DOCUMENT RESUME

ED 442 607 RC 022 494

TITLE	Preventing Agricultural Chemical Exposure: A Safety Program Manual. Participatory Education with Farmworkers in Pesticide Safety.
INSTITUTION	Wake Forest Univ., Winston-Salem, NC. Dept. of Family and Community Medicine.
SPONS AGENCY	National Inst. of Environmental Health Sciences (NIH), Washington, DC.
PUB DATE	2000-00-00
NOTE	86p.
CONTRACT	ES08739
AVAILABLE FROM	Department of Family and Community Medicine, Wake Forest University School of Medicine, Medical Center Boulevard, Winston-Salem, NC 27157-1084 ($10.00).
PUB TYPE	Guides - Classroom - Teacher (052)
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	Agricultural Laborers; *Agricultural Safety; Community Education; *Community Involvement; Health Materials; Health Promotion; Hispanic Americans; *Migrant Adult Education; Migrant Programs; *Migrant Workers; Outreach Programs; *Pesticides; Prevention
IDENTIFIERS	Latinos; North Carolina

ABSTRACT

Preventing Agricultural Chemical Exposure among North Carolina Farmworkers (PACE) is a project designed to describe farmworker pesticide exposure and to develop an educational intervention to reduce farmworker pesticide exposure. The PACE project used a community participation framework to ensure that the community played a significant role in identifying its own health problems and working toward their resolution. This manual offers a concrete plan for addressing the problem of farmworker pesticide exposure and is intended for use by anyone who wants to develop a community-based approach to offering pesticide safety instruction for migrant and seasonal farmworkers. Chapter 1 explains the importance of working with the community in developing educational programs and the general model for the pesticide safety program developed by the PACE Project. Chapter 2 focuses on the procedures for planning a successful safety program using a collaborative, participatory approach. Chapter 3 describes the specifics of the safety program in detail, including suggested instructional techniques and program outlines. The program consists of three parts, a direct safety program for farmworkers, an expanded safety program for farmworker representatives as promoters, and a follow-up program for promoters. All programs meet Environmental Protection Agency requirements for training field workers. The appendix contains English and Spanish versions of 10 fact sheets on pesticide exposure, a list of educational materials, promoter follow-up sheets, and forms for recording local resource information. A comic that presents pesticide safety issues in Spanish is also included. (Contains 30 references.) (TD)

Preventing Agricultural Chemical Exposure:

A Safety Program Manual

Participatory Education with Farmworkers in Pesticide Safety

The PACE Project

Thomas A. Arcury
Principal Investigator

Sara A. Quandt
Co-Principal Investigator

Colin K. Austin
Project Coordinator

Rosa Saavedra
Co-Investigator

Pamela Rao
Co-Investigator

Luis F. Cabrera
Co-Investigator









Preventing Agricultural Chemical Exposure:

A Safety Program Manual

Participatory Education with Farmworkers in Pesticide Safety

The PACE Project

Thomas A. Arcury
Principal Investigator

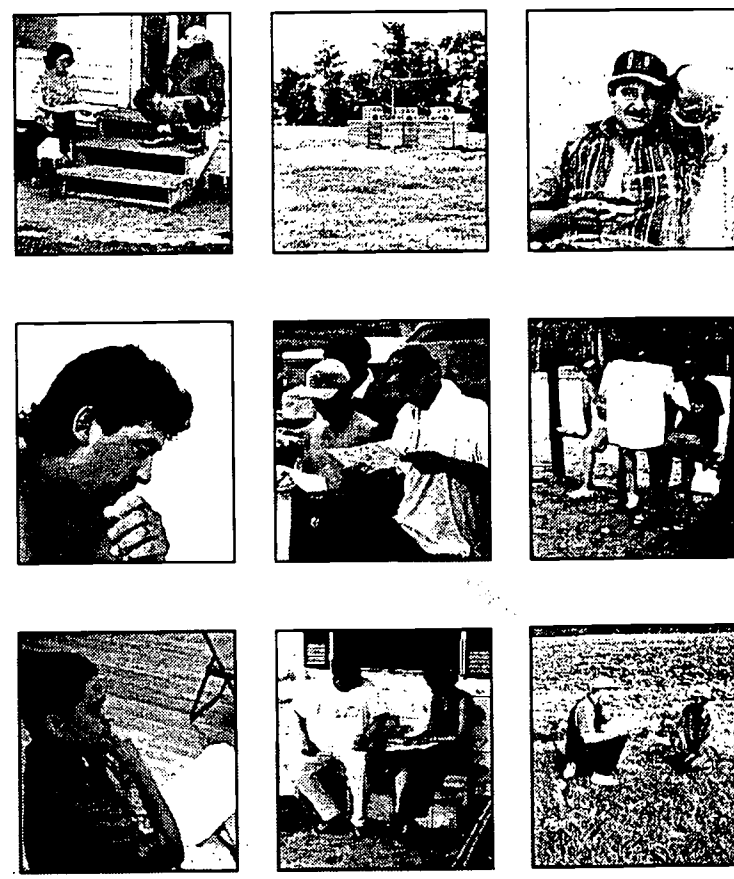
Sara A. Quandt
Co-Principal Investigator

Colin K. Austin
Project Coordinator

Rosa Saavedra
Co-Investigator

Pamela Rao
Co-Investigator

Luis F. Cabrera
Co-Investigator



Support for this publication was provided by grant ES08739 from The National Institute of Environmental Health Sciences

First Edition, 2000

Produced by the PACE Project: Preventing Agricultural Chemical Exposure Among North Carolina Farmworkers. The PACE Project is supported by grant ES08739 from the National Institute of Environmental Health Sciences.

Illustrations on pages 40, 42, 45, 51, 53, 56, 70-74, 76, and 77 by Tim Rickard. Illustrations on pages 43, 44, 46-48, 54, 55, and 57-59 by the United States Environmental Protection Agency.

Cover design by Alan Johansson.

Photographs on cover and pages 10 and 21 by Thomas A. Arcury.

Photographs on pages 14,16, and 29 by Chris Johnson.

Ordering Information

This publication can be ordered from the Department of Family and Community Medicine, Wake Forest University School of Medicine, Medical Center Boulevard, Winston-Salem, NC 27157-1084. The charge is $10.00, which includes postage and handling. Please make payment by check or money order to the "Department of Family and Community Medicine." For orders to be mailed outside the United States, remittance must be in United States dollars payable on a United States bank.

PACE: A Safety Program Manual

Contents **Page**

Preface

This manual is one product of a multi-year project designed to describe farmworker pesticide exposure, and, more importantly, to develop an educational intervention to reduce farmworker pesticide exposure. This project, *Preventing Agricultural Chemical Exposure among North Carolina Farmworkers* (PACE), is supported through a grant from the National Institute of Environmental Health Sciences' Community-Based Prevention/Intervention Research Program. Like all projects in this Program, the PACE Project uses a community participation framework to ensure that the community plays a significant role in the identification of its own health problems and in working toward their resolution. The purpose of this manual is to offer a concrete plan for addressing the problem of farmworker pesticide exposure based on the findings from the research.

Pesticide exposure

Pesticide poisoning due to acute high level exposure can lead to reactions that cause immediate illness and injury and may require medical treatment. The health impact of chronic low-level exposure is less well-known, although studies indicate that possible effects include cancer, birth defects, neurological deficits, and reproduction and fertility problems (Blair and Zahm, 1995; Moses, 1989). The potential for acute and chronic effects suggests the need for a preventive approach in the workplace (Arcury and Quandt, 1998a).

For whom is this manual intended?

This manual is intended for use by anyone who wants to develop a community-based approach for offering pesticide safety instruction for migrant and seasonal farmworkers. These individuals may be public health department health educators, community and migrant clinic outreach workers, or the staff of any type of community-based organization, including churches. The manual contains step-by-step instructions on the procedures for organizing a safety program and detailed formats for individual instructional sessions, as well as materials that can be used in a safety program.

The PACE Project

The Wake Forest University School of Medicine, in collaboration with the North Carolina Farmworkers' Project and the University of North Carolina at Chapel Hill, initiated the PACE Project, a community participation health study, to address health concerns surrounding farmworker occupational exposure to agricultural chemicals. The PACE Project is funded by a four-year grant from the National Institute of Environmental Health Sciences as part of their Community-Based Prevention/Intervention Research Projects in Environmental Health Sciences initiative. The goal of the PACE Project is to reduce agricultural chemical exposure among farmworkers. The project calls for farmworker participation in the four project components: initial data collection, intervention development and planning, evaluation, and dissemination of results.

This manual and the Safety Program it presents are based on an empirical foundation of formative research and evaluation studies. The design of the empirical work included three major phases: formative research; implementation, evaluation and revision of the pilot intervention; and implementation and evaluation of the revised intervention.

The ***formative research*** included three parts. First, we completed a critical review of existing materials that had been developed to instruct farmworkers about pesticide safety. We then conducted in-depth interviews with farmworkers, farmers, health care providers and county Cooperative Extension agents to learn each group's knowledge of and experience with farmworker pesticide exposure and the best ways to reduce farmworker pesticide exposure. Finally, we engaged the farmworker community through an advisory committee, community forums and general discussions with farmworkers to learn their experiences and needs for pesticide safety information. The information learned during this phase of the project was used to develop the pilot intervention manual.

Implementation, evaluation and revision of the pilot intervention took place during the next year of the project. First, direct instruction using the pilot intervention manual was offered to all farmworkers at each of 18 "sites." (A site is a location in which a number of farmworkers live; this can be a farm labor camp, a trailer park, an apartment building, or a single house.) Next, lay health promoters were recruited at each site to receive additional education as on-site support for other farmworkers. Evaluation of the first year's effort was based on baseline and follow-up personal interviews conducted at a 2 months' interval at the 18 intervention sites and 17 control sites. The pilot intervention manual was revised based on the results of this evaluation.

Implementation and evaluation of the revised manual included direct instruction to farmworkers at 18 sites, followed by recruitment and instruction of 45 lay health promoters at 14 of these sites. Evaluation was based on baseline and follow-up personal interviews conducted at a 2 months' interval at the 18 intervention sites and 18 control sites. This manual is the result of this second evaluation and revision, and is now available for use by anyone interested in farmworker health.

PACE used the nine-phase PRECEDE-PROCEED health planning framework to develop and test an intervention in a community participation context (Green and Kreuter, 1991). The strength of this framework is its specification of distinct research phases to identify a health problem and its impact on quality of life, to identify modifiable behaviors and environmental factors, and to specify factors that will predispose community members to change these behaviors, reinforce behavior change and enable these new behaviors. These are linked to policy and regulatory issues in the final formulation of the intervention plan. Finally, the intervention is evaluated in terms of its success in changing the contexts of health behavior and, ultimately, improving health and quality of life. A brief description of the PRECEDE-PROCEED planning process used in PACE has been described by Quandt et al. (1999a); an article that fully describes this process is in development.

We have begun to document what we have learned through these empirical studies in a series of journal articles and reports. These are listed in the references section at the end of the manual (PACE publications are marked with an asterisk [*]). We expect that several more papers and reports based on PACE will be published in the coming years.

Acknowledgments

PACE is a collaborative effort of individuals from the Wake Forest University School of Medicine, the North Carolina Farmworkers' Project, and the University of North Carolina at Chapel Hill. During the several years in which the PACE Project has been active, a number of individuals have worked as staff members. Individuals working at the North Carolina Farmworkers' Project who contributed to the PACE Project are Refugio "Cuco" Bravo, Caroline Cardona, and Wilfredo Rivera. Academic investigators who contributed to PACE are Altha Cravey, H. Nolo Martinez, and John Preisser. Finally, several research staff members made important contributions to the overall project: Rachel Avery, Carlos Barrios, Elisa Canal Beeby, Rebecca Elmore, Marc Antonio Rodriguez, Aaron Pell, and Mandi Summers.

The PACE Project also benefits from the guidance of an advisory committee. Individuals who have served at different times on this committee include farmworkers, farmers, farmworker service providers, and North Carolina Cooperative Extension professionals. Farmworker members include Maria Jasso, Salud Solorio, and Maria Reynoso. Participating farmers include Dudley Langdon and Keith Parrish. North Carolina Cooperative Extension professionals include Gregory Cope, Roger Crickenberger, and Julia Storm. Representatives from different farmworker service organizations around the state of North Carolina include Ivette Lopez Bledsoe, Warren Bock, Dawn Burtt, Caroline Whitehead Doherty, Mercedes Hernández-Pelletier, Deborah Norton, Melinda Wiggins, and Mary Anne Tierney.

The plan of this manual

In the following sections of this manual, the steps and activities of the Safety Program are presented in detail:

- ***Chapter 1*** explains the importance of working with the community in developing educational programs, and the general model for the pesticide safety program developed by the PACE Project.
- ***Chapter 2*** focuses on the procedures for planning a successful safety program using a collaborative, participatory approach.
- ***Chapter 3*** describes the specifics of the Safety Program in detail, including suggested instructional techniques and program outlines.
- The ***Appendix*** contains the Fact Sheets and other materials used in the PACE Project Safety Program.

Chapter 1: Developing Community-Based Safety Programs

The advantages of community-based programs

Members of the community can be active participants in the development and delivery of safety programs instead of simply being the recipients of health education efforts. Community participation is an important component in the design of community health projects, improving content and process in several ways (Israel et al., 1994, 1998).

Cultural appropriateness

Community participation increases the likelihood that an intervention will be culturally appropriate (Arcury et al., 1999a). A well-intentioned program can fail if it is not culturally acceptable and does not consider people's backgrounds and the context in which they work. Involving the community in the design and delivery of a project helps focus it on the points that are the most meaningful to the community and can help avoid mistakes.

As late as the 1980s, the farmworker population in North Carolina was ethnically diverse, including African-American, Native American, Mexican, Haitian, and White workers. During the 1990s, the farmworker population shifted towards more Latino and foreign-born workers (Mines et al., 1997). However, there is still considerable variation in nation and state of origin, as well as in language and cultural diversity. Many farmworkers in North Carolina are from southern Mexico and speak an indigenous language, rather than Spanish, as their first language. Incorporating input from members of different backgrounds in the PACE project helped broaden the applicability of the final product.

Effectiveness

Community participation increases the likelihood that the goals of the project will be met; that is, that it will be effective (Arcury et al., 1999). Projects that actively incorporate the knowledge, views, and lifestyle of the community are more likely to produce the desired changes in behavior because the community develops a sense of ownership of the results, rather than having the results imposed upon them.

Sustainability

Community participation also produces a more sustainable product, a model that will continue to be used by community members (Altman, 1995). Many projects have a significant impact during the time that they are implemented, but are not carried on when the initial project staff leaves. If community members are not involved, there will not be anyone familiar enough with the project to carry it forward. By centering more ownership of a pesticide-related project in the community, the members themselves will have the capacity and the commitment to operate and manage the project.

Community involvement

If the project is to be appropriate, effective, and sustainable, then the community must be involved on several levels (see Arcury et al., 1999a).

