

## **1. Title:**

### **Development of Spanish Language Educational Materials to Manage Pests in Immigrant Farmworker Housing**

## **2. Project Leader**

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## **3. Cooperators:**

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## **4. Abstract:**

The Cornell Farmworker Program's mission is "to address the needs of farmworkers and their families through research, education and extension". This IPM effort explored how to assist farmworkers in safely and effectively managing pests in their living quarters. Pest management in this setting may be complicated by several factors, including poor physical infrastructure, language and literacy barriers, and constant fluctuations in the labor force. To address the pest management needs of farmworkers, we set out to identify resources that are currently available for Spanish speaking, low literacy populations. In the absence of appropriate educational materials, our goal was to develop new, highly visual outreach materials and engaging workshops to help farmworkers manage pests.

We discovered that limited educational materials exist to assist Spanish-speaking farmworkers in pest management, and we created an annotated resource list of these materials for reference. On-site farm visits revealed a perception that pest management by farmworkers themselves was not possible, making this an important, but overlooked topics for educational outreach. Farmworkers requested that the Cornell Farmworker Program (CFP) create Spanish language skits to outline the life cycle and control of common pests such as cockroaches and bed bugs. These skits have been used by the CFP in the past during on-farm emergency planning workshops to give life to communicated ideas. To this end, the CFP developed both Spanish ("Las Plagas Molestosas") and English (Those Pesky Bugs) language educational skits recorded to DVD to show to farmworkers, farmers, and health educators. These skits are supplemented by handouts on bed bugs and cockroaches, which include information about management options.

## **5. Background and justification:**

In New York State, farmworkers frequently originate from Mexico and Guatemala. Despite the importance of their work and contribution to the economy of New York, resources designed to assist these individuals in their daily lives are extremely limited. At the same time, many farmworkers are extremely vulnerable due to their undocumented status, forcing them to live in social, geographic and linguistic isolation with few excursions from the farm.

The Cornell Farmworker Program (CFP) addresses the needs of farmworkers and their families through research, education and extension. This includes on-farm tutoring in English as a Second

Language, emergency planning and preparation, as well as workshops on chemical safety on dairy farms and driving in New York State. However, one gap in the education for farmworkers is information on how to manage pests in their living quarters. This issue has become increasingly important in recent years with the resurgence of socially transmitted pests such as bed bugs.

Pest management in farmworker housing is complicated by several issues. First, the quality of housing provided to employees is not well regulated, forcing some workers to live in otherwise uninhabitable circumstances with torn or broken window screens, leaking pipes, mold, poor construction, and general disrepair that contribute to pest entry and reproduction. Second, dormitory style housing and overcrowding of facilities can lead to pest infestations. This is true within a site and between sites when new workers inadvertently transport pests. This is exacerbated by a practice in farmworker housing where a single bed may be shared by a night shift worker and a day shift worker. Third, language and literacy barriers can impede education efforts. Delivery of written materials, even in the native language of workers, might fail to communicate ideas when literacy is low, and workers have little time to read due to long work shifts (up to 12 hours). Furthermore, incorrect translation can lead to confusion or result in unexpected outcomes.

To address these challenges, the CFP collaborated with the New York State IPM Program to develop Spanish and English language skits and printed educational resources for farmworkers to be distributed through engaging, on-farm workshops. We are also exploring opportunities to show both the Spanish (“*Las Plagas Molestosas*”) and English (“*Those Pesky Bugs*”) language educational skits in other locations frequented by farmworkers, such as waiting areas in farmworker health clinics, immigration clinics, and visits of the Mexican and Guatemalan mobile consulates.

This project has the potential to impact the general health and well-being of farmworkers in all commodities by decreasing worker absences due to pest related illnesses.

## **6. Objectives:**

1. Identify and evaluate current educational materials available for pest management in farmworker housing
2. Adapt or develop new materials for farmworkers that are easy to understand, highly visual, and available in both English and Spanish
3. Field test materials on farms and modify them as needed
4. Provide hands-on training sessions for farmworkers and disseminate materials widely
5. Evaluate project impact

## **7. Procedures:**

1. *Identify and evaluate current educational materials available for pest management in farmworker housing.* In this preliminary step, we conducted a web search to identify what resources are available for farmworker pest management. This investigation utilized common search engines and key words, and also included a detailed look at cooperative extension websites from various states and sites related to farmworker health. We

examined the few relevant materials for content, and created an annotated bibliography of resources.

