Training Hispanic Workers and Growers in IPM: Case Studies from the Field

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Scouting Training for Spanish-Speaking Christmas Tree Farmworkers

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NC STATE UNIVERSITY A&T STATE UNIVERSITY COOPERATIVE EXTENSION
Helping People Put Knowledge to Work

Increase in Hispanic Population

• **North Carolina ranks 5th in number of migrant and seasonal farm workers (around 350,000). Over 90% are Hispanic.**

In Christmas tree industry...

• **Labor force is primarily Hispanic (Mexican). Approximately 5,000 workers.**

• Over 80% of year-round workers are Hispanic

The majority speak little to no English

First Line of Defense

- Approx. 35% of workers return to the same farms each year

- Many farms have several long-term employees (5 or more years)

- Workers pass by trees several times during the year: while fertilizing, shearing, harvesting, etc.

- The best offense is...

Extension Efforts

Pesticide Safety Education

Occupational safety training

Bilingual resources for employers

Employment workshops

IPM Training for Hispanic Workers

If workers can recognize problems in the field early, treatments can be applied earlier- saving time, pesticide costs, labor, and exposure risks.

IPM/Scouting Training in Spanish

- Develop a handbook
- Classroom session
- Field session
- Field follow-up

Classroom Session

- Background on the importance of scouting
- Description of symptoms
- Importance of flagging affected trees
- Beneficial insects

Las “Catalinas”

- Muy comun
- Muy facil para reconocer
- Los adultos y la cria comen los chupadores y los acaros

Marcar los arboles plagados con cinta

Classroom Session

- Terms
- Equipment needed
- Slides and descriptions of major and minor pests (w/microscope)
- How to scout

Que necesitamos para buscar los bichos?

Equipo

- **Navaja**
- **Tijeras**
- **Lupa**
- **Contador**
- **Cinta**
- **Bolsas de plastico**
- **Un papel laminado con plastico**



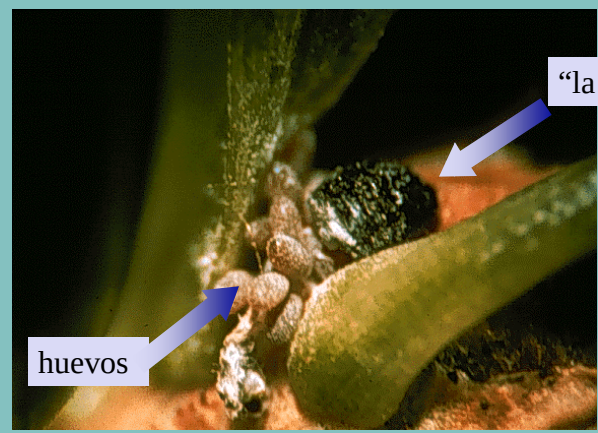


Como se camina cuando se hace el 'Scouting'

Caminar toda la finca

Caminar todas la hilera y volver, saltando 5-10 hileras cada paso

Un adulto con huevos



Una embra con el algodon sacado.

Field Component

- Identifying insects in the field
- How to inspect symptomatic trees
- How to do ‘beats’
- Using a hand lens

Soil Sampling

- Equipment needed
- Where in the field to sample
- Where around the tree to sample
- How deep
- # of samples

Muestros del suelo

- Otra obra con los pinos es sacar suelos para analisis
- Se mandan a un laboratorio para analizar la cantidad de los nutrientes que estan en el suelo
- El productor usa la informacion para los fertilizantes

Pesticide Survey Responses of 65 Workers

Have you ever treated trees with pesticides for insects?

63 said yes (97%)

More or less, how many days per year do you treat for pests?

15.8 days avg.

66% could name at least one of the chemicals that they used. Disyston and Asana were the most commonly named. Other named chemicals include Thionex, Dimethoate, RoundUp, Bravo, Lindane, Atrazine, Simazine, and Talstar.

Have you ever sprayed for weeds with herbicides (like RoundUp)?

57 said yes (88%)

More or less, how many days per year do you spray for weeds?

40 days avg.

Do you worry about the use of chemicals when you're spraying or when you work with trees that have been sprayed?

74.6% said yes

Pesticide Safety Component

- **General pesticide safety training**
- **Safety info for specific chemicals and application methods**
- **Safety equipment distribution**
- **Less than 50% of workers surveyed read pesticide safety info**

Pesticidas

Se usan pesticidas para matar las plagas. Cualquier cosa que mata una plaga es una pesticida. Las pesticides incluye:

- Herbicidas
- Insecticidas
- Fungicidas

Talstar es una insecticida para controlar los 'woolies'.