Consultation

Community members must be consulted at every point in the process. Contacts with the community should include formats where discussion and questioning can occur. Presentations are developed that are interactive and time is dedicated for suggestions and responses. The locations for these discussions are in the community: churches, labor camps, and other gathering places. Many times these discussions lead to increased interest in the project. Key community members may decide to become more involved, bringing their expertise as well as lending legitimacy to the project.

Planning

Community members must assist the project staff with planning the initial project and modifying it along the way. With community input in planning, the inevitable adjustments that are needed during a project will be ongoing, making it ultimately more effective. Meetings must be held with various community representatives and stakeholders to review materials, discuss tactics for accomplishing project goals, and generate new ideas.

Implementation

When community members are involved with implementation of the project, they become partners with the project staff and share in the responsibility for the results and ultimate effectiveness of the project.

Partnership development

Community-based participatory research must be a true partnership between the health care professionals and the community that is intended to benefit from the activity. For this to happen, communication and trust must be established early in the process and carefully nurtured throughout the project.

Communication

It is important to keep the community informed about project activities, so the settings for interaction with the community should promote discussion and critique. Project staff should not simply present information to the community about ongoing activities. Rather, opinions are solicited, reactions to the research are compiled and discussed, and key points are clarified. By valuing and incorporating the knowledge and experiences of the community, important insights are gained and further participation is encouraged.

Accountability

Partners must be willing to speak frankly about project progress and problems. Community members and project staff must be willing to both offer and accept constructive criticism.

Trust

As staff members try to gain the trust of the community, they must also place trust in the community - trust that community members can function as partners. This includes planning together and responding to suggestions and criticisms.

Shared responsibility

In order for community members to feel responsible, their ability to conduct the project must be recognized and encouraged. Educational project staff members must invest the time to share their knowledge of the research and education process with community members, as these same project staff members ask community members to share their knowledge of the community, their experiences, and their beliefs.

Other benefits of participatory research

A participatory approach to community health research has other benefits:

- ➤ It forces the research to address the concerns of community members in addition to the concerns of health professionals (Plaut et al., 1992).
- ➤ It increases the involvement of community members and increases their willingness to provide in-depth and accurate information for the development and evaluation of the research.
- ➤ It recognizes the expertise of community members and dedicates time to capacity building. Community participants can take the skills that they have refined and apply them in other arenas. They can also serve as resources and as project staff in new locations as they travel throughout the country.

The involvement of a community-based organization (CBO) is an excellent vehicle for obtaining ongoing community input. In addition to taking a leadership role in the project, a CBO can also assist in developing other settings in which community members can participate. An important element of the PACE project is a partnership of an academic team with the North Carolina Farmworkers' Project (NCFP). This CBO partner publicized community forums and made arrangements for farmworkers to attend. NCFP also recruited farmworkers for an advisory committee. Farmworkers contributed to the development of the PACE Safety Program as members of the PACE Advisory Committee, during ongoing meetings with the staff of the NCFP, and through a series of community forums where potential education materials and formats were reviewed and critiqued. The level of participation ranged from consultation to partnership and ownership of the eventual results (Arcury et al., 1999a). The result of this participatory process is a safety program model that can be adapted to the particular needs of farmworkers.

Model for the PACE Safety Program

The PACE Safety Program is structured around three steps: a Direct Safety Program for all farmworkers at a site (*e.g.*, farm labor camp, trailer park, apartment building, or house), a Safety Program for farmworker Promoters, and follow-up with farmworker Promoters (Figure 1).

Step 1: Project staff provide a Direct Safety Program to all farmworkers in the project area. This Program focuses on chronic exposure to pesticide residues, as well as other information relevant to farmworkers in the area. Issues of control are identified and responses are developed.

Step 2: Individual representatives are recruited from the on-site Safety Program and are invited to a Promoter Safety Program. At this program, Promoters receive additional materials about pesticide safety and practice ways to share information and promote workplace safety.

Step 3: Project staff conduct follow-up visits with the Promoters and other site residents to receive feedback, answer further questions, and distribute additional materials.

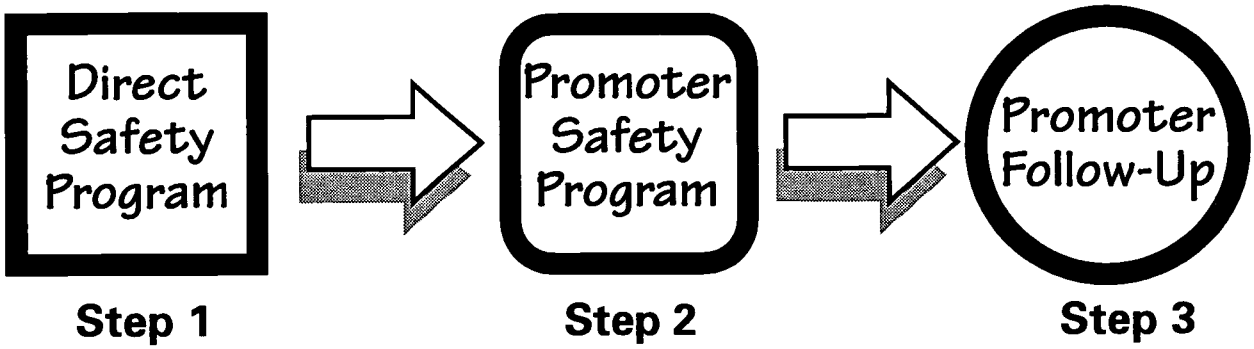


Figure 1. PACE Project Safety Program Model

The first step, Direct Safety Program, must meet the minimum requirements established by the United States Environmental Protection Agency (US-EPA) for certification under the Worker Protection Standard (WPS) as applied to field workers (Environmental Protection Agency, 1992). The PACE Project Safety Program supplements this initial step with a lay safety promoter program that provides in-depth instruction and follow-up for farmworkers to serve as resources and agents of change in their workplaces. Other projects have shown that workers react positively to safety information that is provided by co-workers (Watkins et al., 1994; Kurtz et al., 1997).

The first step presents the minimum information that farmworkers should receive in order to understand and apply basic safety practices. While the first step may be sufficient to meet regulatory standards, the PACE Project recommends that all three steps be implemented in order to achieve a significant impact on knowledge and a change in behavior.

How does the PACE Project Safety Program differ from standard WPS training programs?

Evaluations of the first year's pilot intervention showed that while farmworker knowledge about pesticide exposure increased, behavior and working conditions did not change. In order to determine the reason for this situation, the PACE Project staff reviewed the in-depth interviews conducted during the formative research phase, and also held community forums with farmworkers. In this way, three areas needing additional consideration were identified: focus, relevance, and control.

Focus

The Safety Program needs to be focused, with emphasis placed on the key elements that farmworkers need to know in order to protect themselves. Many existing Safety Programs attempt to cover all the required points in the US-EPA Worker Protection Standard with fairly uniform emphasis. There

are 11 major concepts in the Worker Protection Standard (Figure 2), and each of these contains 4 or 5 other points. Farmworkers told us that this was simply too much information to absorb in a single training session. Therefore, it is important that the Safety Program focus on key issues, even though others should be mentioned.

1. Descriptions of where and in what form pesticides may be encountered during work activities.
2. Hazards of pesticides resulting from toxicity and exposure, including acute and chronic effects, delayed effects, and sensitization.
3. Routes through which pesticides can enter the body.
4. Signs and symptoms of common types of pesticide poisonings.
5. Emergency first aid for pesticide injuries or poisonings.
6. Instructions on how to obtain emergency first aid.
7. Routine and emergency decontamination procedures, including emergency eye flushing techniques.
8. Hazards from chemigation and drift.
9. Hazards from pesticide residues on clothing.
10. Warnings about taking pesticides or pesticide containers home.
11. Requirements of the WPS designed to reduce illness or injury resulting from workers' occupational exposure to pesticides, including application and entry restrictions, the design of warning signs, posting of warning signs, oral warnings, the availability of specific information about applications, and protection against retaliatory acts.

Figure 2. Required concepts of US-EPA Worker Protection Standard Training

Relevance

The Safety Program needs to be relevant to the experience of a particular group of farmworkers receiving the education by emphasizing situations that they encounter in their day-to-day work. Many existing educational materials present information on topics that may not be relevant to local conditions. Most generic WPS materials include extensive lists of the ways

that farmworkers can be exposed, such as chemigation, being splashed in the eyes, or being sprayed while in the field. Such situations are rarely encountered in the course of the work performed by farmworkers in North Carolina. Examples of more common experiences will increase the salience of the information for farmworkers.

On the other hand, an exposure route that is relevant to most farmworkers, pesticide residues, is not adequately emphasized in most WPS materials. Most of the existing instructional materials do not stress residues because the more immediate danger comes from being exposed to the concentrated chemicals during mixing or applying. Educators need to acknowledge that mixing and applying are dangerous, but they should also be prepared to explain why it is important for farmworkers to learn about residues and understand the importance of taking appropriate protective measures.

Residues from pesticides persist even when much of the applied chemical has evaporated. These residues remain on the plants, tools, soils, anything that was exposed to the chemicals while they were being applied. After the restricted entry interval (the period of time after application during which no one should enter the field), there is far less danger from the chemicals. However, farmworkers come into contact with residues day after day. This on-going contact with pesticide residues can cause both immediate, acute problems, as well as future, chronic problems. This makes personal hygiene practices such as hand washing, showering, and wearing clean clothes daily especially important.

In the existing educational materials, most of the information is geared toward preventing exposure due to spills, spraying, or drift. Very little attention is given to why farmworkers need to protect themselves if they are performing routine work and thus coming into contact with residues. This problem was identified during the formative research conducted in 1997 (Quandt et al., 1998a). Most farmworkers did not report being sprayed and becoming sick, or otherwise feeling exposed to danger or injury as a result. Because of this, many farmworkers indicated that they did not feel the need to take precautions. An important message in the Safety Program must be that people are always at risk when they are working in the fields because they have continuous contact with pesticide residues. Immediate acute effects of residue exposure include nausea, rashes, and dizziness. Long-term chronic effects of residue exposure may include cancer, neurologic, and reproductive problems. It is important to emphasize that both direct exposure and exposure to residues can cause acute and chronic health effects.

Control

Control can be defined as a person's perception of how well he or she can bring about beneficial events or avoid harmful events. An issue of control that must be considered for instructional purposes is the farmworkers' perception of their ability to avoid the harmful effects of pesticide exposure. Farmworkers have "control" when they believe they are able to protect themselves from the dangers of their work environment. During the interviews conducted in 1997 and 1998, farmworkers were asked to relate their experiences with pesticides and to quantify perceived barriers to work safety. Analysis of these interviews revealed that control exerts significant influence on behavior (Austin et al., 2000). When farmworkers feel they have control over the level of exposure in their work situation, they will change their behavior to take precautions and to implement safety measures. When they do not feel they have control, they do not try to change their behavior. Similar findings in California support this idea (Vaughan, 1995; Grieshop, 1997).

While the PACE Project evaluation found that instruction increases knowledge, it also found that this knowledge did not have a noticeable effect on sense of control. Even though farmworkers had more knowledge, they did not attempt to change their behaviors or beliefs because they felt they lacked control in the situation. For example, farmworkers feel a lack of control in situations where they are forced to hurry, and thus do not have time to take precautions. They may not want to ask questions or refuse to work in a recently-sprayed field or without the proper protective equipment. They will not complain because they fear losing their jobs or being perceived as a poor worker by the employer. They are reluctant to make waves and risk being labeled a troublemaker.

While power relationships between the employer and employee are important, farmworkers deal with other issues of control as well. Hot and humid conditions in the field make it difficult to use the proper protective equipment. Employers may not provide adequate water for washing while they are working. Workers may not have a place to wash their clothes frequently enough to have clean work clothes every day. In the PACE Safety Program, instructors worked with the Promoters to find ways to help farmworkers identify these issues of control and find ways to address them. For example, farmworkers can exercise control by requesting that the employer provide water in the fields, or by taking their own water. They can also find ways to wash their clothes, and can try to get clothes that are not too hot to wear but still provide protection.

Chapter 2: Planning a Safety Program with Farmworkers

Time and effort are required to prepare a successful safety program. The PACE Safety Program dedicates more time to the preparation stage than to the actual Safety Program and follow-up. While many existing manuals and materials cover safety content, very few address the steps needed to establish a safety program. This chapter provides descriptions of ideas and activities that will improve the effectiveness of a safety program. The steps are designed for a pesticide safety educational program but are applicable to any educational program with farmworkers.

Talking with the community

The first step in setting up a safety program with farmworkers is to consult the community. By involving farmworkers and their families in the planning stages of the Safety Program, participation can be encouraged and pitfalls avoided.

Many opportunities exist to consult with farmworkers. The simplest approach is to ask individual farmworkers about their interests and needs. A more formal approach is to organize a community meeting in which a group of farmworkers can be consulted. In the PACE Project, community forums were held at local churches, the office of the community-based organization, local restaurants, and at farmworker housing sites. These forums were invaluable to the development, implementation, and evaluation of the PACE Safety Program.

This initial stage of talking with the community is focused on the issue of pesticide safety and education itself. Is this issue relevant to farmworkers? How important is this issue when compared to other concerns the farmworkers may have? Other issues that should be addressed in this early stage include the time, location, and format of the proposed Safety Program. This interactive planning process should continue throughout the development stage and into the follow-up stage.

The planning process is also helpful in generating interest in the Safety Program. Some of the participants in the consultation process may be interested in receiving instruction or helping to present the Safety Program.

These self-selected participants may also help recruit other farmworkers and identify potential instructional sites.

Records maintained of activities undertaken during the development process will provide valuable feedback into the most (and least) effective means of contacting and incorporating the community into the project. These notes will be valuable for future reference and as a record of the process of setting up a Safety Program. Present and future Safety Program organizers need to know how the community responded to the ideas presented, as well as any new ideas that were proposed.

Farmworkers are consulted about educational options.

Gathering resources

The instruction manual

Identify and review appropriate instruction manuals available on your topic. Select one that fits your topic, the time frame within which you need to work, and the issues most relevant to the needs of the community with which you are working. Become familiar with the order and methods of the education program, and incorporate the principles of community participation. This PACE Project manual focuses on the issue of pesticide safety. Other manuals that are available on this topic include "Field Workers and Pesticides: A Trainer's Manual" from the University of California at Davis; "Danger: We Work with Pesticides" from the Farmworker Health and Safety Institute; and "Protect Yourself from Pesticides: Safety Training for Agricul-

tural Workers" from the U.S. Environmental Protection Agency. The PACE Project staff reviewed these manuals and other pesticide-related educational materials (see Quandt et al., 1998b, 1999b).

Instructional materials

Review available instructional materials, such as videos, flip charts and posters, and select those best suited to your topic. Share these materials with the community and obtain feedback as part of the initial planning process. A list of materials relevant to pesticide education, along with information on obtaining them, can be found in the Appendix of this manual. Appropriate environmental agencies in your state can be contacted, as well as national farmworker service organizations. Your choice of materials may be dictated by your budget, facilities, farmworker characteristics (*e.g.*, type of work, literacy level), and time constraints.

