

# Developing tools to improve communication between farmers and farm workers around fruit farm practices

## Final report for ONE14-219

Project Type: Partnership

Funds awarded in 2014: \$14,986.00

Projected End Date: 12/31/2017

Region: Northeast

State: New York

Project Leader:

[James O'Connell](#)

Cornell Cooperative Extension

## Project Information

### Summary:

Much of the fruit industry in New York relies on migrant labor, mostly of Latin American origin, many of whom comprehend little or no English. Most farmers in the region do not speak Spanish and often find themselves unable to effectively communicate with their workers. In addition, there is not consistency in the labor pool, such that workers trained one year are back on the same type of farm the next year. As a result, directions are misunderstood, leading to incomplete or improperly completed tasks and decreasing overall farm efficiency and profit.

Jim O'Connell of Cornell Cooperative Extension of Ulster County and the Cornell Farmworker Program developed and tested farmer and farmworker friendly tools for fruit production that allow non-Spanish speaking farmers to effectively give instructions for specific production tasks to their Spanish speaking farmworkers. The tools consist of step-by-step videos of key tasks, in Spanish and English, and field guides, designed for workers with low or no literacy, reproducing the key farm production tasks (e.g. pruning, harvesting) that correspond to the video instructions for in-field reference. The tools were tested with both farmers and farmworkers to ensure that they are understandable, practical and effective.

Reception by farmworkers of the tools was positive. Much of the training they receive is "hands on," where the farmer or a foreman provides a brief demonstration on how to complete a task (e.g. pruning raspberries), has the worker perform the task under supervision, then leaves them to complete the task unsupervised. This type of training is easy for a farmer to implement and is often sufficient. The farmworkers that were involved in this project were eager to learn, found the guides to be a good supplement to the hands on training and liked that videos of the practices would be available online. With these tools, farmworkers were able to see the processes step by step from start to finish. One unintentional benefit of making the guides, was that a farmworker commented, "He would use them to help him practice his English."

The biggest on farm adaptation was one farm color coding their raspberries. Yellow

for summer raspberries (yellow like the sun) and red for fall raspberries (red like the autumn leaves). This coding made it easier for farmworkers to identify the different types of raspberries as well as what type of pruning was needed.

## Introduction:

When researching the topic of farmworker guides, it was found that many of the guides were focused on pesticide safety. These materials were frequently posters, developed as part of the Agricultural Worker Protection Standard (WPS) and required to be displayed in a central on farm location. The main goal of these posters was to explain (with pictures) how to stay safe around pesticides and what to do in the event of an emergency (e.g. if a worker was accidentally exposed to pesticides).

From discussions with the Cornell Farmworker Program, it was learned that there was a low literacy rates among farmworkers. Discussing this topic further and relating it to international companies, where English is not their native language, and who sell assemble at home products, it was realized most of their instructions were picture based. Based on this information and the discussions, it was decided that the guides that Jim O'Connell intended to produce needed to be largely picture based. Further discussions with farmers indicated that color coding may also help. Tractor manufactures color code the fuel cap to match the fuel type (e.g. yellow for diesel, red for gasoline).

From these discussions and other related research, it was decided that the CCE fruit educator would develop a list of production practices for raspberry and grape farmers. This list will include production practices that are likely to be important to farmers, and will include practices where there is potential for error (e.g. pruning, harvesting). Farmers and farmworkers were interviewed to identify from this list the top practices that they feel that miscommunication due to language barrier is a concern.

## Project Objectives:

Jim O'Connell collaborated with farmers (Mike and Tammy Boylan of Wright's farm and Dave Schoonmaker of Saunderskill Farms) to identify key production practices of berry crops (particularly raspberries) that are a source of frequent miscommunication between the farmers and their Spanish speaking farm workers. He also worked with Sarah Dressel from Dressel Farms and Greg Esch, vineyard manager of Clinton Vineyards, to identify similarly miscommunicated practices in grapes. O'Connell also consulted with Cornell staff at the research farm in Geneva, to narrow the list of key practices.

Based on feedback received, the list of practices was narrowed to 8 key practices of: Pruning florican raspberries in the spring (i.e. dormant pruning), pruning primocane raspberries in the spring (i.e. dormant pruning), pruning florican raspberries in the fall (i.e. in season pruning), harvesting brambles, cane pruning grapes, spur pruning grapes, pruner sterilization (preventing the spread of crown gall), monitoring (including making a trap) for spotted wing drosophila.

