

ETC Action Team Progress Report

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Name of Action Team: Pesticide Spray Drift Reduction Team

Team Leader(s):

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Current Team Members:

All listed above.

Environmental Problem:

Each year hundreds of millions of pounds of pesticides are applied to many thousands of fields to benefit crop production. From a typical pesticide spray application a small percentage of the applied spray, in form of very small droplets, will be carried by air currents ("spray drift") and deposited on sites down-wind from the intended application site (crop field). The amount of spray drift deposition generally decreases with distance from the application site. EPA expects some level of spray drift to occur with all spray applications due to current application technologies (equipment), practices, and use restrictions on pesticide product labels.

Spray drift deposition can be troubling for sensitive sites such as residential or school property, endangered species habitats, water bodies, and sensitive crops or other vegetation, depending on the amount of spray deposited and the toxicity of the pesticide. Adverse effects may result to humans and other non-target organisms and the environment, such as killing fish or other aquatic organisms, stunting plant growth, or disrupting reproduction. With the vast diversity of species' sensitivity and toxicological characteristics of pesticides, affects may occur at part per billion or less.

EPA's Office of Pesticide Program, other Federal agencies, such as USDA, state agencies, academia, and the agricultural private sector are focused on this issue and a variety of approaches to minimize spray drift from pesticide applications, as are governments and industry in other countries. One approach is to encourage or require pesticide applicators to use application equipment/technologies that can produce less spray drift. The purpose and goal of the DRT program is to identify those technologies

through a verification program, publicize the results, and provide regulatory incentives to pesticide applicators to purchase and use these technologies. Doing so will result in reducing the overall risks from pesticides to humans and the environment.

Name of ESTE or Other Priority Project:

Same as above.

Technology Challenges:

- To identify and verify the performance of pesticide spray drift reduction technologies
- Protocol development
- Identification of available and suitable testing facilities
- Program buy-in by industry that is very large, numerous manufacturers, diverse, global and concerned about potential costs
- Pesticide application technologies (equipment) are very diverse in design and purpose of use which reflects the diversity of US agriculture

Stakeholder and Partner Involvement:

- USDA/Agricultural Research Service – testing and equipment expertise
- USDA/Forest Service – modeling expertise
- National associations representing manufacturers of agricultural pesticides and other chemicals, including CropLife America and Chemical Producers and Distributors Assn.
- Pesticide commercial dealer and user associations—National Agricultural Aviators Assn, National Agricultural Retailers Assn.
- US and foreign major pesticide equipment manufacturers
- US and foreign academics who have expertise in pesticide application technologies and spray drift

FY07 Accomplishments:

- June 2007 – completion of draft testing protocol and web posting [<http://www.epa.gov/nrmrl/std/etv/pubs/600etv07021.pdf>].
- June 2007 – solicitation of vendors to offer their technologies for use EPA's beta testing of the draft protocol

FY08 Objectives:

- February 2008--Selection of technologies volunteered by their vendors to be used in EPA's testing of the draft protocol (beta testing)
- March 2008 – Selection of wind tunnels to conduct the beta tests
- August 2008 – protocol testing

Current Funding and Additional Resources Required:

ESTE funding 200k – protocol development and testing (current)
Office of the Science Advisor \$20K – protocol testing (current)
Office of Pesticide Programs \$15K – model development (current)
Chemical Producers and Distributors Association ~\$50K – protocol development (current)
CropLife America \$20K – protocol development (current)

Future funds will be needed for updating models, outreach, and expanding the protocol to include other application methods

Issues:

Issue: Availability of wind tunnel testing facilities in the US--The testing will require both high and low speed wind tunnels for testing. The availability of a high speed wind tunnel in Las Cruces New Mexico appears to be the most likely option for high-speed testing but is only recently re-opened. An alternative is USDA ARS' wind tunnel at College Station, Texas. The EPA's National Homeland Security Research Center's Aerosol Testing Facility (ATF) in RTP is the only low speed wind tunnel facility in the US known to offer climate-controlled conditions and the necessary particle sizing equipment for low-speed testing.

There is interest and similar activities by governments and industry in other countries, including certain EU countries, Canada, Australia, and New Zealand, in regulating spray drift and use of drift reduction technologies. OPP/ORD is engaged with these governments to share information. Additionally, these and other countries, through the OECD Working Group on Pesticides, are exploring ideas for expanding information sharing and collaborating with industry and international standard setting organizations, such as ISO, on spray drift regulatory and technology initiatives.

Performance Measures:

- Spray drift incidents reported to states
- Environmental pesticide concentrations (air, water, non-target media)
- Increased use of verified DRTs

Lessons Learned:

- Protocol development is costly and time consuming.
- This problem is extremely complex—technical issues of spray drift, wide diversity of application equipment and technologies, large number of industry entities and varying interests, international interests