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Iowa Farmer Today

Air quality conditions hard to predict

By Mandy Archer Jul 21, 2024

Jake Romero, Cal State firefighter, works to mitigate the spread of the Donnell Fire, Stanislaus National Forest, California. Wildfire research has yet to be fully understood, especially in the Midwest.

Photo courtesy USDA Forest Service

After last summer, we have not seen the same evident wildfire smoke that affected Iowa and surrounding states. It can start to feel like our troubles are in the past or that they belong to the Northwest and Canada alone.

It is reasonable to assume that wildfires are not a high-priority safety and health concern farmers face in the Midwest. Conversely, the lasting respiratory impacts of wildfires are not fully understood.

The U.S. population had an increase of 17% in anticipated ER visits for asthma during the duration of the Canadian wildfires of last summer.

I spoke with Dr. John Flunker, a researcher at the University of Washington Pacific Northwest Agricultural Safety and Health Center, about wildfire data in the Midwest, which is sparse. Flunker said most of the research surrounding the effects of wildfire smoke among farmworkers is incomplete. A good deal of it is kicking off now, and a majority is coming from the Northwest.

Though the focus is on the Northwest for now, Flunker said wildfire smoke in the Great Plains region may become a health concern in years to come as fires become larger, more frequent and less predictable.

“That’s what’s challenging about this type of research is that forecasting models are only limited to a few days out, and they’re based on existing fires,” Flunker said. “We don’t know exactly where the fires are going to be and where the wind will blow the smoke to.”

His research is in the heart of where wildfire smoke affects outdoor workers, and one of his three pilot projects tracks the health effects on fruit tree workers, specifically those working on H2A visas. Flunker’s projects are just kicking off, so results are to come.

These H2A fruit tree workers are younger than our aging farmer population in the Midwest (excluding our H2A workers). This distinction is salient as older individuals, children and those with preexisting respiratory conditions may be affected by wildfire smoke in new, unresearched ways.

Flunker's research and related research in the Northwest is transferable to Iowans though. His prevention strategies and work adjustments could apply here when our air quality is unsafe.

Understanding AQI or Air Quality Index reading is crucial to better preparing workers for smoky work days. The Air Quality Index contains the levels of pollution in the air and its associated health risks. The index ranges from 0 to 500; zero means "good" air quality, and 500 means "very unhealthy."

Visit **tinyurl.com/2bur9pvv** for a basic AQI overview. Then, once you understand AQI, go to **fire.airnow.gov/** to track smoke.

If you have a smartphone, the AQI is available within some weather apps. Otherwise, download the AirNow app from the EPA at **tinyurl.com/5ytz8xvf**.

Check the air quality each day before work or preferably during the wildfire season of late May into June until October. Listen to your local news station and watch for signs of smoke irritation.

Signs include eye and throat irritation, sore throat and respiratory symptoms like wheezing or coughing. If you or someone you work with struggles with a heart or respiratory condition, look for worsening symptoms.

Consider moving outdoor tasks to another day if air quality is above 50, outside the range of little to no risk. For AQI, red (151 to 200 AQI value) is typically where the air becomes unhealthy for the population.

Reflect on who makes up your workforce, their needs and if they are part of a sensitive group.

Farmers are business owners of their operation and must look out for themselves and their workers. In air quality research, many rural areas tend to lack sensors testing air quality in smaller towns. The good news is that these sensors can be reasonably cheap at around $200-$300. Adding your own sensor is the best way to ensure accurate air quality readings.

Ultimately, if you see smoke or feel eye, throat or lung irritation due to smoke, consider using an N95 respirator and look for options to reschedule work to another day or a different time with lower smoke levels.

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