Handouts

Review and select materials and resources to be given to participants to reinforce the concepts provided in the Safety Program. These resources include brochures, pocket guides, and contact lists. Participants should not leave without references and support.

You may find that available materials do not adequately cover safety issues pertinent to the participants' work environment or are not in their preferred language. In this case, it will be necessary to develop new materials or translate existing ones. For example, pesticide residue is a concept that few available materials address in any detail. "El Terror Invisible" is a fold-out comic developed by the PACE Project to highlight the dangers of residue. The symbol for "El Terror Invisible" is a menacing ghost, representing pesticide residues that are undetectable, but can be harmful. The pages of this comic are included in the Appendix of this manual (following page 70) and may be photocopied onto 8½"x14" legal size paper for distribution to participants. Be sure to include appropriate local contact information in the space provided (but do not delete the copyright notice).

Give each participant in the Promoter Safety Program a set of materials to use while presenting and distributing information to co-workers. This might include a copy of the entire manual that was used in the Safety Program or selected sections of the manual. PACE Project Fact Sheets in English (pages 38-48) and in Spanish (pages 49-59) are designed for photocopying and distributing to Promoters. These Fact Sheets address 10 of the 11 WPS-required concepts (see Chapter 1).

Become a Certified WPS Trainer

In the United States, training in pesticide safety is mandated by the Worker Protection Standard (WPS), a set of regulations enforced by the United States Environmental Protection Agency (US-EPA) (Environmental Protection Agency, 1992). Each state or tribal government has a procedure for becoming a WPS Certified Trainer. The process involves passing an exam on pesticide safety and the Worker Protection Standards and submitting an instructional outline. Becoming a Certified Trainer allows you to distribute EPA Certification cards to successful Safety Program participants. Contact your state Department of Agriculture or regional EPA office for information on becoming a Certified Trainer. The officials in charge of the training in your area can help identify appropriate health educational materials and provide contact information for other Certified Trainers in your local area.

Finding a location

It is important that the Safety Program be conducted in a place that is convenient for farmworkers. Do not expect participants to come to you. Because transportation can be difficult to arrange, a familiar and central site is preferable. You may find it easier to arrange for space in an agency office or a clinic meeting room. However, these locations should only be used if they are nearby, accessible and nonthreatening. A good approach is to select a location where farmworkers already gather. This might be a church, a community center, or a trailer park.

The Safety Program participants should feel comfortable in the surroundings and secure in making comments and asking questions. The initial Direct Safety Program for the PACE Project was presented at farmworker housing sites. Taking the program to where farmworkers live and conducting the session after work hours maximized the opportunity for all farmworkers to participate. The Promoter Safety Program for the PACE Project was held at the office and community center of the North Carolina Farmworkers' Project.

Be sure to consider availability of any facilities you may need in order to use the instructional materials you have selected, such as electricity to run a video player and monitor. Other considerations may include the presence of adequate lighting, seating, and tables, and space for flip charts and demonstrations. While a well-designed safety program can be entirely successful in almost any setting, arranging a comfortable and convenient environment can help avoid problems and distractions.

Recruiting participants

Recruiting participants is one of the most difficult aspects of a Safety Program. Farmworkers have limited free time and their work schedules may change with little notice. Other needs, such as grocery shopping, washing clothes or helping a friend, compete with time available for participating in a Safety Program. It is important to adjust to the time demands of the participants by presenting Safety Programs at their own work and housing sites whenever possible.

There are many methods of getting the word out in the farmworker community. Probably the best approach is to go directly to places where farmworkers gather (*e.g.*, stores, laundromats, restaurants) and talk with whoever is present. Presentations or brief introductions in group settings such as churches and English as a Second Language (ESL) classes are also effective. Announcements in newspapers and on radio stations that target Spanish speakers are also possibilities, although these are insufficient by themselves. The point is that it is necessary to make face-to-face contact. Do not post a few flyers and hope that people will show up.

A community-based organization (CBO) can play a crucial role and offer considerable insight and assistance in finding effective ways to contact and recruit farmworkers. CBOs, such as a farmworker organization, a union, a church, or a service-oriented nonprofit organization, have many contacts with local farmworkers. The CBO can provide both suggestions and assist with contacting farmworkers in your area. Consulting the members in advance will help you focus your activities.

Participation in the Safety Program should be promoted and encouraged as a capacity-building exercise that allows farmworkers to exercise more control over their health, safety, and work environment. The benefit of attending the Safety Program should be this increased capacity rather than a one-time reward. There is a natural tendency to want to compensate participants for attending or to attract them with an incentive, but careful consideration should be given to the kinds of incentives offered. Some farmworkers may be uncomfortable or suspicious of someone offering a gift in exchange for their attendance. For example, during the PACE Project it was discovered that a cash incentive was culturally inappropriate for these Latino farmworkers.

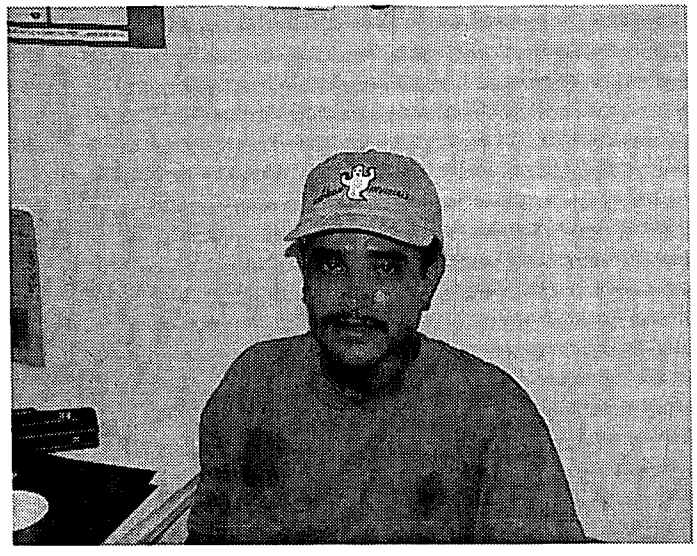
Offering a "carrot" does not develop commitment to a Safety Program, nor is it likely to be an effective recruiting technique. There are, however, tangible items that are useful and valuable to the participants. These include materials related to the Safety Program such as pamphlets, videos,

or other teaching tools that help participants share information with others. Cards or certificates can provide recognition of accomplishment in the eyes of co-workers and future employers.

Special effort and consideration must be given to the recruitment of participants for a Promoter Safety Program. It is not easy to recruit a Promoter from any given labor camp or housing site. At some sites there will be farmworkers who are interested but do not have time due to their jobs or family obligations. However, at other sites there may be several farmworkers who have both the interest and the time to become involved with the community and teach others. During the PACE Project, Promoters were recruited from approximately two-thirds of the sites.

One insight gained during the PACE Project was that Latino workers often prefer to participate in these activities in a group. Individuals recruited as Promoters often asked co-workers to accompany them. They indicated that it would be unusual for an individual to attend an event such as a safety program alone. As a result, most sites sent two or three workers, and sites were represented by up to seven workers. This type of group identity can create challenges for a Promoter Safety Program.

For the PACE Project the incentives included educational materials, especially the comic "The Invisible Terror." The farmworkers who attended the Promoter Safety Program received a packet of brochures, comics, and posters to distribute at their workplace. The Promoters also received a hat with "The Invisible Terror" logo to use as an educational tool and to identify them with the PACE Project.



A PACE Promoter wearing an "El Terror Invisible" hat.

Promoting attendance

Scheduling

Good attendance is closely related to the time at which the Safety Program is offered. Identify the most convenient time for farmworkers to attend by consulting members of the farmworker community or a community-based organization. Farmworkers often have difficulty getting time off from work, so schedule the Safety Program during non-work hours. The best times are generally late evenings and weekends. Scheduling the Safety Program at an inappropriate time will greatly reduce participation.

Transportation

If the Safety Program does not take place at a location where farmworkers are already gathered (*e.g.*, a housing site), arrangements will need to be made to bring farmworkers to the program site. Many farmworkers do not have access to a car and will require assistance with transportation. Make it easy for the participants to attend by reminding them the day before or the day of the Safety Program so they will remember that someone will be picking them up. Remember that many farmworkers will not have access to a telephone, so the reminder may need to be delivered in person.

If the Safety Program is scheduled after church services or at a labor camp or other residential site, it may not be necessary to provide transportation. However, it is still a good idea to remind participants of the time and the specific location just before the program.

The logistics of transporting farmworkers can be daunting. One way to handle the task is to make arrangements with one or two volunteers to help with the driving. These volunteers should be familiar with the area and know how to find housing that is located on farms or in trailer parks and may not be easily visible. The volunteers should also be knowledgeable about the Safety Program so they can reinforce the importance of attending and perhaps recruit other farmworkers that they meet.

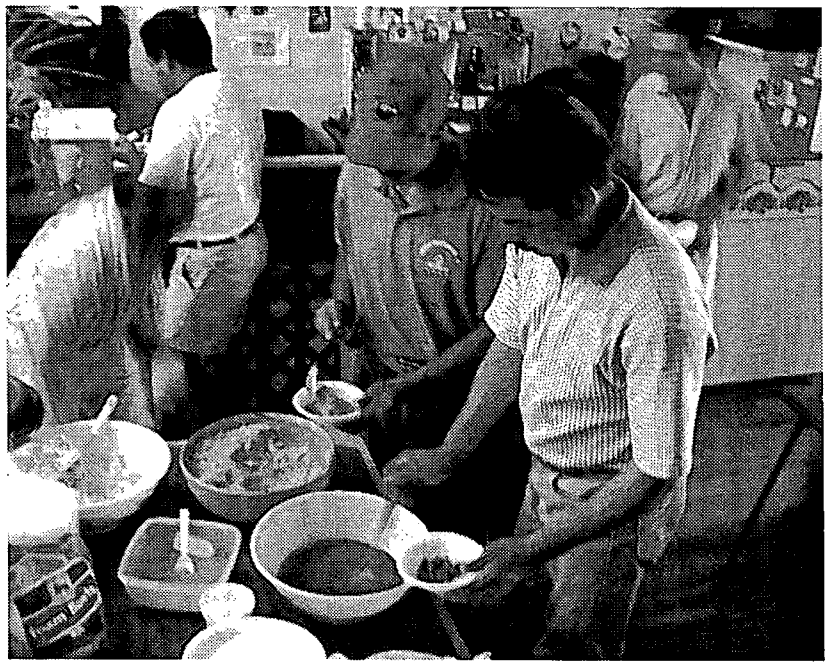
Farmworker participants were reminded about the PACE Project Safety Program sessions during a visit one or two days in advance and then provided with round trip transportation. Each vehicle driven by the PACE Project staff brought participants from two or three sites. In cases where the farmworkers had their own means of transport, such as a van, the PACE Project staff arranged for them to follow another vehicle to the Safety Program location.

Other preparations for the Promoter Safety Program

Food

Although the Promoter Safety Program is interactive and fun, it can be tiring. Having food available provides an occasion for a break. Eating is a social activity that allows participants the opportunity to make observations or develop a more personal relationship with the instructors and with each other. Questions and issues that arise during this informal interaction should be presented to the entire group after the break.

For the PACE Project, a local Latino family provided dinners for the Promoter Safety Programs. The home-style cooking was well received by the farmworker participants, and the cost was reasonable. Plus, these funds then become available for local community development.



A dinner is shared at a Promoter Safety Program.

Child care

Many farmworkers, especially women, are responsible for caring for children. Arrangements should be made so that children can accompany parents to the Safety Program. These arrangements include hiring babysitters and preparing some food and activities for the children. These activities can be related to the topic of pesticide safety. While certain parts of the Safety Program might be interesting and fun for children, generally there should be a place where they can play and be noisy without disturbing the adult participants. Some parents and children may feel more comfortable staying together, so be prepared to be flexible.

Chapter 3: Implementing a Farmworker Pesticide Safety Program

The PACE Safety Program consists of three parts: a Direct Safety Program for groups of farmworkers such as work crews, church congregations, or workers living in the same area; an expanded Safety Program for farmworker representatives as Promoters; and a follow-up program for Promoters. Both the Direct and Promoter Safety Programs meet the requirements of the US-EPA's Worker Protection Standard training for field workers.

Although your efforts will be aimed at farmworkers, it is important to be aware of how farmers regard safety education for farmworkers. Farmers appreciate a healthy workforce. Healthy workers usually work harder, make fewer mistakes, and have fewer accidents. Most farmers take courses to obtain licenses to mix and apply pesticides. These courses do not always contain all the information farmworkers need to know, so farmers may think that some of the safety information in your program is not important. They may even think it is wrong because it was not taught in the course for applicators (Quandt et al., 1998a). You should be able to describe the differences in exposure of farmers and farmworkers, particularly the idea of residues, in case you need to justify the Safety Program you have planned.

Step 1 - Direct Safety Program

During the development of the PACE Safety Program, project staff held community forums with farmworkers to discuss the best format for delivering information about pesticide safety. These farmworkers encouraged project staff to offer a Direct Safety Program to all workers. They reasoned that all workers should receive the basic information so that if a Promoter leaves the site or is ineffective, the other workers would still have received the most important points. In addition, these farmworkers indicated that having an outside expert make the presentation would lend legitimacy to the efforts of the Promoters.

While shorter than the day-long Promoter Safety Program, the Direct Safety Program provides the basic set of information required by EPA regulations for Worker Protection Standard (WPS) certified training. At the end of the

Direct Safety Program, everyone in attendance can receive certification cards. These cards can only be distributed by WPS certified trainers, so instructors will need to obtain certification in their states or tribal territories.

Format of a Direct Safety Program

Think of the Safety Program as a discussion among persons with different areas of expertise. Farmworkers are the experts in the area of farm labor conditions and the work environment. The educators are the experts in safety and health. Each group can learn from the other. Strive for an open and informal atmosphere so that all participants feel comfortable expressing their ideas and opinions. Instead of asking "Are there any questions?" ask "What do you think about...?"

Materials

- A container of baby powder and a newspaper
- Several copies of the comic *El Terror Invisible*
- Visual educational materials, such as enlargements of the Fact Sheets included with this manual or the EPA Flip-Chart (page 60)
- An appropriate video (see page 60 for some possibilities)
- A combination TV/VCR

Outline of a Direct Safety Program ***(Estimated time: 1 ½ hours)***

The Safety Program concepts of focus, relevance, and control are highlighted in each section.

1. Introduction: introduce yourself and have the farmworker participants introduce themselves. Describe the content of the Safety Program and lead a short introductory discussion with the group. *(Relevance)*

   Ask: Do any of you work with agricultural chemicals?

   Probe: Can you tell me more about that?

   Do you think agricultural chemicals are dangerous?

