Study connects large-scale dairies, feedlots to increased air

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A recent scientific study that took place in the Yakima Valley has linked large-scale dairies and animal feed lots to air pollution, providing what environmentalists hope will be a useful tool for enforcing air-quality regulations on such operations.

Conducted by the Johns Hopkins Bloomberg School of Public Health, the study found elevated amounts of ammonia, cow allergens and particulate matter in the air of homes within a quarter mile of large dairy operations in the Lower Yakima Valley.

The peer-reviewed study was published in August by Environmental Health, a public health journal.

Over five days during the summer of 2008, air was monitored in 40 homes -- 20 within a quarter mile of a dairy or feedlot facility and 20 three miles or more away from such operations.

"What our study means, it demonstrates that you can measure a difference in air pollutants and there (could be) an effect on those living close to them," said Johns Hopkins researcher D'Ann Williams, the principal researcher.

While the correlation between large animal operations and air quality might seem obvious, local environmentalists have struggled to make the link stand up in court.

Complaints about dust, odor and particulate matter from dairies and feedlots have grown along with the scale and concentration of those facilities. In the Yakima Valley, there are 67 dairies and seven feedlots for a combined total of more than 115,900 animals, according to the state Department of Agriculture.

The Johns Hopkins study comes at a time when Republican members of Congress are pushing a bill that would prevent the federal Environmental Protection Agency and local authorities from regulating nuisance dust from farms. The main sponsor is Rep. Kristi Noem, R-South Dakota.

Williams said Congress is acting prematurely because the health effects from exposure to nuisance dust have yet to be adequately studied.

"Certainly you can't just say that there are no effects until health-effects studies are done," she said.

The study could bolster the legal arguments of environmentalists, who have won battles in the past over groundwater contamination but have fallen short when it comes to alleged violations of the federal Clean Air Act.

"This study is one among a growing body of evidence that air pollution from large dairies and other concentrated animal feeding operations pose as much or even more health risks than the issues of both surface and groundwater," said attorney Charlie Tebbutt of Eugene, Ore., who for decades has represented the local environmental group Community Association for Restoration of the Environment, known as CARE.

But dairy representatives are already questioning the study. Jay Gordon, executive director of the Washington State Dairy Federation, points to a review by Washington State University professors who say the Johns Hopkins study is incomplete.

"We obviously have some concerns now that we've looked at the review," he said.

Joe Harrison, Professor and Nutrient Management Specialist at the WSU Puyallup Research and Extension Center, said while he agrees with the study's conclusions, it doesn't include information important to accurate measurements, such as wind and weather patterns.

Harrison also said it wasn't clear in the report whether air samples were taken for five solid days at all the homes or taken at different homes over a total of five days.

"The paper didn't address wind and how it affected the homes and their proximity to the operations," he said. "What was the duration of sampling? Was it one day or was it five days? So did they, like, put containers out at noon one day and pick them up at noon the next day? And another thing, what was the weather pattern on the day they did this?"

He also notes that the elevated amounts of ammonia and particulate matter found were still well below thresholds considered safe, and that a safe threshold for cow allergens has yet to be established.

"The concentrations that they were identifying, they were quite a bit lower (than safe thresholds)," he said.

But Williams said the report makes it clear that air was monitored in homes for five days straight. What's more, she said wind wasn't a factor in this study.

"Wind is important when you are trying to say where things are coming from, and that's not what we were looking at," she said.

Although the three agents studied didn't rise to unsafe levels when measured individually, Williams said they can be more hazardous in tandem.

"But when you get them all together, you can have synergistic effects," she said. "A point that we try to make is that current standards as they exist do not consider the

composition of the particles as they exist and the composition can be very critical when you look at health risks."

She said although there are more agents to look at, only a few were sampled. She said the findings support the need for further study.

"We hope to do a health impact study around large-scale animal operations -- cows, swine -- where communities have complained," she said. "No one has really evaluated them adequately."

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