Farm Safety Component

- Opportunity to invite other farmworker services groups
- NCDA and Farmworker Health Program
- Extension-sponsored events reduce grower angst

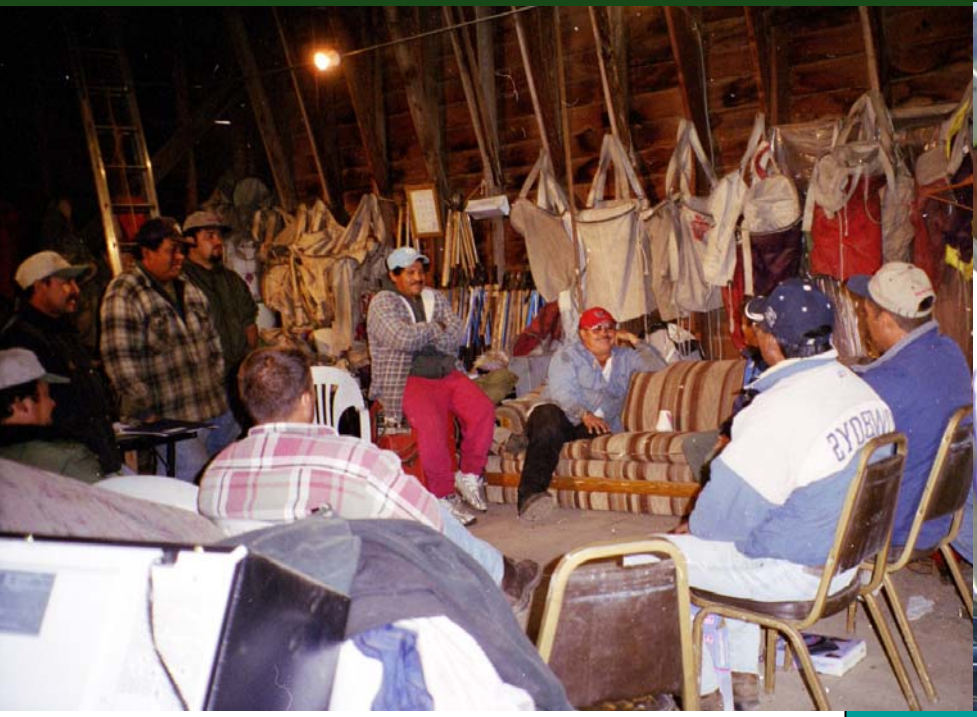
Preference for Training Delivery on Labor Issues

Who would you most prefer to conduct employer training related to migrant or Hispanic labor?	Hiring growers (n=129)	Non-Hiring growers (n=37)
Department of Labor	5%	3%
Employment Security Commission	2%	0%
North Carolina Cooperative Extension (County Extension Agents)	**43%**	**51%**
Christmas Tree Growers Association (Extension)	**19%**	**5%**
A private consulting group	5%	0%
The employer should be responsible for his own training	12%	22%
A non-profit organization	2%	3%
No preference	12%	16%

Results/Impacts

- Over 100 workers trained
- Overwhelmingly positive feedback from growers and workers
- Rust mites found (in time) in 60,000 market trees by workers who attended program
- IPM Technician following up with trained crews in the field
- Validation for workers
- Condensed and translated IPM Scouting Guide for Fraser fir

Hispanic Orchardist IPM Education Program



Center for Agricultural Partnerships

Naná Simone
Program Manager

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Hispanic Farmers: Most Rapidly Increasing Population

- **Washington State Hispanic tree fruit farmers**
  - Started in industry as farmworkers, some became orchard managers

- Most are immigrants from Mexico
- Education level varies widely, average 6th grade
- English proficiency varies from very low to fairly fluent in conversation
- Kinesthetic learners
- Most are small producers by Washington standards (10 – 60 acres)
- Underserved by Extension and private ag suppliers