   Do you know anyone who was hurt or became sick working with chemicals?

   What happened?

   Ask: When are you exposed to pesticides and other agricultural chemicals?

   Probe: How are people that mix and spray chemicals exposed?

   How are you exposed in the field?

How are you exposed at home?

Can you get sick from touching plants that have been sprayed? How?

2. Discussion: introduce the concept of residue exposure and demonstrate with a hands-on activity. *(Focus, Relevance)*

   Explain: As agricultural chemicals evaporate, some of the active ingredients remain on the plants in a transparent form called residues. You may not be able to see or feel the chemicals, but you are still being exposed.

   Activity: Use the container of baby powder to demonstrate the concept of residues. Shake powder on the newspaper and have someone pick it up and carry it around - look for where the powder has touched their clothes or body. Emphasize the point that often you cannot see or smell residues.

3. Comic: distribute and review the "El Terror Invisible" comic to reinforce the concept of danger from residue. *(Focus, Relevance, Control)*

   Discussion questions:

   What is the "terror invisible"?

   How can the "terror invisible" harm you?

   Why do some people think that the "terror invisible" will never harm them?

   What are some of the long-term effects of exposure?

   What can you do to protect yourself?

4. Fact Sheets: using the Fact Sheets or other visual aids, talk through the 11 WPS-required concepts of pesticide safety. Rather than lecturing the workers, ask questions such as "What do you see in this picture?" to encourage active participation. *(Focus)*

   In particular, emphasize the three basic ways to avoid exposure:

   - ➤ Always wear a long-sleeved shirt, long pants, shoes, socks, and a hat (Fact Sheet #8).
   - ➤ Always wash your hands before eating, drinking, smoking, and going to the bathroom (Fact Sheet #9).
   - ➤ Always wash your work clothes before wearing them again (Fact Sheet #10).

5. Video: show the selected video, followed by a discussion. Select a short video that reinforces the important points rather than a long, detailed one, to keep the Program as a whole from being overly long. *(Focus)*

   Discussion questions:

   What was the most interesting part of the video?

   With which character could you identify?

   What is the most important message of the video? (*e.g.*, recognize that pesticides are dangerous, wear protective clothing, wash frequently, do not go into recently treated fields, wear protective clothing)

   What could happen to you if you have small amounts of exposure over a long period of time? (*e.g.*, cancer, sterility, neurological problems, birth defects)

6. Wrap-up discussion: discuss situations that participants confront in their own workplaces and ways that workers can respond to these problems. Note that this takes the approach of problem-solving. *(Relevance, Control)*

   Discussion questions:

   Is it difficult to wear a long-sleeved shirt every day? Why? What can you do to solve that problem? (*e.g.*, use a lightweight shirt)

   Do you have water to wash your hands in the fields? If not, how could you get water? (*e.g.*, bring your own water, ask the grower or crew leader to provide water)

   Is it possible to wear clean work clothes every day? How can you do it? (*e.g.*, buy extra clothing at a flea market, arrange for washing during the week)

7. Closing remarks: thank everyone for participating and distribute the certification cards. Be sure everyone knows how to contact you if questions should arise. This is also a good time to recruit potential participants for the Promoter Safety Program.

Direct Safety Programs are informal and need to be adapted to the particular conditions of the site. Programs in PACE were mainly presented in the evening after work hours when farmworker participants were also involved with preparing dinner or showering. While the teaching situation was variable, the educators successfully presented all the components in the

outline by discussing the information in an interactive style and being aware and respectful of the needs of the participants.

A group of farmworkers participating in a Direct Safety Program.

Step 2 - Promoter Safety Program

The role of the Promoter is to serve as an agent for change. The Promoter receives information and education, and also maintains a collection of educational materials as references and for distribution to co-workers. But the main responsibility of the Promoters is to identify problems and help their fellow farmworkers develop solutions.

The Promoter Safety Program involves more than the transfer of information and knowledge. Participants practice diagnosing situations where exposure occurs and identifying ways to reduce that exposure. Discussion and role playing activities encourage participants to use problem-solving skills to develop their own responses to local conditions.

Promoters are not expected to be able to set up and present their own Safety Programs after completing the program. This distinguishes the PACE Safety Program from a "train the trainer" program. In a "train the trainer" program, the participants are expected to duplicate the training they received for other workers. Rather than being trained as presenters, Promoters are provided with the tools to assist their co-workers informally and to take an active role in identifying and responding to safety issues in their own workplaces and homes.

The PACE Promoter Safety Program offers an opportunity for more intensive occupational safety instruction than the minimum required by the WPS. It would be ideal if all farmworkers could receive the information and participate in the exercises included in the PACE Promoter Safety Program.

However, in general this is not feasible due to the investment in personal time that would be required of the farmworkers. Since the same concepts are covered in the Promoter Safety Program as in the Direct Safety Program, it is not necessary for interested potential Promoters to take the shorter course first.

Built into the PACE program is the idea that becoming a Promoter is a step towards becoming a community leader. The Promoter Safety Program builds the capacity of individual farmworkers. Part of the follow-up process is to encourage Promoters to pursue other capacity-building opportunities. A community-based organizational partner may offer other types of workshops and leadership development opportunities. Local clinics or churches may also provide education on other health topics, such as HIV/AIDS prevention, dental care, and domestic violence.

Format of a Promoter Safety Program

- Because a Promoter Safety Program is fairly long and detailed, you should incorporate ways to engage the participants. This does not mean continuous theatrics, but incorporating activities to keep the presentation stimulating and memorable. An ***active*** learning process involves the participants in "learning by doing." The actual "doing" includes such activities as modeling a behavior, acting out work scenarios, and participating in the discussion and presentation of the information (Wallerstein and Rubenstein, 1993).
- You should allow sufficient ***time*** for the participants to practice what they are learning. They not only need to receive and discuss information about pesticide safety, they need to practice sharing that information as a Promoter.
- You should keep the atmosphere open and ***informal*** so that participants will feel comfortable expressing their ideas and opinions. Farmworkers are the experts in the area of farm labor conditions and the work environment. Instead of asking "Are there any questions?" ask "What do you think about . . . ?"
- You should use appropriate educational materials such as videos, posters, and flipcharts to illustrate key points. ***Visual aids*** can make presentation material more relevant to farmworkers because they show actual work or living conditions. However, remember that people will retain only a portion of what they see unless it is reinforced by active learning. Do not make visual aids the sole focus of the Safety Program.

Materials

- A blank flip-chart and markers of different colors
- Several large sheets of paper, such as butcher paper, and several black marking pens
- A container of baby powder and a newspaper
- Copies of visual aids, such as the Fact Sheets included with this manual, for each Promoter
- Pocket guides, pamphlets and other handouts
- Copies of "El Terror Invisible" (at least 10 copies for each Promoter)
- An appropriate video (see page 60 for some possibilities)
- Combination TV/VCR

Outline of a Promoter Safety Program *(Estimated time: 5 hours)*

The Safety Program concepts of focus, relevance, and control are highlighted in each section.

The Promoter Safety Program outline presented here illustrates how a program might be developed using a variety of educational materials and techniques. You will want to modify the length, content, and order of this outline to fit the needs of the participants and the resources of the organization hosting the session.

Use the blank flip chart to record responses, themes and ideas that arise from the discussion periods so that they can be referred to later in the session. You may also find it helpful to record questions as they arise in order to ensure that they have all been addressed by the end of the program. These notes can be useful records for the educators if they want to review the sessions at a later date, or compare the types of questions and discussions that took place at different sessions.

1. Introduction: introduce yourself and have each participant introduce himself or herself and talk briefly about his or her experience in farm work. Take time to make this exercise meaningful and even a bit formal. Formality in introductions for group meetings such as these Safety Programs is a common cultural norm among Latino farmworkers.
2. Group discussion: lead the participants in a discussion of their experience in working with and exposure to pesticides. *(Relevance)*

   Ask: Do any of you work with agricultural chemicals?

   Probe: Can you tell me more about that?

Do you think agricultural chemicals are dangerous?

Can you tell about anyone you know who was hurt or became sick working with chemicals?

What happened?

Ask: When are you exposed to pesticides and other agricultural chemicals?

Probe: How are people that mix and spray chemicals exposed?

How might you be exposed in the field or at home?

Can you get sick just by touching plants that were sprayed? How?

3. Discussion: introduce the concept of residue exposure and demonstrate with a hands-on activity. *(Focus, Relevance)*

Explain: As agricultural chemicals evaporate, some of the active ingredients remain on the plants in a transparent form called residues. You may not be able to see or feel the chemicals, but you are still being exposed.

Demonstration

Activity: Use the container of baby powder to demonstrate the concept of residues. Shake powder on the newspaper and have someone pick it up and carry it around. Look for where the powder has touched their clothes or body. Emphasize the point that often you cannot see or smell residues.

Role Playing

Activity: Ask one or two of the farmworker participants to repeat the activity in front of the group.

Discuss: Where could this demonstration be done?

Discuss: Are these materials available to you? If not, what else could be used?

4. Fact Sheets: review the Fact Sheets covering the 11 WPS-required concepts as needed, depending on whether participants have taken the Direct Safety Program. Place special emphasis on the sheets listed below and use the illustrations as "talking points." Ask participants what they see in the pictures. *(Relevance)*

➤ Fact Sheet No. 2:

Discuss: Where can agricultural chemicals enter your body?

➤ Fact Sheet No. 3:

Discuss: What are the immediate effects of being poisoned with agricultural chemicals?

What other problems may share these symptoms?

➤ Fact Sheet No. 4:

Discuss: What is chronic exposure?

What are the effects of chronic exposure to agricultural chemicals?

Practice: Where would you keep this booklet so that others could get information?

➤ Fact Sheet No. 5:

Discuss: What should you do if chemicals are sprayed or spilled on you?

Role Playing

Activity: Role play a situation in which an accident has occurred. What should you do if this happens to you or to someone you know?

5. Pamphlets and booklets: Review selected materials and discuss the contents. Discuss situations such as those suggested below and help participants locate the answers in the materials as appropriate.

Situation 1: A friend gets sick and he thinks it is from contact with pesticides.

Ask: How do you know if he is sick from pesticides?

What should you suggest he do?

Situation 2: A co-worker asks you what kind of clothing he should wear if he is harvesting and not spraying.

Ask: What should you tell this co-worker?

6. Video: show the selected video, followed by a discussion. Select a short video that reinforces the important points rather than a long, detailed one, to keep the Program as a whole from being overly long. *(Focus)*

Discussion questions:

What was the most interesting part of the video?

With which character could you identify?

What is the most important message of the video? (*e.g.*, recognize that pesticides are dangerous, wear protective clothing, wash frequently, do not go into recently treated fields, wear protective clothing)

What could happen to you if you have small amounts of exposure over a long period of time? (*e.g.*, cancer, sterility, neurological problems, birth defects)

Refreshment Break

7. Story: Have a farmworker participant (*e.g.*, a representative of a community-based organization) tell a story of someone who became sick or was injured by pesticides in the area where the Safety Program is being held. Relating a story is an effective way to bring information from a video or other materials home to the realities that farmworkers face in their area. For example, a member of the North Carolina Farmworkers' Project told the story of a young man from Mexico who passed out in the fields and died. He was not found until several weeks later. A life-size plastic skeleton was used as a visual aid. *(Relevance)*
8. Mapping: Ask the participants to create a map of a farm layout on the large sheet of paper using the black marking pens. Include as many landmarks as the participants can think of, such as fields, housing, barns, machinery, eating areas, portable toilets, etc. Ask participants to identify the different places where agricultural chemicals can be found. Indicate these locations with a red marker. *(Relevance, Control)*

   Discussion questions:

   Where can you find agricultural chemicals on the farm?

   Where do you think most people get exposed to agricultural chemicals?

   Where are the hand-washing facilities located?

   Where are the bathrooms in the field?

   Where do you wash clothes?

   Mapping is a common technique used in participatory education and occupational training (Wallerstein and Rubenstein, 1993; Weinger and Lyons, 1992; Perez, 1997). It provides an opportunity for farmworkers to demonstrate their knowledge of the workplace and visualize the sources of exposure.
9. Comic: distribute and review "El Terror Invisible." Give each participant at least 10 copies to distribute to co-workers who need the information. *(Focus, Relevance, Control)*

   Discussion questions:

   What is "El Terror Invisible"?

   How can "El Terror Invisible" harm you?

Why do some people think that "El Terror Invisible" will never harm them?

What are some of the long-term effects of exposure?

What are the basic ways to protect yourself?

What prevents some workers from wearing protective clothing?

Why should you wash your hands in the field?

Why is it sometimes a problem to wash your hands in the field?

Is it possible to wear clean work clothes each day?

10. Organizing: discuss how farmworkers can work together to resolve issues of safety in the workplace. It is important for participants to recognize that they can bring about change and that the information they are receiving is relevant and can be implemented. If the workers present a united front on safety issues, they can gain some control of their work conditions. This conversation is more powerful if it is led by a member of the community, such as a representative of a community-based organization. *(Relevance, Control)*

    Discussion questions:

    How might a group of workers discuss with their employer the need for changes to improve pesticide safety?

    If an employer fails to provide wash water for use in the fields, what can workers do to address this problem?

    How might a group of workers approach an employer to request that signs be posted when pesticides have been applied in a field?

    If a group of workers does not have access to a washing machine, what might be done to ensure that work clothes are washed separately from other clothes?

    Can you tell us about times that workers have taken steps to improve pesticide safety where they work?

11. Wrap-up: talk about the situations that the participants confront in their own workplaces, and discuss ways that workers can respond to these problems. Divide the participants into three teams, but keep the whole group together. Act out an exposure problem (below) and ask each team to develop a response. After they are through, have each team present their ideas to the group. This could be done as a role

playing activity. Finally, have the group as a whole discuss each problem. *(Focus, Relevance, Control)*

Discussion questions:

What changes can you make yourself?

What changes can you ask your boss for?

How could the pamphlets or the comic have been used in each situation?

Situation 1: While you are working in the fields, you see your friend take off his shirt when it starts getting hot.

Ask: What makes it difficult to wear a long-sleeved shirt at all times while working?

What can you do to avoid that problem? (*e.g.*, use a light weight shirt)

Situation 2: You need a drink of water or to go to the bathroom while working, but there is no water for washing your hands.

Ask: Why is there no water near the work site?

