about health harms related to pesticide exposure. When it became clear that state officials would not act to address their concerns, the Smiths and others formed a community group, Minnesotans for Pesticide Awareness, to determine what was affecting their health and the health of their livestock — and what could be done to address the problem.

In 2006, the group began working with Pesticide Action Network (PAN) to test the air for pesticide drift around their homes and barns. PAN staff trained the group to use Drift Catchers to capture air samples at 19 sites.

—Chlorothalonil was found in air samples from all towns near potato fields.

The air monitoring was conducted between June 2006 and August 2009 in Central Minnesota — including sites in Browerville, Frazee, Perham, Pine Point, Staples and Waubun (see map on next page). Laboratory analyses found chlorothalonil in samples from the air at all towns located near potato fields.

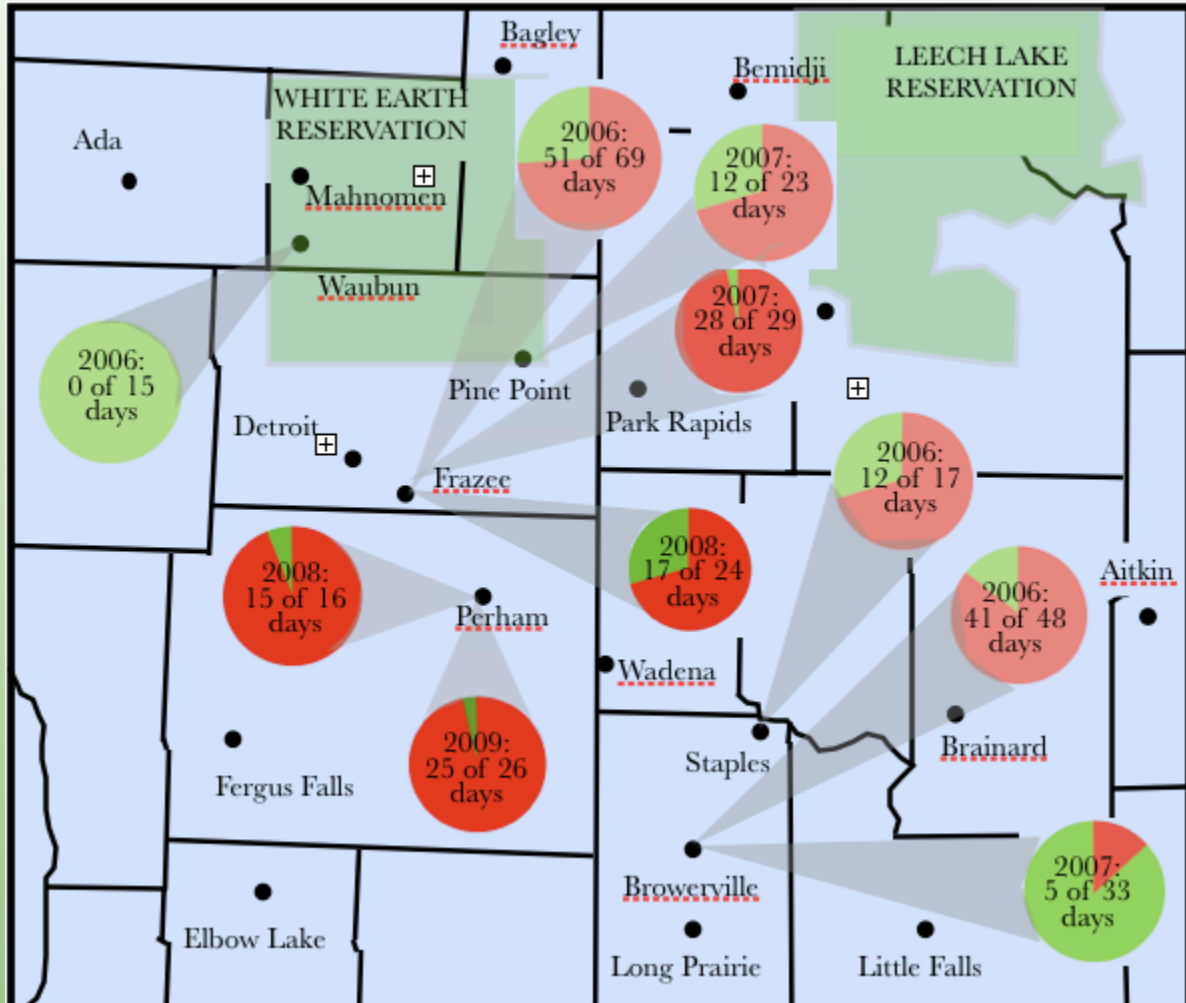


The data indicate that rural and suburban residents alike are being exposed to pesticide drift. One of the sampling sites was located in a dense suburban area of Perham. The closest potato field was almost a half-mile to the west. Despite the distance, 16 of 19 Perham samples contained detectable levels of chlorothalonil. The findings tell us that it is not just families living adjacent to fields who are exposed to these pesticides.

