

Introduction

Inhalation of particulate and mist is a common entry route of pesticides into the body. In addition to modifications of work practices, inhalation exposure can be prevented by use of personal protective equipment.¹ Depending upon the agent, disposable dust respirators and cartridge/canister respirators can provide adequate respiratory protection in these situations. Both of these models require a proper fit for maximum protection. OSHA respiratory standard 1310.134 Appendix A outlines accepted fit test protocols for qualitative fit testing.

The purpose of this study was to assess the rates of compliance with OSHA requirements within the farm community.

Methods

A survey was developed to acquire self-reported data from certified pesticide applicators. Questions included knowledge of OSHA requirements; extent of quantitative fit testing in this population; alternative approaches to fit testing in these applicators; medical clearance obtained by equipment users; types of respirators used for specific tasks; and maintenance of this equipment. The survey was administered at several agricultural outreach events in upstate New York. Data was collected via interviews and individual form response.

Concerns:
"How dependable are they (cab filters)?"

"Sometimes I depend on it, other times I don't trust it."



Barriers to use:
"I'm just not concerned like I should be."

It's (using PPE) the last thing on my mind when I'm working."



Taking risks:
"I don't wear (my respirator) very often, I just watch for drift."

"When I smell it (chemical odor), I know to put on my mask."

Medical clearance:
"My doctor's family is in the fruit growing business so he asked me (about wearing a respirator)."

Results

Fit Testing

- 0/42 (0%) were professionally fit tested
- 15/42 (36%) fit test by means of user seal check
- 18/42 (43%) do not fit test

Medical Clearance

- 6/42 (14%) received medical clearance

Storage

- 6/42 (14%) store in truck/tractor cab/house
- 11/42 (26%) store in plastic bag
- 17/42 (40%) store in separate room/locker

Task	Workers (n=24)	Owners (n=18)	P-value
Wear when working	21/24 (87.5)	9/18 (50.0)	.0089
Mixing	23/24 (95.8)	8/18 (44.4)	<.0001
Filling	21/24 (87.5)	4/18 (22.2)	<.0001
Application	19/24 (79.2)	5/18 (27.8)	.0015
Clean-up	15/24 (62.5)	3/18 (16.7)	.0045

Conclusion

- Fit testing and medical clearance rarely occur
- Workers are consistently and significantly more compliant than owners
- Potentially serious exposures may be occurring for both groups during clean-up

Discussion

- Need to make services available for professional fit testing and medical clearance for applicators
- Education regarding exposures during tasks may increase awareness of hazards during tasks and need for respirator use
- While this was a small pilot study, significant differences between workers and owners exhibit the need to continue education and outreach efforts at specific segments of the population, i.e. farm-owners vs. farm workers