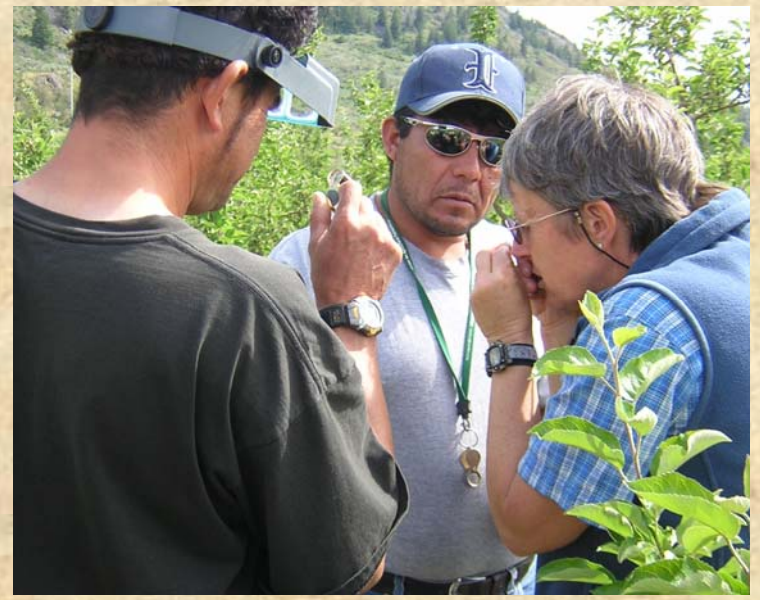
Creating a Program Team

Center for Agricultural Partnerships + Simone IPM Consulting

CAP - nonprofit organization dedicated to solving agricultural problems by helping farmers adopt more environmentally sound and profitable practices

Program Manager -

- Member of the industry with extensive experience as IPM consultant
- Teaching experience (non-academic)
- Bilingual/bicultural
- Respect for target audience



Funding: EPA/AFT and private foundation

Recruitment 101

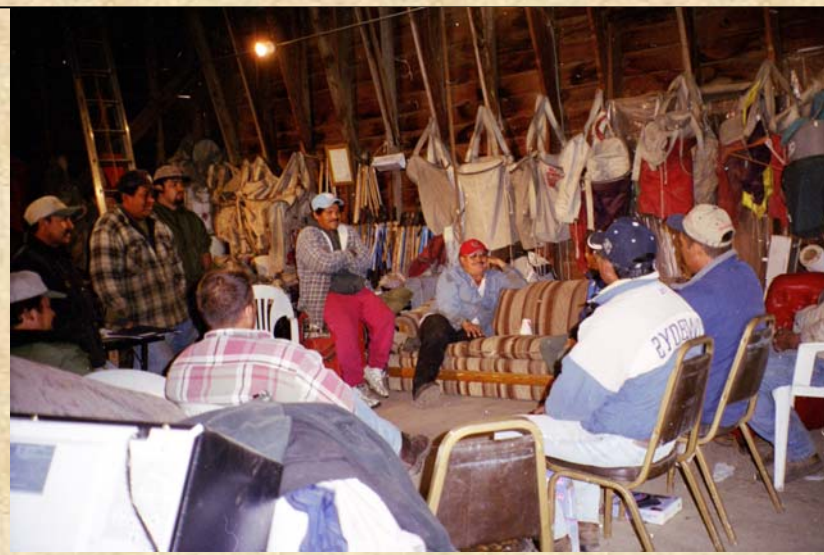
- **Finding the growers:**
  - **Warehouse fieldmen**
  - **Ag chem suppliers**
  - **Extension agent**
  - **USDA Farm Services Agency**
  - **Radio spots**
  - **Spanish language newspaper**
  - **Word of mouth**
  - **Hort conventions**

Recruitment 101

- **Recruiting the growers: big challenge**
  - **Call – explain program, who I am**
    - **Gratis!**
  - **Ask to visit**
  - **Walk orchard together**
  - **Monitor together**
  - **Fill out questionnaire**
  - **Give grower Monitoring Manual**

Educational Sessions

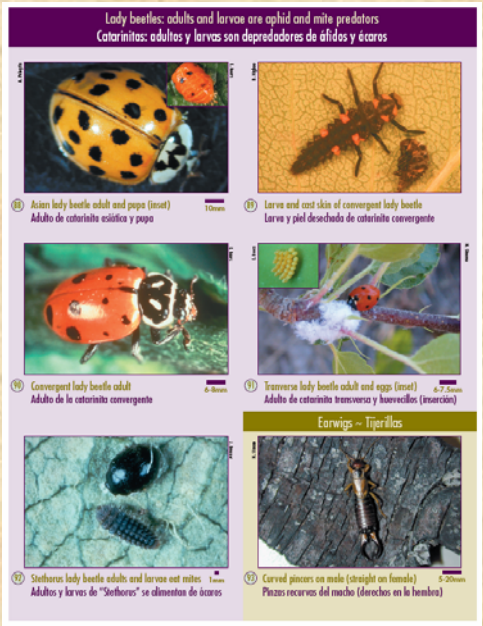
- Classes: Informal
  - Primarily in orchards
    - Classroom in farm shop
    - Bring specimens – live, mounted
    - Grower's orchard = lab
  - Keep written presentations concise
  - Show and tell; lots of Q&A

