

OSU Grain Dust Study

We are looking for on-farm grain storage bins that still contain old crop corn or soybeans - Can you help locate any bins in your area that are being unloaded - we ideally need 10 more bins that are in "unloading and sweep-out phase."

Read More About our Project:

The Ag Safety and Health program has a grain dust research study to quantify the amount of dust present inside on-farm storage bins during load-out periods, and specifically when workers are using sweep augers and actively cleaning the bin.

As many farmers know, grain dust contains more than meets the eye. Bins often contain additional plant fodder, insect parts and other microorganisms. Temperature and humidity fluctuations during storage can contribute to seed sprouting and mold growth. This array of biological contaminants has been linked to health conditions (like asthma, chronic bronchitis, and other grain dust illnesses).

We are seeking farms that will allow dust samples to be collected from their bins during the load out periods. Here is what is involved:

1. A graduate student is available to conduct sampling on week days/nights and weekends. We will work around your work schedule, knowing that bin emptying is not always scheduled for a precise time of day. Typically we just need half day notice to get there - the night before the work, or the morning of an afternoon job.
2. If the farm has multiple bins, with different stored grains, we can sample any of them while on the scene.
3. No preparation is needed for the sampling. The student does not interfere with the work, or disturb the process. He will arrive when he is scheduled with his dust tracker equipment. He will collect dust samples with this equipment inside of the bin as the grain is unloaded.
4. He will work the typical shift of that job - we understand that this may range from 20 minutes to several hours. We understand there may be downtime during the sampling period (an auger stops, a lunch break happens, another task interrupts the sampling). The student will only take measurements when the unloading process is occurring.
5. The farm will receive a dust analysis report approximately 1 week later. In the report, the results will show the amount of Total Dust and Respirable Dust present in the environment. We will interpret the results as needed. The results are not shared with anyone else - no other person or agency will receive the farm results.
6. There is no fee for this service. There are no incentives to participate. In other words, the benefit is contributing to the science and understanding of dust level exposure while unloading grain on the farm. Our program will provide an N-95 respirator for all workers - upon request at the scene.

While on-site, the student can tell the farmer about the grain bin simulator that was built specifically for this project and is being tested in our lab. We hope to replicate the dust conditions within a simulator to the real-world environment on the farm. This research will help us understand the types of respiratory protection needed, as well as other ways to eliminate (at least reduce) the dust in the environment.

To participate in the grain sampling study, or for additional information, please contact me directly. Thank you for your interest in Ag Safety and HEALTH at the grain bins.

~ Dee Jepsen

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