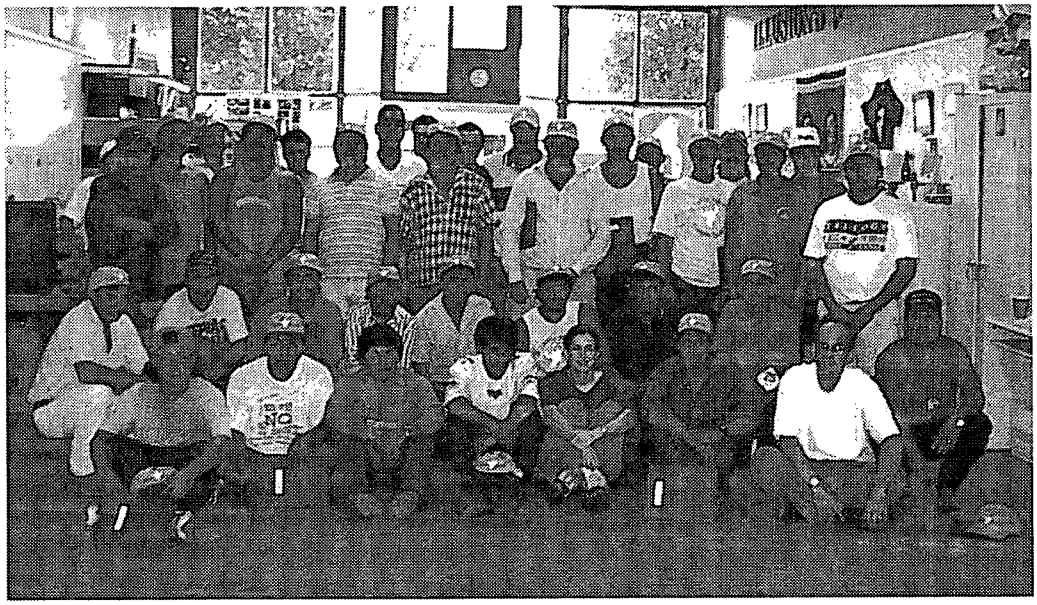
How could you get water? (*e.g.*, bring a container, ask the grower or crew leader)

Situation 3: You want to wear clean work clothes, but you only have 2 sets of clothes and you go to the laundromat once a week.

Ask: Is it possible to wear clean work clothes every day?

How can you do it? (*e.g.*, buy extra clothing at the flea market, find a way to wash your clothes during the week)

12. Closing remarks: it is the custom in many Latin American countries to have a formal closing to a special meeting. During the closing, participants may want to express their thoughts on the program, talk about why it was important to them personally, and urge their co-participants to commit themselves to accomplishing the work of a Promoter. It is an opportunity for the presenters and the hosts formally to thank the participants and offer words of encouragement. At this point, educational materials and any incentives (*e.g.*, hats, tee-shirts) should distributed to the Promoters. Describe the Promoter follow-up activities (Step 3: see next section) and explain that Safety Program staff will keep in touch and continue to provide information and materials as needed.



Participants at a PACE Promoter Safety Program

Step 3 - Promoter Follow-Up

Follow-up with farmworker Promoters continues the instructional process. This ongoing contact is important to encourage the Promoters' efforts, to answer questions that arise, and to distribute new or revised Safety Program materials. Visits with Promoters are often opportunities for further education ("teachable moments"), when the professional health educator can encourage Promoters to use and improve their skills.

Taking the time and effort to talk with Promoters about their efforts is a form of technical assistance that supports the Promoters' activities. Keep in mind that one goal of the Promoter program is capacity building for both the individual Promoters and for the farmworker community. Visiting Promoters is an opportunity to enhance their credibility with their peers, to recruit new participants for the Promoter Safety Program, and to tell Promoters about additional educational opportunities.

Sample Promoter Follow Up sheets are located in the Appendix (English pages 61-63, Spanish pages 64-66). Using these or similar forms to record responses allows you to collect consistent data from each Promoter about information that was distributed and problems that were encountered.

Discuss the Promoter's experience

Promoter follow-up visits should be open-ended and informal. The primary purpose is to answer questions and to observe the progress that has been made in improving pesticide safety at the site. The visit provides an oppor-

tunity to troubleshoot problems and address misunderstandings that may have arisen since the session. The visit should also be a time simply to talk about the work that season and how the Promoters have used the instruction they received.

Distribute additional materials

You should carry extra copies of safety and health education materials as well as any new or revised items that might be useful. Be prepared for the possibility that a Promoter might ask for more specific information on a particular topic.

Offer encouragement

Make a point of recognizing the work the Promoters have accomplished and listening to any problems or frustrations they may have experienced. The follow-up visit is a reminder to the Promoters of the importance of their efforts and an opportunity to renew interest and enthusiasm.

Record experiences and observations

Ask Promoters to describe their interactions with co-workers when they talked about pesticide safety and shared information. Recording this information on the Promoter Follow-Up Sheets can be done during an informal interview with the Promoter about what worked and what did not. In the process, you will learn what educational materials are being used and why some are more popular than others. Remember to let the Promoters know that the interview is a way for you to learn from them.

Maintain contact with Promoters

Part of the Promoter Safety Program process is to maintain lines of contact between the Promoters and their original instructors. Because few farmworkers have phones or mailing addresses, plan on taking some time to visit them. The Promoters need to know how to contact their instructors in case they have a question or need a phone number or an office location. Lines of communication will be different for each Promoter. Be sure to provide several alternatives.

Involve the community-based organization

One of the best ways to maintain contact with Promoters is to encourage them to be actively involved in a Community-Based Organization. The Promoter Safety Program is designed to provide steps for farmworker participants to build their leadership capacity and play an active role in generating change in their community by accepting additional challenges and responsibilities.

Identify local resources

Promoters should be given contact and location information for health services, social services, and regulatory agencies in case of accident or injury. During the follow-up, they should be provided with updated information or additional resources to address issues as they arise. (See page 67 for a sample sheet for recording information about local agencies and organizations.) Be sure to determine if the numbers are toll-free and whether the organization has Spanish speaking operators.

Promote involvement in future Promoter Safety Programs

The Promoter Safety Program is not intended to be a "train the trainers" program, but participants may wish to become involved as project staff. Some Promoters may become interested in expanding the program and educating others to become resources in pesticide safety. The one-day Promoter Safety Program does not produce independent instructors, but rather encourages individuals to become resources for their community. These possibilities could be discussed with Promoters during follow-up visits.

Encourage participation in other leadership development activities

The Promoter Safety Program is intended to encourage individuals to pursue opportunities for further capacity building and leadership development. Future instructional opportunities may go beyond the issue of pesticide safety. Workshops on leadership, community organizing, and other health topics are a few examples of additional activities for which Promoters are prepared. Farmworker community-based organizations may be particularly helpful in identifying and hosting these activities and involving Promoters on an ongoing basis. Instructors should identify these kind of capacity building opportunities and bring them to the Promoters attention during follow-up visits.

References

PACE publications are marked with an asterisk [*].

Altman, D. G. "Sustaining Interventions in Community Systems: On the Relationship Between Researchers and Communities." *Health Psychology* 14 (1995): 526-536.

*Arcury, T. A. and S. A. Quandt. "Chronic Agricultural Chemical Exposure Among Migrant and Seasonal Farmworkers." *Society & Natural Resources* 11 (1998a): 829-843.

*Arcury, T. A. and S. A. Quandt. "Occupational and Environmental Health Risks in Farm Labor." *Human Organization* 57 (1998b): 331-334.

*Arcury, T. A., C. K. Austin, S. A. Quandt, and R. M. Saavedra. "Enhancing Community Participation in Intervention Research: Farmworkers and Agricultural Chemicals in North Carolina." *Health Education & Behavior* 26 (1999a): 563-578.

*Arcury, T. A., S. A. Quandt, C. K. Austin, J. Preisser, and L. F. Cabrera. "Implementation of EPA's Worker Protection Standard Training for Agricultural Laborers: An Evaluation Using North Carolina Data." *Public Health Reports* 114 (1999b): 459-468.

*Arcury, T. A., S. A. Quandt, C. K. Austin, and L. F. Cabrera. "An Environmental Injustice." *The Journal of Common Sense* 5 (1999c): 13-17.

*Austin, C. K., T. A. Arcury, S. A. Quandt, and L. F. Cabrera. "Trabajadores Agrícolas y Plaguicidas en Carolina del Norte." *Boletin de RAPAM* 27 (1999): 8-9.

*Austin, C. K., T. A. Arcury, S. A. Quandt, J. Preisser, and L. F. Cabrera. "Training Farmworkers about Pesticide Safety: Issues of Control." *Journal of Health Care for the Poor and Underserved* (2000), in press.

Blair, A. and S. H. Zahm. "Agricultural Exposures and Cancer." *Environmental Health Perspectives* 103:205-208.

Environmental Protection Agency. "Pesticide Worker Protection Standard Training." Office of Pesticide Programs. (1992).

Green, L. W. and M. W. Kreuter. *Health Promotion Planning: An Educational and Environmental Approach*. Mayfield, Mountain View, (1991).

Grieshop, J. I. "Transnational and Transformational: Mixtec Immigration and Health Beliefs." *Human Organization* 56 (1997): 400-407.

Israel, B. A., B. Checkoway, A. Schulz, and M. Zimmerman. "Health Education and Community Empowerment: Conceptualizing and Measuring Perceptions of Individual, Organizational and Community Control." *Health Education Quarterly* 21 (1994): 149-170.

Israel, B. A., A. J. Shulz, E. A. Parker, and A. B. Becker. "Review of Community-based Research: Assessing Partnership Approaches to Improve Public Health." *Annual Review of Public Health* 19 (1998): 173-202.

Kurtz, J. R., T. G. Robins, and M. A. Schork. "An Evaluation of Peer and Professional Trainers in a Union-based Occupational Health and Safety Training Program." *Journal of Occupational and Environmental Medicine* 39 (1997): 661-671.

Mines, R., S. Gabbard, and A. Steirman. "A Profile of US Farm Workers: Demographic, Household Composition, Income and Use of Services." Based on data from the National Agricultural Workers Survey (NAWS). Office of the Assistant Secretary for Policy, prepared for the Commission on Immigration Reform. US Department of Labor, Washington, DC, (1997).

Moses, M. "Pesticide-related Health Problems of Farmworkers." *AAOHN Journal* 37 (1989): 115-130.

Perez, C. A. "Participatory Research: Implications for Applied Anthropology." *Practicing Anthropology* 19 (1997): 2-7.

Plaut, T., S. Landis, and J. Trevor. "Enhancing Participatory Research with the Community Oriented Primary Care Model: A Case Study in Community Mobilization." *The American Sociologist* 23 (1992): 56-70.

*Quandt, S. A., T. A. Arcury, C. K. Austin, and R. M. Saavedra. "Farmworker and Farmer Perceptions of Farmworker Agricultural Chemical Exposure in North Carolina." *Human Organization* 57 (1998a): 359-368.

*Quandt, S. A., C. K. Austin, T. A. Arcury, M. E. Summers, and H. N. Martinez. "Pesticide Safety Training Materials for Farmworkers: An Annotated Bibliography." The University of North Carolina at Chapel Hill Center for Urban and Regional Studies, Chapel Hill, NC, (1998b).

*Quandt, S. A., T. A. Arcury, C.K. Austin, and R.M. Saavedra. "Preventing Farmworkers' Exposure to Agricultural Chemicals: Use of the PRECEDE-PROCEED Planning Framework to Develop an Intervention." North American Agromedicine Consortium Annual Meeting, Raleigh, NC, (1999a).

*Quandt, S. A., C. K. Austin, T. A. Arcury, M. E. Summers, and R. M. Saavedra. "Agricultural Chemical Safety Training Materials for Farmworkers: Review and Annotated Bibliography." *Journal of Agromedicine* 6 (1999b): 3-24.

*Quandt, S. A., T. A. Arcury, C. K. Austin, and R. M. Saavedra. "Chemical Exposure among Seasonal and Migrant Farmworkers: Community-Based Epidemiology." *The Toxicologist* 48 (1999c): 304.

*Quandt, S. A., T. A. Arcury, J. Preisser, D. Norton, and C. K. Austin. "Migrant Farmworkers and Green Tobacco Sickness: New Issues for an Understudied Disease." *American Journal of Industrial Medicine* 37 (2000): 307-315.

*"The PACE Project. El Terror Invisible." Winston-Salem, NC , Wake Forest University School of Medicine, Dept. of Family and Community Medicine, (2000).

Vaughan, E. "The Socioeconomic Context of Exposure and Response to Environmental Risk." *Environment and Behavior* 27 (1995): 454-489.

Wallerstein, N. and H. L. Rubenstein. "Teaching About Job Hazards: A Guide for Workers and Their Health Providers." American Public Health Association, Washington, DC, (1993).

Watkins, E. L., C. Harlan, E. Eng, S. Gansky, D. Gehan, and K. Larson. "Assessing The Effectiveness of Lay Health Advisors with Migrant Farm Workers." *Family and Community Health* 2 (1994): 72-87.

Weinger, M. and M. Lyons. "Problem-solving in the Fields: An Action-oriented Approach to Farmworker Education about Pesticides." *American Journal of Industrial Medicine* 22 (1992): 677-690.

Appendix

Apéndice

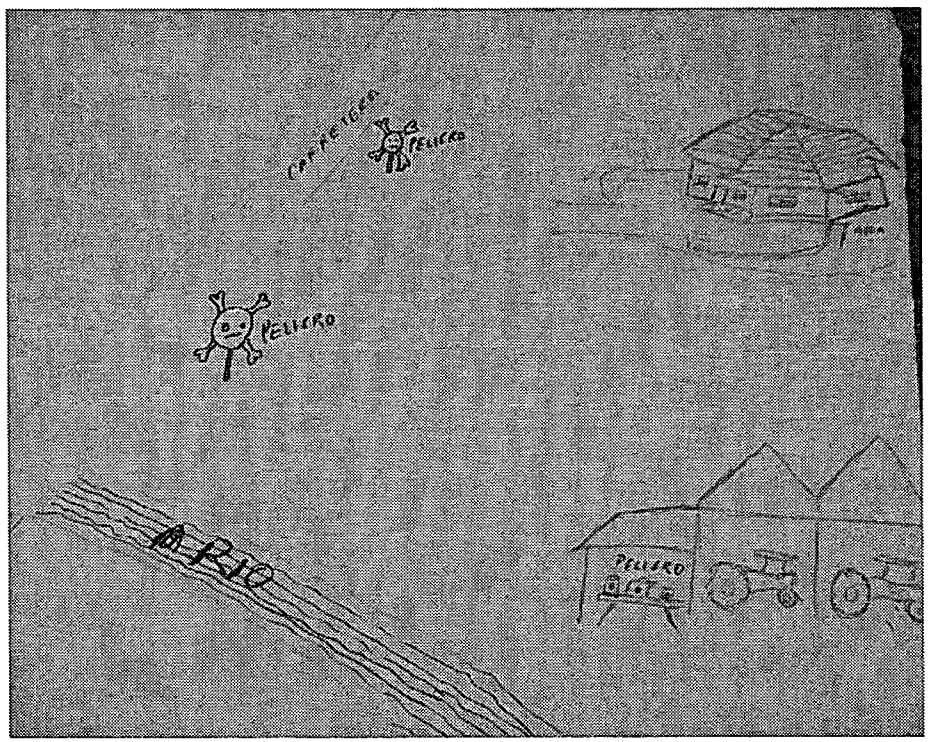
Fact Sheets

The Fact Sheets that follow are one-page overviews of ten of the pesticide safety concepts required by the Worker Protection Standard, with simple bulleted messages and an illustration. These Fact Sheets are helpful for stimulating and supplementing discussion during the session. They may also be used by the Promoters as they share information with their co-workers and families. The Fact Sheets are numbered for ease of referencing during the Promoter Safety Program. For example, during a discussion, ask the group to look at and comment on Fact Sheet #7, "Exposure to Residues."