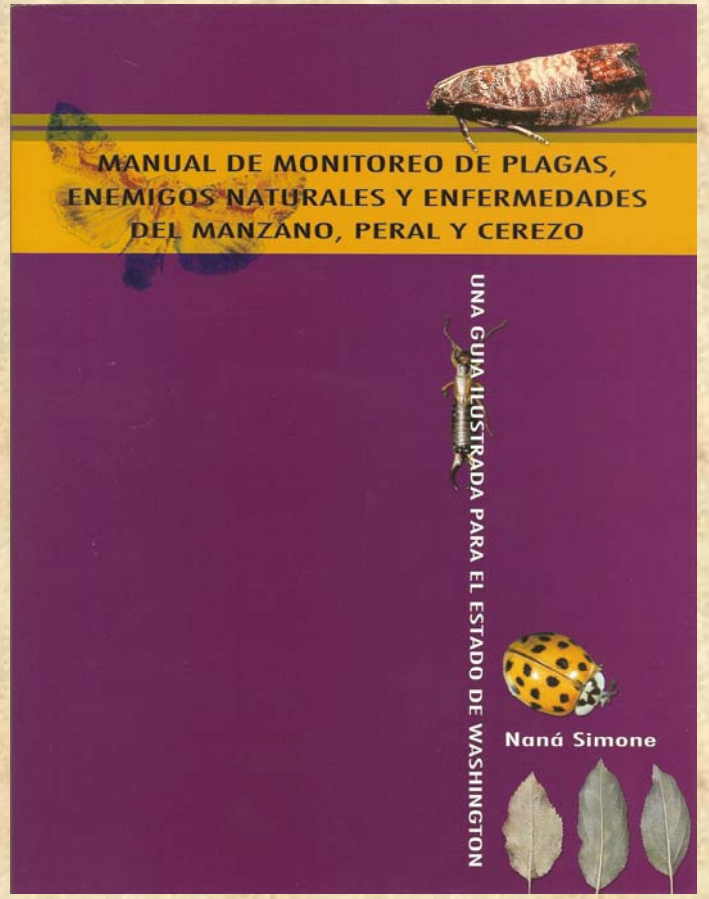


- Provide participants with monitoring equipment
- Speak to the pocketbook & Safety of their family
- Provide time for networking
- Food often brought by participants

Orchard Monitoring Manual

- Available in Spanish and English
- Hardcopy & pdf: http://www.agcenter.org/progpest.html
- Text section – English and Spanish pest names
- Photo section – Eng. & Sp. Captions
- Monitoring methods used by IPM consultants
- Supplemented in Year 4 with Spray Guide





Curriculum

- Components and benefits of IPM
- Identification of pests, diseases, natural enemies
- Life cycles/metamorphosis
- Monitoring methods and timings
- Phenology models – practical use
- Implementation of codling moth mating disruption
- Pesticides: effectiveness, non-target toxicity, cost, tank mixes
- Cost/efficacy/risk comparison of pest control options (including organic)
- Foliar nutrient and chemical thinning sprays
- Resistance management
- How to use reference manuals

Needs beyond IPM: Bring Them Other Resources:

Create Partnerships & Foster Collaboration

- Bring in other bilingual Ag Professionals
- WSU Ag Extension: weekly Pest Updates
- Washington State Department of Agriculture
  - Pesticide Licensing Classes
  - Translation of pest updates
- Wenatchee Valley College Hispanic Orchard Employee Education Program – Farm Management
- Washington Tree Fruit Research Commission staff
- WSU Wenatchee Tree Fruit Research and Extension Center tour
- Other bilingual field personnel – production seminars
- USDA/NRCS EQIP workshops
- WSU Farm Family Support Network

WASHINGTON STATE UNIVERSITY

Tree Fruit Pest & Disease ADVISORY- 2003

Timothy J. Smith, WSU Extension

Versión en español

Información valida por solo siete dias.
Actualizada el 16 de junio de 2003.