One additional practice, scouting for grape berry moth, was made into a video. This video provides a brief explanation of grape berry moth (GBM) and what the fruit injury looks like. It was determined that actual scouting (i.e. collecting samples, calculating percent damage) was most likely to be done by a farmer or a hired pest scout, not a farmworker. As a result, there was no accompanying guide to the video.

## Cooperators

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## Research

### Materials and methods:

#### Spring 2014

Developed a list of production practices for raspberry and grape production that are: likely to be (a) important to growers and (b) where errors are likely to be made, if made would be problematic or costly, or if made would cause health/safety concerns for workers.

Surveyed raspberry and grape growers and farmworkers to narrow list down to 10-20 key practices.

Wrote a step by step narrative for each practice in English (e.g. text only word document).

Had narratives reviewed by extension staff and farmers for accuracy and ability to be comprehensible by farmers and farmworkers.

#### Summer 2014

Took photos demonstrating each practice, including tools needed.

Developed rough draft of pictorial representations of each practice with limited

verbiage for field use

Fall/Winter 2014-2015

Developed evaluation process for videos and field guides

Field tested drafts of field guides and videos with with primary collaborators.

Collected evaluations from growers and identify any changes that are needed.

Had narratives translated into Spanish.

Had Spanish versions reviewed by farm workers/practitioners for accuracy and comprehensibility

Visited Lake Erie Regional Grape Program and recorded grape pruning practices.

Spring 2015

Recorded videos of field production practices (e.g. pruning raspberries).

Incorporated comments from collaborators into field guides/videos.

Summer 2015

Visits with farmers and farmworkers to review guides/videos and receive feedback.

Fall/Winter 2015-2016

Annual fruit school, provided additional growers with draft versions of guides, asked for feedback.

Videos recorded in Lake Erie grape pruning were of a different style of pruning than growers use in the Hudson Valley.

Contacted Finger Lakes Regional Grape Program for permission to link to their pruning videos.

Spring 2016

Video re-shoots of field production practices (crown gall field sterilization pruners)

Replaced grape photos with illustrations in field guides. Illustrations were easier to understand.

Summer 2016

Visits with farmers and farmworkers to review guides/videos and receive feedback.

Contracted with a Digital Literacy Resource Educator to edit raw videos.

Fall/Winter 2016-Spring 2017

Contracted with fellow educator to provide Spanish audio on videos.

Final revisions to field guides and videos.

Contracted with graphic designer to create final versions of the guides.

Research results and discussion:

Practices that were important to growers, which if done wrong could cost them time and money to fix were the focus of this grant project. The focus was further narrowed to fruit crops, specifically grapes and raspberries since Jim O'Connell was the small fruit and grape educator for Cornell Cooperative Extension of Ulster County.

The list of practices developed was narrowed, based on feedback, to 8. Each was then described step by step and made into field guides. Practices were condensed based on commodity and similarity (e.g. raspberry pruning was condensed into one guide, as was grape pruning). In total, 5 guides were made.

Because of concern for the varying literacy levels among farmworkers, it was important the guides be largely picture based, replicating as close as possible what was done in the field. Videos were made to supplement the guides and serve as additional learning materials.

Initial discussion with farmworkers in vineyards indicated they wanted information on grape berry moth (GBM), an important pest of grapes in New York State. Workers

indicated that in some years, the level of damage from this pest (identified as GBM by the grower) was more severe than other years (and therefore they didn't always notice the damage) .

Based on this input, it was decided to create a video of how to scout for GBM (i.e. identify damage from GBM). However, in discussing this topic further, growers indicated they would either do the scouting (i.e. actual scouting with sample collection) or hire an IPM scout to do it for them. As a result, no guide was made to accompany the video.

It was also realized that farmworkers are eager to learn and want more information. Currently, they depend largely on their employers or literacy/family educators to provide them with additional information (aside from what they get on their own). They have expressed interest about receiving more crop related information from Cornell. Cooperative Extension currently relies on growers to disseminate information, and may need to further evaluate how to reach out to farmworkers.