Agricultural Chemicals at Work

Facts:

- Agricultural chemicals are used to kill pests and weeds and control crop diseases. But they can also harm people!
- Being exposed to agricultural chemicals can make you sick, injure you, and even threaten your life.
- Agricultural chemicals are sprayed by hand, from tractors, and from planes.
- Agricultural chemicals can be found on plants, in the soil, on equipment, in irrigation canals, in storage areas, and on work clothes.

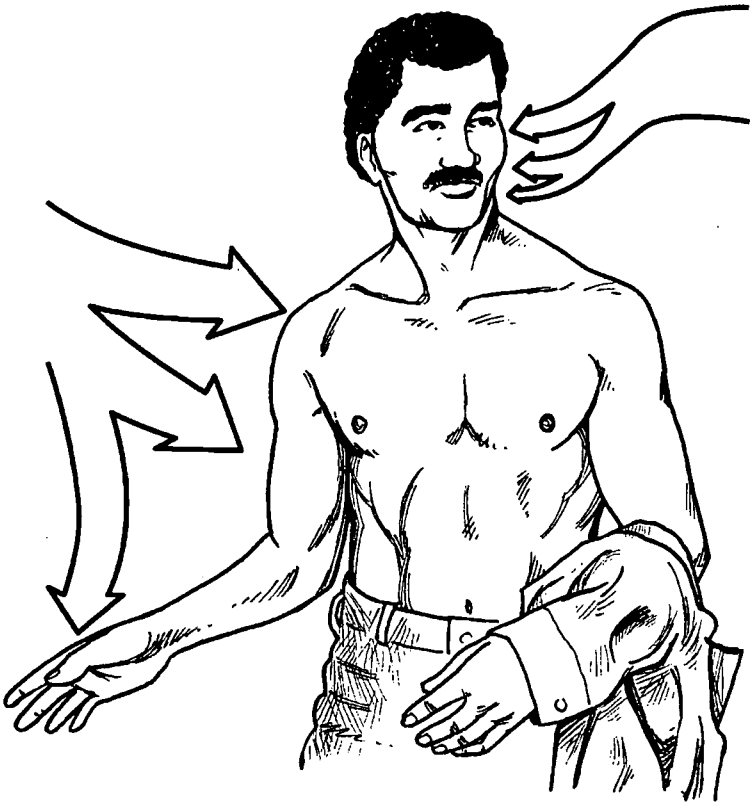


Agricultural Chemicals Can Enter Your Body

Facts:

- Agricultural chemicals can enter your body by:
  - ➢ Getting on your skin
  - ➢ Breathing them in
  - ➢ Swallowing them
  - ➢ Getting them in your eyes

- The most common way that agricultural chemicals can enter your body is by getting on your skin.



Immediate Effects

Facts:

- There are many different kinds of immediate effects from being poisoned with agricultural chemicals.

Symptoms of Agricultural Chemical Poisoning:

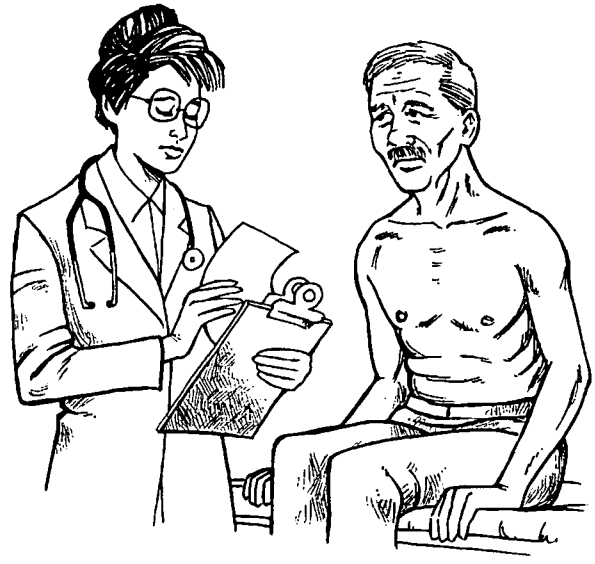
- Skin rashes
- Irritation of nose, throat, or eyes
- Dizziness, nausea, throwing up
- Headaches
- Muscle cramps
- Difficulty breathing, chest pain
- Sweating more than usual
- Drooling
- Very small pupils in eyes
- Blurred vision

- Working in tobacco can also cause many of these same symptoms (stomach cramps, difficulty breathing, nausea, vomiting, and dizziness). Make sure you tell a doctor if you think you were exposed to agricultural chemicals!
- Becoming dehydrated can also cause shortness of breath, disorientation, and fainting.

Long-term, Chronic Effects

Facts:

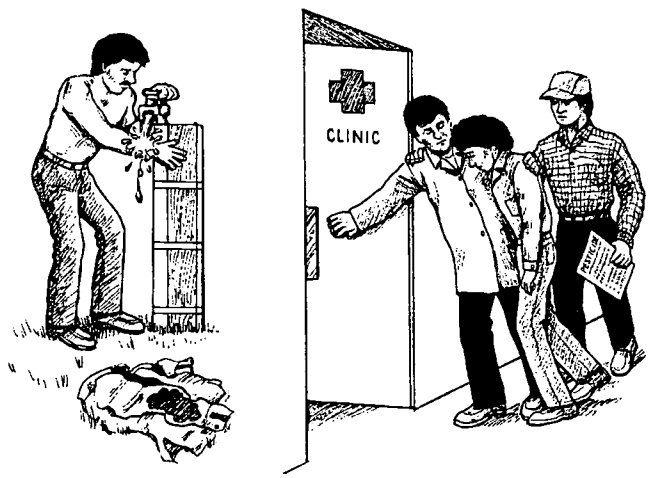
- Chronic health effects result from long-term, low levels of exposure, as well as from short-term, concentrated exposure.
- In scientific tests with animals and epidemiological studies with people, agricultural chemicals caused the following problems:
  - ➢ Cancer
  - ➢ Sterility
  - ➢ Miscarriages and birth defects
  - ➢ Damage to the liver and other organs
- Not much is known about the long-term effects to farmworkers of being exposed to agricultural chemicals. Some farmworkers believe that they were very seriously injured by chronic exposure, but more information needs to be collected.



If Someone Is Sick or Injured

Facts:

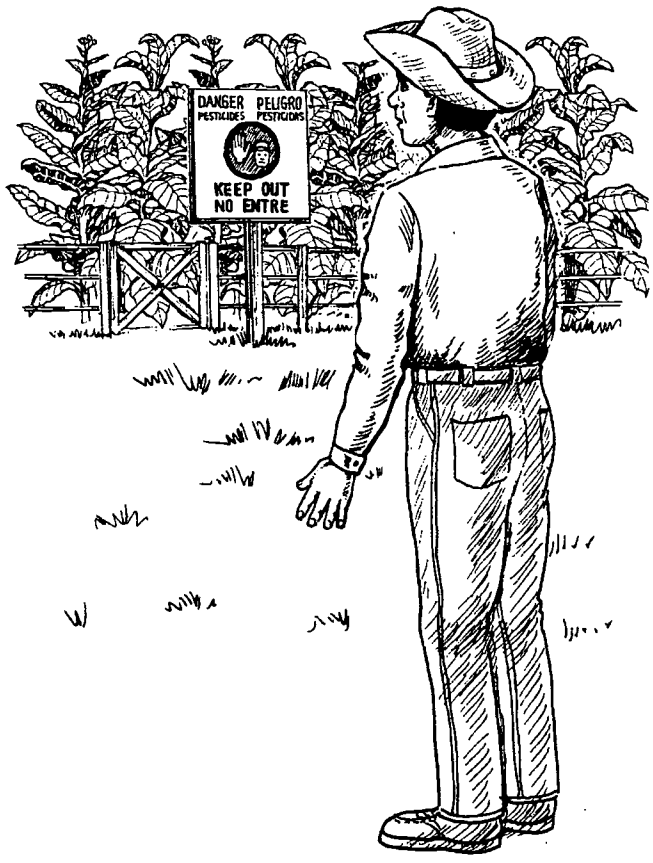
- If you are sprayed or have chemicals spilled on you, you need to:
  1. Take off contaminated clothes.
  2. Wash your body with soap and water.
  3. If you feel sick, go to a clinic or emergency room right away.
- If someone swallows the chemicals by accident, get medical attention immediately.
- If someone is sick from breathing the chemicals, get them to fresh air and loosen their clothes.
- If you get any of the chemical in your eye, rinse your eye for several minutes and then go to a clinic or emergency room.
- If you get sick or injured because of agricultural chemicals at work, your employer is legally required to take you to get medical help and to bring along the name of the chemical used.



Avoiding Direct Contact

Facts:

- Do not enter areas where agricultural chemicals are being applied.
- Get out of the fields immediately if the wind carries the spray to where you are working.
- Stay out of areas where you see a "No Entry" sign.
- Check with your employer before going into areas that were recently sprayed.
- Your employer is legally required to tell you or put up a sign if the restricted entry interval has not expired.



Exposure to Residues

Facts:

- Agricultural chemicals that are applied to the fields remain on the plants in a transparent form called residues. You may not be able to see, feel, smell, or taste the chemicals, but you are being exposed.
- The employer must wait a defined period of time before letting workers back into the field. This is called the "Restricted Entry Interval." Even after the Restricted Entry Interval, however, it is not completely safe. The fields still have pesticide residues on the plants that can be dangerous if absorbed or ingested.

Protective Clothing

Facts:

- You can protect your body from residues or spraying by wearing clothes that cover you completely, including:
  - ➢ A long-sleeved shirt
  - ➢ Long pants
  - ➢ A hat with a brim
  - ➢ Gloves
  - ➢ A hat or handkerchief that covers your neck
  - ➢ Shoes and socks
- Wearing clothing that covers your whole body will reduce the possibility of being contaminated by pesticide residues, as well as of developing sun poisoning or green tobacco sickness, including all their short and long term effects.
- Cotton clothes let the outside air circulate to your skin while shielding the skin from the direct sunlight and reducing dehydration.

Washing Your Hands in the Field

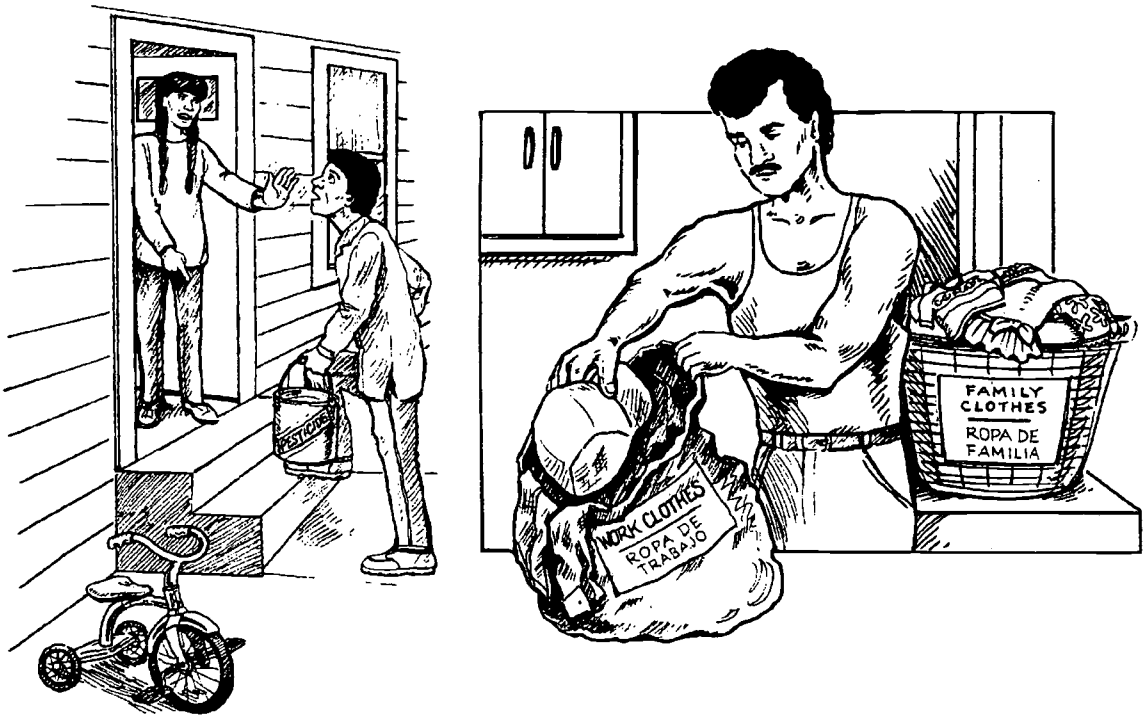
Facts:

- Pesticide residues are always present in the fields. While working in the fields your hands are exposed to pesticide residues, which you then carry from the fields. Washing your hands with soap and cold or hot water will rinse the pesticide residues off your hands.
- Washing your hands when you leave the field will keep you from carrying the residues on your hands to your home. Before eating, drinking, smoking, or going to the bathroom while at your workplace, you need to wash your hands to keep the pesticides from contaminating your body.
- It is the employer's legal responsibility to provide a hand washing basin with water, disposable towels and soap within 1/4 mile of work.
- You should never eat in the fields. Pesticide residues are always in the fields, and you can contaminate yourself through your mouth by eating in areas affected by pesticides.

Protecting yourself at Home

Facts:

- When you leave the field, the clothes you are wearing and your exposed skin have pesticide residues.
- Shower and wash your hair after work every work day.
- Wash work clothes before using them again.
- Keep dirty work clothes separate from the rest of your clothes and your family's clothes. Wash them separately. Keep separate labeled boxes for clothes.
- Never bring pesticide containers or pesticides into the home.