PLAGAS CLAVE: CODLING MOTH!, Leafroller (enrollador), Cherry Fruit Fly (mosca de la cereza), Cherry Mildew (cherry mildiú), Orchard Weeds (malezas), Fire Bligth (tizón de fuego).

Codling Moth (palomilla de la manzana): La eclosión de huevecillos (eclosión significa abertura de huevecillos y la salida de la pequeña larvita) está en su etapa máxima en la mayoría de las áreas. En las áreas que se encuentran a la mitad de la temporada, cerca del 25% de los huevecillos eclosionaron la semana pasada, **y otro 15-20% eclosionarán esta semana**. La protección de la fruta debe ser continua hasta la fecha en que el 98% haya eclosionado. Después de esto, usted puede decidir el nivel de protección que necesita su huerto y planificar sus esfuerzos para controlar la segunda generación, que generalmente se presenta de julio hasta mediados de agosto. La segunda generación es difícil de controlar. Tenemos reportes de huertos donde el control de la primer generación no fue bueno, por tanto, ahora que esta la segunda generación, el control es muy difícil. Muy pocos productos proveen control adecuado en el período de 14-21 días después de la aplicación. Si su huerto tiene una infestación fuerte de codling moth (de acuerdo al número que atrape en las trampas), se necesitan **tres sprays de cobertura** o "cover sprays", empezando con el primero al momento adecuado y aplicando los otros dos uno cada dos semanas. La coordinación con los vecinos puede mejorar el control de codling moth.

Leafroller (enrollador de la hoja): La eclosión de huevecillos del enrollador de la hoja de la especie OBLR en Mattawa, Tri-Cities y Milton-Freewater está pronosticada para junio 6-8. En los lugares de baja elevación de Wenatchee, la eclosión de huevecillos de la especie Pandemis esta pronosticada para junio10; en los lugares bajos donde hace mas frió la eclosión puede empezar hasta el 13 de junio. A la altura del aeropuerto de Wenatchee, Brewster y Royal City, los huevecillos comenzaran a eclosionar en junio 14-18. En Quincy, la eclosión de huevecillos comenzara el 19 de junio. Se pronostica que la eclosión de OBLR empezará el 20 de junio en Tonasket.

Peach Twig Borer (barrenador del durazno): El modelo predice que el comienzo de la eclosión de huevecillos de la 1er generación en el área de Wenatchee comenzará el 3 de junio. Para controlar con un solo spray, el mejor momento de aplicación está entre 7-14 de junio. La eclosión de huevecillos terminará el 26 de junio.

Fire Blight (tizón de fuego): El riesgo de infección continua en lugares donde hay flores, bacterias y presencia de humedad. Normalmente, el riesgo de infección por "fire blight" baja en esta época del año, a pesar de las altas temperaturas. La pera puede infectarse durante el tiempo de floración secundaria, en el mes de junio; la mayoria de las variedades de pera tienen floración secundaria. El riesgo de infección para manzano es menor porque los racimos que florean tarde son pocos, pero aun así, la infección es posible mientras el haya flores presentes. Corte las partes infectadas con "fire blight" para que se reduzca el daño.

Información especifica para cada sitio: *Information updated 6/16/2003. No se use después de 7 days.*

Site	Cherry Fruit Fly % emergencia de adultos	Codling Moth Estimación % adultos en vuelo	Codling Moth % eclosión de huevo hasta el momento	C. Moth Fecha Estimada para el 98% de huevos eclosionados	Codling Moth Fecha para 200, 400 y 600 grados día.
Finley-TriCities	88 %	100	94	6/22	5/13, 5/28, 6/7
WSU-Prosser	64 %	98	80	6/30	5/22, 6/3, 6/13
Mattawa PAWS	73 %	99	87	6/26	5/21, 6/1, 6/11
Royal City	50 %	97	73	7/3	5/24, 6/5, 6/16

Results

Empowerment: "I have pride and confidence in the ability I've gained to make my own pest management decisions"

- Reduction in amount of chemicals applied, especially OP's
- More rapid adoption of reduced-risk chemistries and mating disruption
- Cost reduction in spray program
- Decreases in pest damage
- Increased ability to critically evaluate recommendations from ag chem consultants

- Known direct behavioral impacts on 20 out of 44 attendees
  - Proportional to: attendance and engagement in classes, willingness to use resource people outside of class also correlated

QUESTIONS?