2. *Adapt or develop new materials for farmworkers that are easy to understand, highly visual, and available in both English and Spanish.* We reviewed existing pest management information for farmworkers and developed a Spanish-language PowerPoint presentation to address common questions farmworkers might have and solutions that are accessible to this population. We reviewed the initial draft with NYS IPM staff and incorporated their recommendations. In follow-up conversations with farmworkers, they raised the possibility of creating Spanish language skits that could communicate the information included in the PowerPoint presentation. These skits could be recorded onto DVDs and shared with other farmworkers. That suggestion was based on the success of the emergency planning DVDs that are currently available from the CFP. A script for the skit was created using previous recommendations, and a simple scenario of two farmworker parents discussing pest problems in their homes was filmed. The skit covers identification of pests, life cycles, and successful ways to eliminate cockroaches and bed bugs.
3. *Field test materials on farms and modify them as needed.* The CFP developed skits focused on pest identification, eradication and management. The skits “*Estas Plagas Molestosas*” were field tested with farmworkers at four dairy farms in Cortland, Cayuga, Tompkins, and Schuyler counties. The first version of “*Estas Plagas Molestosas*” was also shown at the Mexican mobile consulate visit to Geneva, NY. This extended the field testing to include workers on fruit and vegetable farms as well as dairy farms coming from various parts of the state. Farmworkers were asked to evaluate the usefulness of this information in terms of their potential implementation of practices. We revised the presentation to include information on where farmworkers could purchase supplies such as mattress encasements and interceptor devices, and included a cost estimate from common retail stores. We also developed simple Spanish language handouts with basic information about bed bug and cockroach elimination. Lastly, the CFP produced an English version of the skits and handouts, and transferred the video materials to DVD.
4. *Provide hands-on training sessions for farmworkers and disseminate materials widely.* We have begun to share these materials during on-farm visits. In addition, materials will be distributed widely during mobile consulate days and during farmworker socials. These latter events are organized by the CFP to bring together workers from several farms in an area, and include games, music, refreshments and education. We are exploring how we might show the skits in the waiting rooms of the farmworker clinics associated with the Finger Lakes Community Health.
5. *Evaluate project impact.* At the beginning of each workshop, participants were asked in person about their current concerns with pests, how badly they are infested (rating scale 0-10 for each pest), and how pests are managed. At the end of the session, workers were asked how they would manage pests in the future. In addition, because the CFP is on site for other educational opportunities, staff can follow-up with workers several times a year to assess infestation levels and what techniques are being used to manage pests.

## 8. Results and discussion:

As a group, migrant farmworkers are highly vulnerable because they are socially, geographically and linguistically isolated. With limited time and resources to manage pests on their own, and a common lack of concern from farm owners, farmworkers are forced to live in otherwise uninhabitable circumstances. An extremely important outcome of this work is the development of materials to educate farmworkers about steps they can take to reduce exposure to pests that can cause allergies, asthma, food contamination and mental distress (bed bugs). The lack of current resources for farmworker pest management is highlighted by the annotated bibliography created for this project. Of the twenty publications we found (including resources that addressed management of either cockroaches or bedbugs), none were developed specifically for farmworkers and less than half were available in Spanish.

As part of this project we field-tested the initial video with approximately 50 farmworkers on four farms. The farmworkers were enthusiastic about the video content but suggested that we add specific information about costs and availability of mattress encasements and interceptor devices. We also showed the video in the waiting area for the Mexican mobile consulate during their three-day visit to Geneva, NY (July 31- August 2, 2014). Over 163 farmworkers from 48 locations in Central NY, Western NY, the Southern Tier, and the North Country attended the visit of the Mexican Consulate. During this event, Mexicans seeking documents from their home country (passports, national identification cards, etc.) typically spend 1-3 hours waiting for their paperwork, which provides an excellent opportunity to show the video to large numbers of farmworkers across the state.

After viewing the skits, the workers on one farm encouraged the CFP staff to facilitate a discussion with the farm owner about best management practices for reducing pests and preventing the reintroduction of pests in new housing. There was particular concern about the inability to eliminate pests from their current housing, which is in complete disrepair. Although the owner is planning to find newer housing for the workers, the project helped him to understand that many items in the current pest infested housing would need to be disposed of, including furniture and mattresses. The CFP/IPM project was a catalyst for informing the farm owner as well as the workers about the unreasonably poor state of housing. Consequently, we developed an English language version of the skit to share the information more broadly. This version will make the information available to English-speaking migrants as well as employers.

Considering that educational opportunities for pest management in farmworker housing are virtually non-existent, workshops that discuss and demonstrate IPM techniques could lead to adoption of these practices. To date an estimated 100 workers have viewed the video, and we are planning to incorporate the materials in the CFP's outreach toolkit. Materials will also be distributed and discussed during other outreach events, and workers will serve as multipliers when they bring information to other farms. We plan to share this information with CCE agricultural educators, farmers and service providers through statewide forums including the NYS Ag Society meetings, Dairy Operations Managers conference, NY Expo, and regional CCE dairy, fruit and vegetable trainings. Our outreach efforts will also include video showings at

locations farmworker frequent such as waiting areas for farmworker health clinics, immigration clinics, and visits of the Mexican and Guatemalan mobile consulates.

### **9. Project location(s):**

The skits “*Estas Plagas Molestosas*” were field tested with farmworkers at four dairy farms in Cortland, Cayuga, Tompkins, and Schuyler counties. The skits were also shown during the three-day visit of the Mexican Mobile Consulate to Geneva, NY. We anticipate that we will share these materials at trainings and workshops throughout the NYS. Current plans include making the materials available at Spanish language training session at fruit and vegetable schools in Niagara, Wayne and Orange County as well as at other CFP outreach activities planned for Wayne, Wyoming, Livingston, Cayuga, Cortland, Orleans and Onondaga counties. Consequently the project has implications for farmworkers in all commodities throughout the state and region.

### **10. Samples of Resources Developed:**

The resources developed through this project include: 1) a bibliography about Spanish language pest management educational materials; 2) a Spanish language DVD “*Estas Plagas Molestosas*” on pest identification and management; 3) an English language DVD “*Those Pesky Bugs*” on pest identification and management; 4) a Spanish language handout on how to manage bed bugs; and 5) a Spanish language handout on how to eliminate cockroaches. These materials are available upon request.