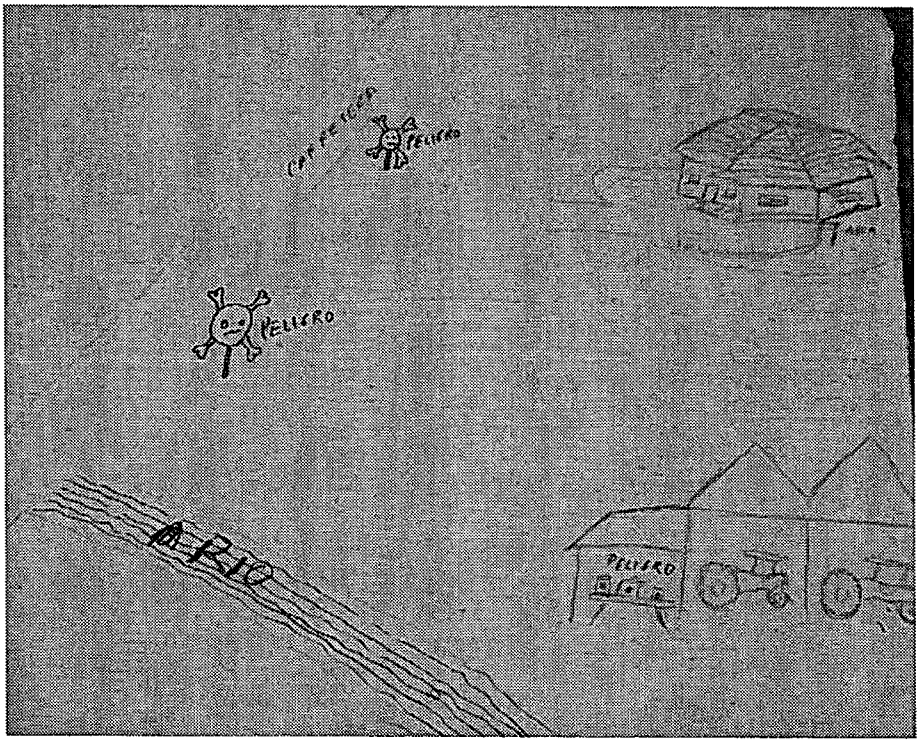
Hojas Informativas

Las hojas informativas que se presentan a continuación son resúmenes de una página de diez de los conceptos de seguridad sobre los pesticidas con mensajes distintivos y un dibujo. Estas hojas informativas son de utilidad para estimular y complementar el diálogo durante la sesión. Los promotores también pueden utilizarlas para compartir información con sus familiares y compañeros de trabajo. Las hojas informativas están enumeradas para facilitar su uso como referencia durante el entrenamiento para los promotores sobre seguridad ocupacional. Por ejemplo, durante un diálogo pídale al grupo que consulte y comente sobre la hoja informativa No. 7, "La Exposición a Residuos."

Los productos químicos agrícolas en el trabajo

Datos:

- Los productos químicos agrícolas se utilizan para matar a las plagas y a las hierbas y para controlar las enfermedades de la cosecha. Pero, también pueden ¡dañar a las personas!
- La exposición a los productos químicos agrícolas puede ocasionar que usted se enferme, lesione y hasta poner en peligro su vida.
- Los productos químicos agrícolas se rocían a mano, con un tractor o desde aviones.
- Los productos químicos agrícolas se pueden encontrar en las plantas, en la tierra, en el equipo, en los canales de irrrigación, en áreas de almacenamiento, y en la ropa de trabajo.



Los productos agrícolas químicos pueden introducirse en su cuerpo

Datos:

- Los productos químicos agrícolas se pueden introducir en su cuerpo de las siguientes maneras:
  - ➢ A través de la piel
  - ➢ Al respirarlos
  - ➢ Al tragarlos
  - ➢ Al meterse en sus ojos
- La manera más común en que los productos agrícolas se pueden introducir en su cuerpo es a través de la piel.

Efecto inmediatos

Datos:

- Existen muchos tipos de diferentes efectos inmediatos del envenenamiento por los productos químicos agrícolas.

Síntomas del envenenamiento por productos químicos agrícolas:

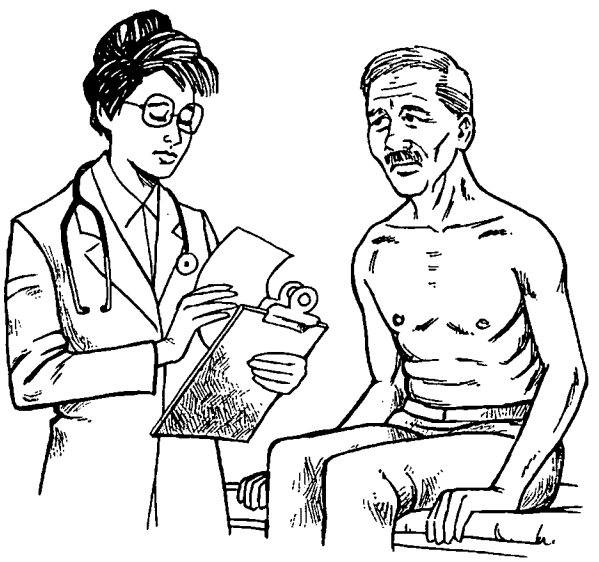
- ➢ Erupciones en la piel.
- ➢ Irritación de la nariz, garganta, u ojos.
- ➢ Mareo, nausea, vómito.
- ➢ Dolores de cabeza.
- ➢ Calambres en los músculos
- ➢ Dificultad para respirar, dolor en el pecho.
- ➢ Sudar más de lo acostumbrado.
- ➢ Babear.
- ➢ Las pupilas de los ojos están pequeñas.
- ➢ Vista borrosa

- El trabajar en el tabaco también puede ocasionar muchos de estos síntomas (cólicos, dificultad para respirar, nausea, vómito y mareo). ¡Cerciórese de decirle al doctor si usted cree que ha estado expuesto a productos químicos agrícolas!
- El deshidratarse también puede ocasionar que una persona sienta que le falta el aire, se sienta desorientada y se desmaye.

Efectos crónicos a largo plazo

Datos:

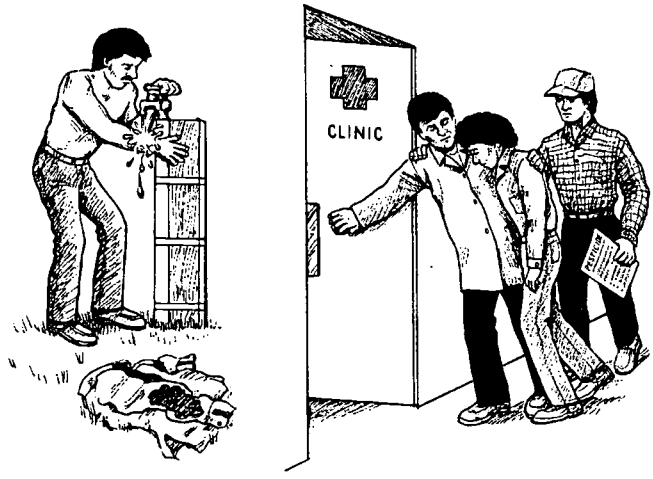
- Los efectos de salud crónicos son ocasionados por la exposición a bajos niveles a largo plazo, así como también por una exposición concentrada en un corto plazo.
- Las pruebas científicas con animales y los estudios epidemiológicos con las personas, indican que los productos químicos agrícolas han ocasionado los siguientes problemas:
  - ➢ Cáncer
  - ➢ Esterilidad
  - ➢ Abortos espontáneos y defectos de nacimiento
  - ➢ Daños al hígado y a otros órganos
- No se sabe mucho de los efectos en la salud de los trabajadores agrícolas a largo plazo por la exposición a productos químicos agrícolas. Algunos trabajadores agrícolas creen que fueron seriamente lesionados por una exposición crónica, pero es necesario recopilar más información.



Qué hacer si alguien se enferma o se lesiona

Datos:

- Si a usted lo rocían o lo salpican con productos químicos, usted necesita:
    1. Quitarse la ropa contaminada.
    2. Lavarse el cuerpo con agua y jabón.
    3. Si se siente mal, ir inmediatamente a la clínica o sala de emergencias.
- Si alguien accidentalmente se traga los productos químicos, inmediatamente tiene que recibir atención médica.
- Si alguien se enferma por respirar los productos químicos, lleve a la persona al aire fresco y aflójele la ropa.
- Si se le mete algo de los productos químicos a los ojos, enjuague su ojo durante varios minutos y después vaya a la clínica o sala de emergencias.
- Si usted se enferma o se lesiona con productos químicos agrícolas, su patrón está legalmente obligado a llevarlo a recibir atención médica y llevar consigo el nombre del producto químico utilizado.



Cómo evitar el contacto directo

Datos:

- No entre en las áreas en donde están aplicando los productos químicos agrícolas.
- Inmediatamente váyase del campo si el viento está acarreando el espray hasta donde usted está trabajando.
- Manténgase alejado de áreas que tienen un letrero que dice "No Entry" ("No entre").
- Pregúntele a su patrón antes de entrar a las áreas en donde recientemente rociaron.
- Su patrón está legalmente obligado a decirle a usted o a poner un letrero si el lapso en que no se puede entrar no se ha vencido.

Exposición a los residuos

Datos:

- Los productos químicos agrícolas que se aplican en los campos se quedan en las plantas en forma transparente, a esto se le conoce como residuos. Es posible que usted no pueda ver o sentir los productos químicos, pero usted está siendo expuesto.
- El patrón debe esperar un periodo de tiempo definido antes de permitir que regresen los trabajadores al campo. A esto se le conoce como "Intervalo de entrada restringido" ("Restricted Entry Interval"). Aún después de haber pasado el intervalo de entrada restringido, no es completamente seguro entrar. Los campos tienen todavía los peligrosos residuos de los pesticidas en las plantas que pueden ser peligrosos si se absorven o se ingieren.

Traer puesta ropa protectora

Datos:

- Usted puede proteger su cuerpo contra los residuos o el espray, poniéndose ropa que cubre completamente su cuerpo, esto incluye:
  - ➢ Camisa de manga larga
  - ➢ Pantalones largos
  - ➢ Un sombrero de ala
  - ➢ Guantes
  - ➢ Un sombrero o pañuelo que cubra su cuello
  - ➢ Zapatos y calcetines
- El traer puesta ropa que cubre su cuerpo por completo reducirá la posibilidad de contaminarse con los residuos de pesticidas, así como también que sufra de intoxicación o envenenamiento por el sol o que contraiga la enfermedad del tabaco verde, esto incluye todos los efectos a corto y a largo plazo.
- La ropa de algodón también permite que el aire del exterior circule a su piel, a la vez que proteje a su piel de la luz directa del sol y evita la deshidratación.

Lávese las manos cuando está en el campo

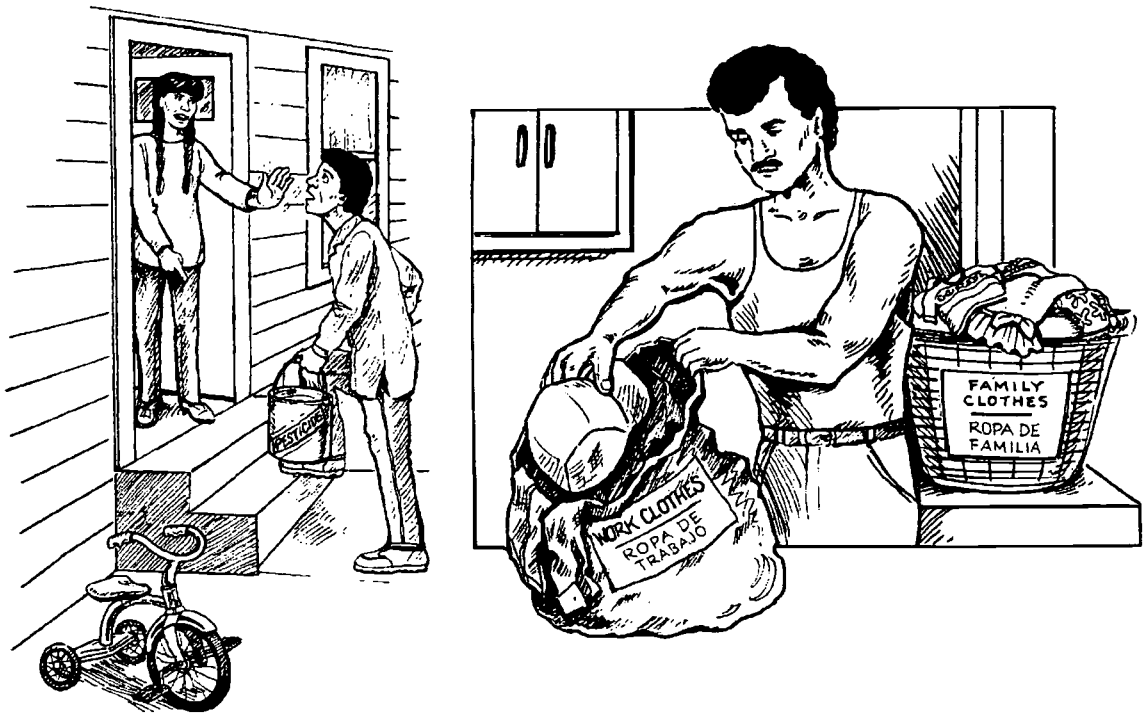
Datos:

- Los residuos de pesticidas se encuentran siempre en los campos. Al trabajar en los campos sus manos están expuestas a los residuos y se los lleva consigo. El lavarse las manos con agua fría o caliente le quitará los pesticidas de sus manos.
- El lavarse las manos cuando sale del campo evitará que los residuos en sus manos se los lleve a su hogar. Cuando usted esté en su trabajo, usted necesita lavarse las manos antes de comer, beber, fumar o ir al baño para evitar que los pesticidas contaminen su cuerpo.
- Es la obligación legal del patrón de proporcionar una tina con agua para lavarse las manos, jabón y toallas desechables. Todo esto debe estar a una distancia menor de 1/4 de milla de donde está usted trabajando.
- Nunca debe comer en los campos. Los residuos de los pesticidas siempre están en los campos, y usted se puede contaminar al ingerir los residuos cuando come en las áreas afectadas por los pesticidas.

Protéjase a usted mismo en el hogar

Datos:

- Después de salir del campo, la ropa que trae puesta y su piel que no está cubierta tienen residuos de pesticidas.
- Todos los días después del trabajo, dúchese y lávese el cabello.
- Lave su ropa antes de volver a ponérsela.
- Mantenga la ropa de trabajo sucia separada de su otra ropa y de la ropa de su familia. Lávela por separado. Tenga cajas etiquetadas para tener su ropa por separado.
- Nunca lleve recipientes de pesticidas o pesticidas a su hogar.



List of Educational Materials

Lista de materiales educativos

EPA Flip-Chart – "Protect Yourself from Pesticides: Safety Training for Agricultural Workers" and EPA Booklet – "Protect Yourself from Pesticides: Guide for Agricultural Workers."

El rotafolio con información de la Agencia de Protección Ambiental (US Environmental Protection Agency - EPA, por sus siglas en inglés) – "Protéjase a sí mismo: Entrenamiento sobre seguridad ocupacional para trabajadores agrícolas" y el panfleto de la EPA – "Protéjase a sí mismo: Entrenamiento sobre seguridad ocupacional para trabajadores agrícolas."

