



## Chemical-resistant Gloves: Views of the Users

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Keywords: PPE, gloves, pesticides

In spite of a variety of efforts to reduce occupational exposure to pesticide products, pesticide poisoning rates among farmworkers remain high (Levesque Arif, & Shen, 2012). Therefore, there continues to be a need for research on factors that affect use of chemical-resistant personal protective equipment (PPE), especially gloves. Black, Shaw, Harned and Coffman (2014) used an audience response (clicker) system during applicator training meetings in four states to collect data on applicators' glove practices and preferences. In response to a question about glove material worn most often, 9% of the respondents in one state selected "I do not know," raising questions about how well applicators handle PPE advice framed in terms of a product's materials. In response to a question about important factors in the selection of gloves, chemical resistance was the most frequent response and fit was next. However, it should be noted that the clicker system relies on choices provided by the researchers; there is no opportunity for write-in responses. An open-ended question might elicit a different set of responses.

The present study was designed as a hybrid of a paper survey with open-ended items and an audience response study with multiple choice items to restrict possible answers in some cases and to let the respondents provide answers in their own words in others. The paper survey included five questions with space for writing in any positive and negative features of gloves the applicators had been using during the previous twelve months. The clicker survey had nine additional questions including the names of 10 possible glove materials that applicators could check in response to glove samples provided by the researchers. Organizations offering pesticide applicator training sessions were contacted about the research project and asked about the possibility of being included in an upcoming seminar. Four organizations agreed to find time for the project.

A total of 319 respondents participated in the project. Responses to the question about positive glove features suggested cost was a key consideration. A new factor was "convenience of ordering and shipment" although that could be considered a component of availability.

Regarding negative features, lack of durability was the negative feature mentioned most often. Fit was another major issue with range of sizes found to be too limited. A less common but equally important observation was that the difference between one size and the next was too large.

The clicker question about identifying glove materials from samples displayed by the researchers reinforced previous concerns about applicators' confusion about materials found in protective gloves; the only material correctly identified by half or more of each group was disposable nitrile. A recommendation based on this finding is to require information about the glove material to be added to the gloves themselves. Observation of promotional material already available on the gloves suggests this could be a cost-effective solution to the identification problem.

#### References

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