The impact of the seasonality and the resulting narrow windows of opportunities to accomplish a list of tasks for this project was underestimated. Pruning of grapes generally happens in the late winter to early spring. Pruning of raspberries happens in spring or fall. Combined with multiple revisions to the guides and all the video recording and editing, it was necessary to extend the grant a full year.

The protocol for monitoring and trapping spotted wing *Drosophila*, was developed by Juliet Carroll, Fruit IPM Coordinator, NYS IPM Program. Recently, a company developed a trap with a synthetic lure, based on that protocol. It was decided to continue with the original protocol since not every grower would buy the traps and because the English narrative had already been written and translated.

Video practices of grape pruning were already done by Cornell Cooperative Extension Finger Lakes Grape Program. They plan to have the videos translated into Spanish and have agreed to share them with Cornell Cooperative Extension of Ulster County.

Measurements of cost savings, changes to farm profit, time saving, etc. were not measured in this grant. Growers have in the past indicated to Cooperative Extension that proper training for farmworkers would save them time and money. The focus of this grant was to provide the tools for that training. A future grant may look at the possible economic benefits.

Materials were not ready for a webinar until near completion of the grant. Jim O'Connell will look into the possibility of hosting a webinar on this project in the fall of 2017.

#### Research conclusions:

Step by step English language narratives were created for each of the 8 key production practices. They were reviewed by cooperators, the feedback was incorporated, and the narratives were translated into Spanish by the Cornell Farmworker program.

The guides contained both English and Spanish language narratives, so both farmers and farmworkers could understand the practice. Videos of the practices were made to supplement the guides.

Jim O'Connell and the Cornell Farm Worker Program held meetings with farmworkers at Wright's Farm, Saunderskill Farm Market (owned by Dave Schoonmaker, one of the grower participants), as well as workers at Clinton Vineyards (managed by Greg Esch, another grower participant), and Red Maple Vineyard (a grower participant who is new to the industry). Draft versions of the guides were presented to the

farmworkers to check for accuracy in both the practices and the language. Feedback was given on the correct words to use, as well as some of the practices (e.g. harvesting raspberries for the farm bakery vs those for the farm market, trunk renewals in grape vines).

Reception by farmworkers of the tools was positive. They liked the step by step process and how it "visualized" the tasks. Red Maple Vineyard, a new operation that was a collaborator on this project, plans to use the grape pruning guides with their workers for the 2017/2018 pruning season. Jim O'Connell will be there help with the implementation process.

As a result of this grant project, one farm decided to color code their raspberries (yellow for summer raspberries and red for fall raspberries). The idea was that it would be easier (and may reduce confusion) to tell the farmworkers to prune only the red staked raspberries, instead of explaining which ones were fall raspberries and which were summer raspberries.

## **Participation Summary**

**12** Farmers participating in research

## Education & Outreach Activities and Participation Summary

**6** Consultations

**5** Curricula, factsheets or educational tools

**2** On-farm demonstrations

## **PARTICIPATION SUMMARY:**

**5** Farmers

**3** Number of agricultural educator or service providers reached through education and outreach activities

Education/outreach description:

In developing these production guides and videos, Jim O'Connell had various consultations both with farms and faculty at Cornell University. Juliet Carroll, Fruit IPM Coordinator, NYS IPM Program provided Jim O'Connell with training for monitoring spotted wing Drosophila, as well as Cornell research fact sheets for monitoring and trap development, which were directly translated into Spanish for this project.

David Rosenberger, retired tree fruit pathologist at Cornell University Hudson Valley Research Lab, provided practical science based research on in field sterilization of pruners. Crown gall is a bacterium infection of grapes, which can be spread by infected pruning shears. Much of the literature focused on soaking pruners in bleach for lengthy periods of time. Rosenberger provided a faster and more practical method (70% rubbing alcohol sprayed on the blades) that tree fruit

educators/growers often use.

The Lake Erie Regional Grape Program hosted Jim O'Connell for a training and video recording session on grape pruning. O'Connell experienced first hand what it was like to be a trainee instead of the trainer. It provided prospective on developing a step by step process farmworkers would understand.

Meetings were held with cooperating farmers, including Wrights Farm and Saunderskill Farm Market, throughout the development of these tools. These meeting provided feedback (what worked, what didn't work) as well as a direction for the project (key focus areas).