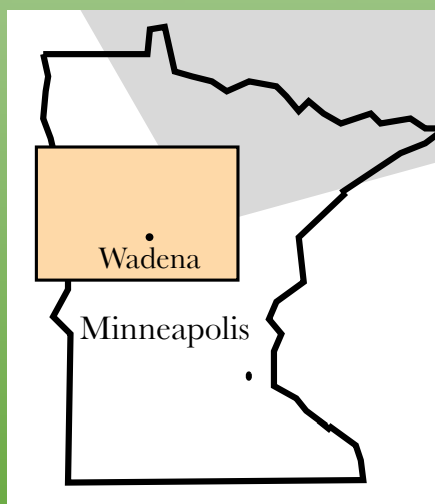
The Drift Catcher is modeled after air monitoring equipment used by state and federal officials. Data gathered with Drift Catchers are being used by EPA to assess on-the-ground exposure to pesticides.

Pesticides Drift from Potato Fields in Minnesota

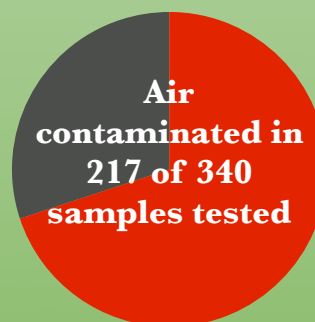
Areas of chlorothalonil detection, a fungicide used on potatoes,
at 19 sites across 6 towns from 2006-2009



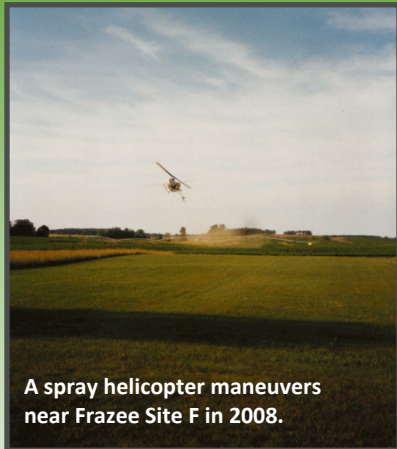
Cones point to approximate sampling locations



Pooling the data from all 19 sites, chlorothalonil was detected in 64% of the samples.



Health Harms: Residents speak out



A spray helicopter maneuvers near Frazee Site F in 2008.

Carol lives in Park Rapids and is a member of Minnesotans for Pesticide Awareness. This is her story:

Living near potato fields, I have frequently been exposed to pesticide drift in the last 15 years or so. One type of pesticide — chlorothalonil — wipes me out so that I can barely move for days. I have to struggle to breathe.

During the summer, chlorothalonil is sprayed every five days near my home and it doesn't stay on the ground. It blows up from the potato fields close to me and sometimes from farther south. At these times, I get up at 5 am every day and listen for planes or helicopters every 10-15 minutes so I can close my windows and get my dog and myself inside to avoid the worst of the drift.

*With fans running, I cannot hear the planes or choppers coming. **It's when I start gasping for air or have other symptoms that I check and realize my house is full of the drift.** This usually only happens once a year, but I never know when to expect it. And it usually takes me a week to start feeling better, after I've made significant progress on getting all exposed fabrics washed, all dishes sitting out washed, all surfaces wiped off.*

Potatoes without Pesticide Drift



Potato production is an important piece of the agricultural economy in Minnesota. With cooperation from farmers and government agencies, pesticide exposure can be reduced without negatively impacting potato growers. One model for this shift is being demonstrated by the Northwest Coalition for Alternatives to Pesticides (NCAP) and Montana Microbial Products. Their field research has demonstrated comparable quantity and quality of yields in potato fields treated with soil bacteria instead of fungicides.

We recommend EPA take the following steps to protect the interests and health of Minnesota potato farmers and communities:

- * **Conduct a careful evaluation of the inhalation toxicity of chlorothalonil** and implement control measures to reduce exposure. Factor in exposure to multiple pesticides when evaluating toxicity.

Further, we recommend the Minnesota Department of Agriculture take these steps:

- * **Encourage and support adoption of alternative potato growing practices** that do not utilize highly toxic pesticides and provide information about low-risk alternative pest control measures.
- * **When investigating pesticide drift complaints, take human health protection seriously** and enforce existing pesticide regulations.