US Environmental Protection Agency
Office of Pesticide Programs
401 M Street, SW
Washington, DC 20460
703-305-7666

Video: "University of Idaho: Pesticide Safety Worker Protection"
"Universidad de Idaho: Protección de los trabajadores contra los pesticidas"

Agriculture Communications Center
University of Idaho
Moscow, ID 83844-2332

Video: "Chasing the Sun"/"Siguiendo el sol"
National Center for Farmworker Health
P.O. Box 150009
Austin, Texas 78715
512-312-2700

All of these materials can also be obtained from:

Todos estos materiales también se pueden obtener de:

Gempler's Master Catalog
100 Countryside Drive / P.O. Box 270
Belleville, WI 53508
1-800-382-8473
www.gemplers.com

Promoter Follow-up

Date:

Location:

Name of Promoter:

Name of Interviewer:

Education

What kind of advice have you given to your co-workers? What kind of advice did they request? How did they react? Did you run into any problems?

Have you given copies of the comic "El Terror Invisible" to any of your co-workers? Did they read it? How did they react?

Have you used any of the other educational materials? How did you use them? How did your co-workers react?

Work environment

Since the educational program, have there been any health emergencies or accidents at your work? Did anyone get sick? Do you think this was due to pesticides?

If someone was injured or sick, what did they do to get better? What did you do to help them?

Have you tried to improve conditions at work in any way? If so, how? If not, why not?

Were you able to convince other workers to wear long-sleeved shirts? If so, how? If not, why not?

Were you able to obtain water to wash your hands in the fields? If so, how? If not, why not?

Were you and your co-workers able to wear clean work clothes every day? If so, how? If not, why not?

Responses to the Promoter Safety Program

What was the most useful part of the educational program?

Is there any information that you wish had been included?

Do you plan on continuing to be a Promoter in your home town or village and at other places where you will work? How will you do this?

Would you like to participate in other educational programs in the future? What other areas of health and safety are you interested in?

Documento de seguimiento para los promotores

Fecha:

Lugar:

Nombre del promotor:

Nombre del entrevistador:

Educación

¿Qué tipo de consejos le ha dado a sus compañeros de trabajo? ¿Que tipo de consejos solicitaron? ¿Cómo reaccionaron? ¿Se encontró con algún problema?

¿Le ha entregado copias del libro de historietas "El Terror Invisible" a alguno de sus compañeros de trabajo? ¿Lo leyeron? ¿Cómo reaccionaron?

¿Ha utilizado algún otro material educativo? ¿Cómo los utilizó? ¿Cómo reaccionaron sus compañeros de trabajo?

Ambiente laboral

Desde que participaron en el programa educativo, ¿han tenido alguna emergencia médica o accidentes en su trabajo? ¿Alguien se enfermó? ¿Cree que fue debido a los pesticidas?

Si alguien se lesionó o se enfermó, ¿qué hicieron para que se mejorara? ¿Qué hizo usted para ayudarles?

¿Ha intentado de alguna manera mejorar las condiciones de trabajo? Si es así, ¿cómo? y en caso negativo, ¿por qué no?

¿Logró usted convencer a otros trabajadores de que se pusieran camisas con mangas largas? Si es así, ¿cómo? y en caso negativo, ¿por qué no?

¿Logró usted conseguir agua para lavarse las manos en el campo? Si es así, ¿cómo? y en caso negativo, ¿por qué no?

¿Lograron tanto usted como sus compañeros de trabajo ponerse ropa limpia todos los días? Si es así, ¿cómo? y en caso negativo, ¿por qué no?

Respuestas al programa de seguridad ocupacional para los promotores

¿Qué es lo que más le sirvió del programa educativo?

¿Hay alguna información que le hubiera gustado que se incluyera?

¿Tiene usted planes de continuar siendo un promotor en su pueblo o en otros lugares en donde trabaja? ¿Cómo le va a hacer?

¿Le gustaría participar en otros programas educativos en el futuro? ¿En qué otros aspectos de salud y seguridad ocupacional está usted interesado?

Local Resource Information Sheet

Hoja informativa sobre recursos locales

Make copies of this sheet and record information for each organization and agency in your area. Use a separate sheet for each so that outdated sheets can be replaced as information changes.

Saque copias de esta hoja y registre la información de cada organización y agencia en su área. Utilice una hoja por separado para cada una, para que las hojas con información que no esté vigente se puedan reemplazar conforme cambia la información.

_____

Name of organization/Nombre de la organización:

_____

Telephone/Teléfono ❒ Toll free/llamada gratis ❒ Bilingual/bilingüe

Address/dirección: _____

Street/calle: _____

City/ciudad: _____ ZIP/C.P.: _____

Contact person/persona a contactar:

_____ Position/puesto:_____

NOTES/NOTAS:

"El Terror Invisible" Comic

The comic "El Terror Invisible" was produced by the PACE Project in response to suggestions made by farmworkers at a series of community forums, at the PACE Advisory Committee meetings, and by the staff of the North Carolina Farmworkers' Project. The comic focuses on the issue of pesticide residues and responds to typical farmworker attitudes and concerns about safety. The ghost logo represents pesticide residues, something that you cannot see or feel but that can nonetheless cause harm. The format and the theme is intended to make the information accessible and compelling.

The comic is a tri-fold brochure, with the third panel on Side 2 forming the cover. Use local contact information to fill in the second panel on Side 2. You are welcome to duplicate the comic, but please include the copyright notice at the bottom of the middle back panel.

A digital version of the comic can be obtained by contacting:

Thomas A. Arcury, PhD
Department of Family and Community Medicine
Wake Forest University School of Medicine
Medical Center Boulevard
Winston-Salem, NC 27157-1084

Phone: 336-716-9438
FAX: 336-716-3206
email: tarcury@wfubmc.edu

To reproduce the comic, you may cut and paste the pages on legal size (8½"x14") paper in the order shown on page 70.

Libro de historietas *"El Terror Invisible"*

El libro de historietas (cuento) "El Terror Invisible" fue producido por el proyecto PACE en base a las sugerencias que hicieron los trabajadores agrícolas en los foros de la comunidad, el Comité de Asesoría de PACE y el personal del Proyecto de Trabajadores Agrícolas de Carolina del Norte. El libro de historietas se enfoca en el aspecto de residuos de pesticidas y se refiere a las actitudes típicas de los trabajadores agrícolas y las inquietudes sobre la seguridad ocupacional. El logotipo de fantasma representa los residuos de pesticidas, algo que no se puede ver ni sentir pero que no obstante pueden causar daños. El formato y el tema han sido creados para que la información sea más accesible y atractiva.

El cuento es un folleto de tres secciones, la cubierta es la tercera sección del lado 2. Utilice la información sobre los recursos o servicios locales para completar la información en la segunda sección del lado 2. Puede sacar todas las copias que guste, pero por favor incluya la información sobre los derechos de autor (copyright) que se encuentra en la parte inferior del panel central trasero.

Puede obtener una versión digital poniéndose en contacto con:

Thomas A. Arcury, PhD
Department of Family and Community Medicine
Wake Forest University School of Medicine
Medical Center Boulevard
Winston-Salem, NC 27157-1084

Teléfono: 336-716-9438
FAX: 336-716-3206
email: tarcury@wfubmc.edu

Para sacar copias del libro de historietas, puede cortar y pegar las páginas en hojas de tamaño oficio (8½"x14") y colocarlas en el siguiente orden:

Side 1/ Lado 1

Los pesticidas en las plantas son invisibles.

Pero son ¡muy peligrosos!

Side 2 / Lado 2

Para más información:

Local Contact Information

Keeping workers safe from pesticide exposure

Producido por El Proyecto PACE (Previniendo el Contacto con Pesticidas entre los Trabajadores Agrícolas)

Dibujos por Tim Rickard


¡Miguel está enfermo!
¿Qué le pasa?


Él es otra víctima del terror invisible
Antonio, "El promotor"


Hace poco fuí a un entrenamiento...

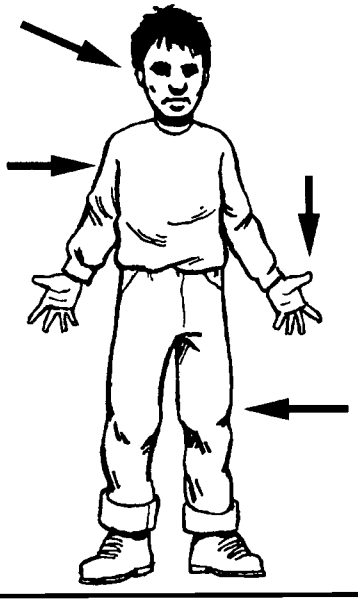

...en el que aprendimos sobre los residuos de los pesticidas.

Los pesticidas en las plantas son invisibles.

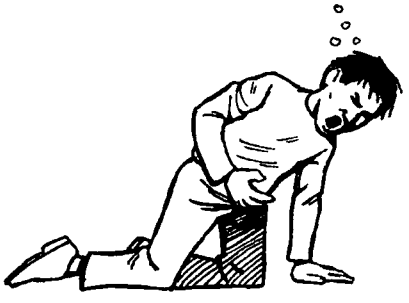
Los residuos se quedan en las plantas por muchos días.

Y aunque no los puedes ver ni oler, de todas maneras hacen que te enfermes.

Cuando tocas las plantas, estás en contacto con los residuos.



Aunque el contacto sea con pequeñas cantidades, el residuo se va acumulando con el paso del tiempo.



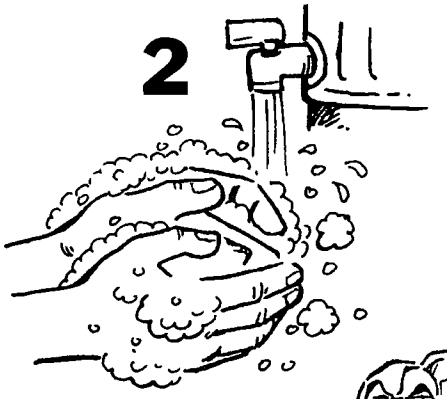
Pero son ¡muy peligrosos!


¡Yo nunca me enfermo!
¡Jaja!
Es posible que durante varios años no se vean los efectos.
Cáncer
Esterilidad
Daño a bebés que aún no han nacido.
Todos los que trabajan en el campo corren el riesgo.
¿Cómo podemos protegernos?

Lávate las manos en el campo,
antes de comer, beber o ir al baño.

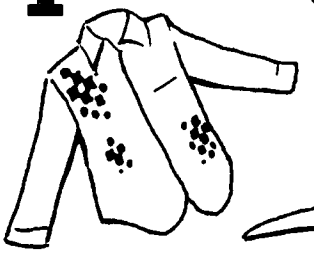
Siempre lleva puesta camisas de manga larga.

2



3

1



Lava la ropa de trabajo antes de volvértela a poner.

¡Si te toca, te toca! ¿Por qué cuidarse?

Porque Tú tienes control y puedes reducir las probabilidades de enfermarte.

Para mayores informes o solicitar ayuda, por favor comunícate con:

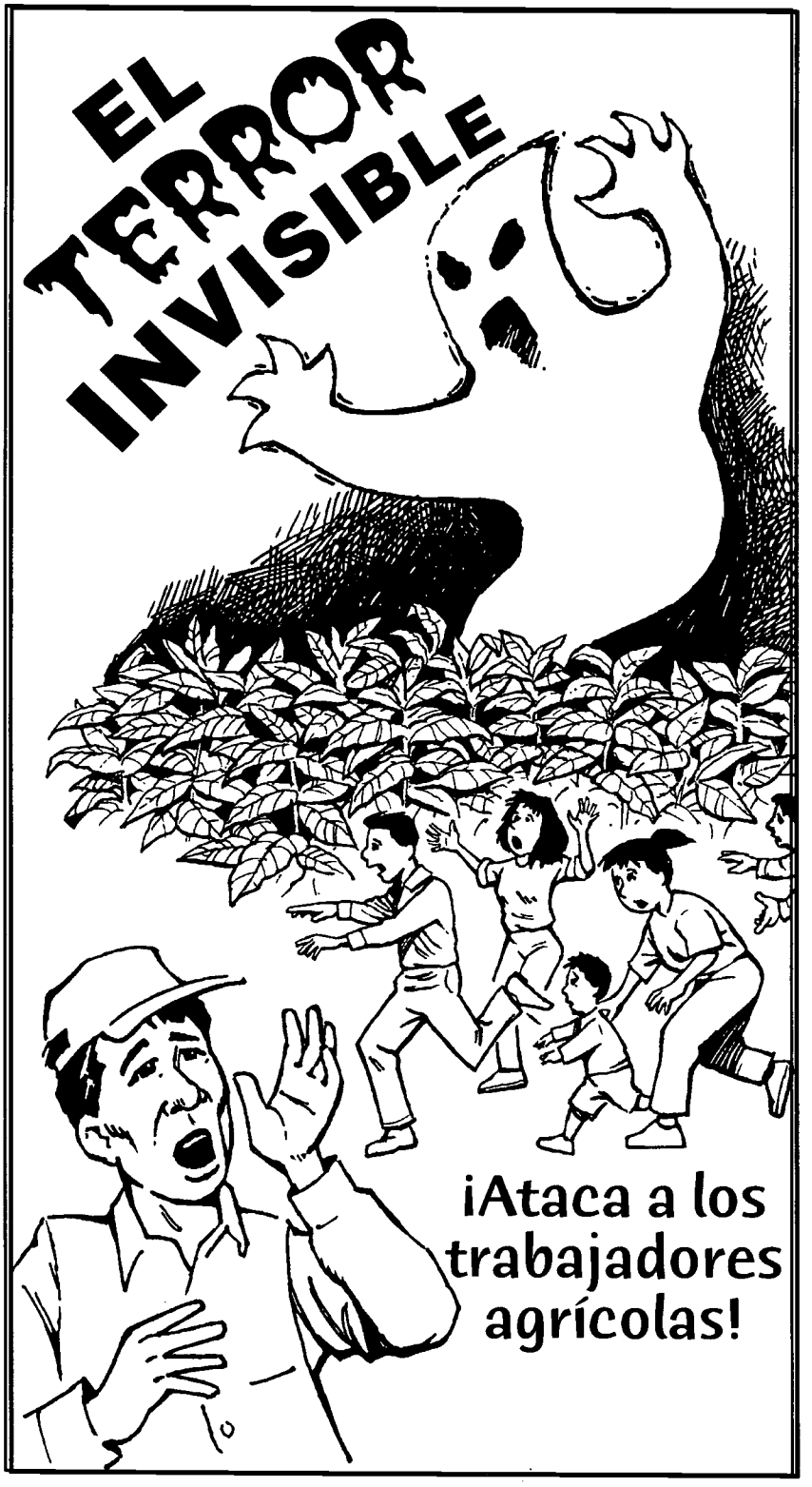
Para más información:

Keeping workers safe from pesticide exposure

Producido por El Proyecto PACE (Previniendo el Contacto con Pesticidas entre los Trabajadores Agrícolas)

Dibujos por Tim Rickard

Department of Family and Community Medicine
The PACE Project
Medical Center Blvd., Winston-Salem, NC 27157-1084


EL TERROR INVISIBLE
¡Ataca a los trabajadores agrícolas!

NOTICE

REPRODUCTION BASIS

☐ This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

☑ This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").