More recently, near the end of this grant project, the Hudson Valley Farm Hub consulted Jim O'Connell about some of his work done on this project. They are a large vegetable operation located in Hurley, NY. Although the fruit guides were not useful to them, they were interested in the methodologies and contacts that O'Connell developed during the course of this project. They would like to discuss future training opportunities at their farm.

Video taping of pruning raspberries in the spring (i.e. dormant pruning) was done at Wright's Farm in Gardiner, NY. The taping provided Jim O'Connell with necessary videos to supplement the field guides. It also served as a training opportunity for some of their farmworkers. Wright's Farm is primarily a tree fruit operation and not all of the farmworkers employed there work in the berries. Some of the workers present on the day O'Connell recorded the pruning were trained at that moment to prune raspberries.

While discussing the practices of this grant project with various farmworkers, it was mentioned that they would like more social events to meet other farmworkers. Red Maple Vineyard in West Park, NY has discussed the possibility of hosting such an event at their vineyard. As an education component, Jim O'Connell would summarize the work done and have available the finished production guides.

In total five production guides and six videos were made demonstrating the key tasks identified by the collaborators.

## Learning Outcomes

**3** Farmers reported changes in knowledge, attitudes, skills and/or awareness as a result of their participation

Key areas in which farmers reported changes in knowledge, attitude, skills and/or awareness:

While working on this grant, Wright's farm decided to color code their raspberries. They felt associating their raspberries with a related color (i.e. yellow like the sun for summer raspberries and red for the leaves of fall for fall raspberries) would help reduce confusion since in the spring the plants look nearly identical.

Greg Esch, manager of Clinton Vineyards, adopted a phrase he learned during the development of the grape pruning guides. He is proficient in Spanish and can effectively communicate with the farmworkers he employs. The phrase, "El corazón" translates to "The Crown." It refers to the central region of a grape vine where the canes (or arms) meet the trunk. Greg had previously used a different word. He found that el corazon better conveyed his meaning to the farmworkers.

Red Maple Vineyard is new to grape production. They currently hire someone to come prune their grape vines. They plan to use the guides created to train their own crew on grape pruning. They believe it will not only save them money, it will also help empower their workers.

## Project Outcomes

- 1** Grant applied for that built upon this project
- 3** New working collaborations

### Project outcomes:

Farmers and farmworkers were receptive of the work done with this grant. In addition to getting feedback from the farmworkers about practices and proper Spanish verbiage, some farmworkers have commented they plan to use these guides to help better understand English.

This project has helped CCEUC to develop a stronger relationship with the Cornell Farmworker program, which has led to additional grant proposals to continue working with farmworkers.

After meeting with farmworkers at both vineyards and reviewing the grape berry moth guide with them, they have a better understanding of this pest. They are now able to better identify the damage caused by this pest.

Farmworkers at several farms commented they would like CCE to develop programming specific to them (e.g. fruit school in Spanish, socials with other farms and farmworkers). In Western NY, team members there hold conferences in Spanish for the farmworkers. Jim O'Connell and the Cornell Farmworker program have had some initial discussions with farmers regarding timing and content. They will work to develop this idea further.

### Assessment of Project Approach and Areas of Further Study:

The grower involvement contributed to the success of this grant. Without their involvement, this project wouldn't have gotten done. The Cornell Farmworker Program was also integral to the success of this grant. Being a fluent Spanish speaker, Mary Jo was able to directly converse with the workers. They also felt comfortable talking with her. They knew she wasn't a boss or wasn't someone who possibly reported to bosses (i.e. Cornell Cooperative Extension). As a result, the farmworkers provided direct feedback, ranging from proper verbiage to use to proper picking color for bramble harvests. The color stages in the bramble harvest guide that described the fruit ready to pick, were actually too advanced. Most of the fruit is sold at farm markets. Farmworkers commented that the harvest color listed as ready was almost too ripe and was more suitable for value added baked goods.

The goal of this grant to identify key production practices of berry crops (particularly raspberries and grapes) that are a source of frequent miscommunication between the farmers and their Spanish speaking farm workers was sufficiently met.

Jim O'Connell developed a list of important practices based on his knowledge of the industry and interaction with farmers. This list was then reviewed by growers, farmworkers and faculty to narrow down to most important practices. These practices were created into guides (with the exception of grape berry moth) and videos were developed as supplemental learning tools.

