

Researchers study cotton gin dust emissions

July 5 2011

The last of seven cotton gins is being tested this year as the fieldwork for a major 4-year cotton gin dust sampling project draws to a close. U.S. Department of Agriculture (USDA) scientists organized the project to intensively sample emissions from seven cotton gins across the Cotton Belt.

Mike Buser, formerly with the Agricultural Research Service (ARS) [Cotton](#) Production and Processing Research Unit in Lubbock, Texas, and now with Oklahoma State University at Stillwater, began the project with fellow ARS agricultural engineers Derek Whitelock at the agency's Southwestern Cotton Ginning Research Laboratory in Mesilla Park, N.M., and Clif Boykin at the agency's Cotton Ginning Research Unit in Stoneville, Miss. ARS is USDA's principal intramural scientific research agency.

While at Lubbock, Buser had found that U.S. [Environmental Protection Agency](#) (EPA) computer models and dust samplers may overestimate both the distance gin dust travels and the concentrations of the smallest particles. Buser continues this research as an integral part of the "Characterization of Cotton Gin Particulate Matter Emission Project."

In 2006, EPA lowered the limit on average Particulate Matter (PM)_{2.5} emissions over a 24-hour period from 65 to 35 micrograms per cubic meter. This comes from a growing concern that the smallest dust particles pose the biggest [health threat](#) because they are small enough to penetrate deeply into peoples' lungs. PM_{2.5} refers to [dust particles](#) less than 2.5 microns in diameter, less than one-thirtieth the thickness of a

human hair.

As states implement required plans to achieve federal standards—or even stricter ones—they face the problem of a scarcity, or, in some cases, a complete lack of data on how much PM2.5 industries emit.

The cotton industry and EPA and state regulators helped plan the project.

The exhaust from each gin's dust control devices is sampled, and outside dust is measured by 126 ambient air samplers surrounding each gin.

To date, sampled gins include one in New Mexico, two in Texas, two in California, and one in Missouri; the last is in North Carolina. It will take another year, through 2012, to analyze all the data.

Provided by United States Department of Agriculture

Citation: Researchers study cotton gin dust emissions (2011, July 5) retrieved 3 May 2024 from <https://phys.org/news/2011-07-cotton-gin-emissions.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.