MOBILE LAB FOR TRAINING PESTICIDE APPLICATORS

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BACKGROUND

The University of Nebraska-Lincoln West Central Research and Extension Center in North Platte, Nebraska has an established history of pesticide application research dating back to the 1970's. In recent years, a large effort was put into establishing the Pesticide Application Technology (PAT) Lab, equipped with a state-of-the-art greenhouse and wind tunnels for collecting droplet size measurements as well as conducting simulated drift studies. The lab has also generated significant data from field studies on pesticide efficacy and field drift.

The state-of-the-art Mobile Training Lab allows for national dissemination of the research being conducted at the University of Nebraska-Lincoln Pesticide Application Technology (PAT) Lab. This tool will help educate growers and applicators in a more "hands-on" approach. The Mobile Training Lab allows the PAT Lab to conduct trainings across the country on nozzle type and nozzle selection, pesticide application parameters, adjuvants and other aspects of pesticide application to ensure that applicators have the most current information available at their disposal. With increasing pressure to reduce drift, pesticide use, and resistance while increasing the sustainability and efficacy of crop production systems, there is a need to have cutting edge training to applicators.

The program covers the most important factors to consider when trying to minimize pesticide drift.

- **The importance of wind speed, wind direction, boom height, droplet size, and distance to sensitive areas**
- **Different tools for monitoring environmental conditions as well as simple things that can be done to mitigate drift incidences**
- **Tank-mixtures and how they affect droplet size as well as how droplet size can be managed for drift mitigation**
- **Nozzle types and their spray patterns (Figures 2 and 3)**
- **How to apply pesticides to maximize efficacy and delay resistance**

Figure 1. Miniature wind tunnel used to compare spray qualities for drift

Figure 2. Nozzle kit for hands-on demonstrations and education

Figure 3. High-speed videos of nozzle spray patterns

Figure 4. Sprayer cart in the mobile PAT Lab

PESTICIDE APPLICATION TECHNOLOGY MOBILE TRAINING LABORATORY

- The Mobile Lab has a dedicated truck and enclosed 24 foot trailer to move equipment from location to location as needed
- The Mobile Lab consists of a complete self-sustained set of equipment: tables, chairs, and a projector and screen with resources needed to provide the latest training on pesticide application technology
- Upon completion of the short course participants are mailed certificates
- A miniature wind tunnel to demonstrate how small droplets move off-target and how drift reduction techniques such as nozzle selection as well as pressure and orifice size can influence particle size (see Figure 1)
- A spray table equipped with lighting, pulse width modulation and other current technologies to demonstrate spray pattern distribution, calibration, nozzle selection and the potential influence of adjuvants (Figure 4), and 25 individual hands on spray tables (Figure 5)

IMPACT

The Mobile Lab is available for travel across the U.S. (Figure 6) to provide educational opportunities for pesticide applicators. It may be reserved for full-day and partial-day workshops, field day trainings, and one-on-one training at farm shows. The outcomes of these trainings are better prepared applicators and managers that can select the most appropriate application practices and techniques to reduce drift and maximize pesticide efficacy. With specific product labeling on how pesticides should be applied as well as constantly emerging technologies, coupled with new data being generated at the PAT Lab, the Mobile Lab provides a unique educational experience.

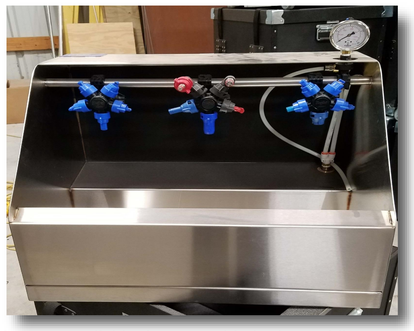

Figure 5. Individual Spray table in the mobile PAT Lab

Figure 6. 2015-16 PAT Lab Mobile applicator training locations in the last 12 months.

For more information, scan to be directed to pat.unl.edu