In the early development stages of this grant, one grower collaborator asked if O'Connell would create a guide for pruning tree fruit. Although proficient in Spanish, this grower found it challenging to communicate the proper way to prune tree fruits to the farmworkers.

The seasonality of many of these practices was a big challenge with this grant. It's only possible to capture some of the practices at particular times of the year (i.e. spring or fall). Underestimating this seasonality necessitated a no cost extension of the grant.

The ethnicities of the farmworkers also provided a challenge when it came to using the appropriate terminology in the guides. The farmworkers who provided feedback on this project came from Mexico, Guatemala, Honduras, Costa Rica, and Puerto Rico. Dialects varied from country to country as well as within regions of the same country. It took time to develop a dialogue for the guides that was understood by all the farmworkers involved in this project.

The seasonality of this project would lead this researcher to make adjustments to his methodology. Meeting with collaborators to discuss the key tasks would still be a top priority. However, almost immediately after that, it would be critical to get all of the photos and videos needed. Then begin working on production of videos and design layout of guides. This methodology would allow for time within the original grant period to go back and re-capture any necessary photos or videos. The translations should then be completed after the first drafts of the English guides were produced. After that, it would be easy to setup farm visits to receive and implement feedback.

These guides were produced with feedback from experienced and bi-lingual growers. They have a communication system in place already that works for them and the farmworkers they employ. Growers who are not bi-lingual and employ Spanish speaking farmworkers may greatly benefit from these guides and videos. Additionally, growers who although they are bilingual are also new to farming may benefit from these guides and videos.

In the Hudson Valley Region of New York State, farmworkers can benefit from future educational outreach opportunities. During the course of this project, workers expressed interest in meeting others away from their farm. Additionally, farmworkers may be interested in other training programs that would directly benefit them on the farm (e.g. tractor safety and operation, certificate programs to learn a new skill, etc.).

New farmers may benefit from these results. Some of the material is basic farming skills (e.g. how to prune a grape vine), of which someone just starting out may have limited knowledge. Also, if they employ Spanish speaking farmworkers and they have limited Spanish proficiency, these guides and videos may help to bridge that gap. As an example, one of the grower collaborators on this grant adopted a Spanish phrase to use with the farmworkers he employed. This grower is proficient in Spanish and communicates well with the workers, the phrase, however, was a better fit for the message he was trying to convey.

## Information Products

- [Bramble Harvest](#) (Manual/Guide)
- [Pruning Grape Vines](#) (Manual/Guide)

- [Raspberry Pruning \(Manual/Guide\)](#)
- [Pruner Sterilization \(Preventing Spread of Crown Gall\) \(Manual/Guide\)](#)
- [Spotted wing Drosophila Monitoring \(Manual/Guide\)](#)
- [Video Links \(Workbook/Worksheet\)](#)
- [Scouting for Grape Berry Moth \(Spanish\) \(Multimedia\)](#)
- [Scouting for Grape Berry Moth \(English\) \(Multimedia\)](#)
- [Spotted wing Drosophila Monitoring \(Spanish\) \(Multimedia\)](#)
- [Spotted Wing Drosophila Monitoring \(English\) \(Multimedia\)](#)
- [Pruning Primocane Raspberries in the Spring \(Spanish\) \(Multimedia\)](#)
- [Pruning Primocane Raspberries in the Spring \(English\) \(Multimedia\)](#)
- [Pruning Floricane Raspberries in the Spring \(Spanish\) \(Multimedia\)](#)
- [Pruning Floricane Raspberries in the Spring \(English\) \(Multimedia\)](#)
- [Pruning Floricane Raspberries in the Fall \(English\) \(Multimedia\)](#)
- [Pruning Floricane Raspberries in the Fall \(Spanish\) \(Multimedia\)](#)
- [Pruner Sterilization \(Preventing Spread of Crown Gall - Spanish\) \(Multimedia\)](#)
- [Pruner Sterilization \(Preventing Spread of Crown Gall - English\) \(Multimedia\)](#)
- [Poster: Developing Tools to Improve Communication Between Farmers and Farmworkers Around Fruit Farm Practices \(Conference/Presentation Material\)](#)

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