

HISPANIC ORCHARDISTS

from orchard to worker orchard owner

THE PROCESS OF PEST MANAGEMENT

As students arrive at the orchard of Aristeo Maldonado for their class session, the atmosphere is friendly and pleasant. Hugs and enthusiastic greetings are exchanged as Aristeo's wife Evelia sets out a meal of chicken tostadas. The students, Hispanic orchardists from all over the Tonasket area, gather around the food and begin eating and chatting comfortably with each other. Naná Simone, the instructor who speaks fluent and ag-technical Spanish, is a welcome member of the group. She grabs bites off the plate Evelia prepared for her while organizing her teaching materials. If it weren't for the microscope and flip-chart she sets out, one might mistake this gathering for just a fun afternoon get-together between family and friends. All are relaxed and genuinely happy to be there. Eventually, after everyone has seconds, chairs are pulled up and notebooks pulled out in preparation for the lesson.

ARISTEO MALDONADO is one of over forty Hispanic orchardists in the Tonasket and Wenatchee area of North Central Washington State participating in the Hispanic Orchardist Integrated Pest Management (IPM) Education Program. It was through a chance encounter between

Aristeo and Naná that the need for the program in Tonasket was first identified nearly four years ago. The program is designed to provide education and training on profitable,

safe and sustainable farming methods for Hispanic orchardists, a rapidly growing population in need of education that meets their unique cultural needs.





"WE HAVE ALWAYS WORKED IN AGRICULTURE!"

Aristeo never planned on owning his own orchard. He came to the United States from Veracruz, Mexico, in 1984, where he worked as a supervisor in a sugar processing plant. When he arrived in the U.S. he worked as a tapestry shop helper until he moved to Washington State to work in apple orchards. Three years after moving to Washington, he was severely injured while working in the field, and doctors told him he may never walk again. Miraculously he regained motion and at that point considered returning to Mexico. But his wife and 10 children had other plans. "My wife didn't want to go back, and my children, they wanted to go to school here."

Then Aristeo read about credit opportunities from the USDA Farm Service Agency for minorities to buy orchards. Aristeo applied and received a loan to purchase his first 45-acre

orchard. Most Hispanics involved in the IPM Education Program began their orcharding careers this way. As Washington State's apple industry began to suffer nearly a decade ago, many farmers put their orchards up for sale at very low prices. Hispanics who had worked in orchards for years took advantage of this opportunity to start their own orchard business. Though the Washington apple industry was, and is not at its most lucrative, Hispanic orchardists have persevered. Soon after he purchased his first orchard, Aristeo pulled out some of his Red Delicious trees and

replaced them with newer varieties. Though at the time some people called him "loco," this diversification is what has kept his business going. He and his family now farm about 135 acres in Tonasket. Most Hispanic orchardists share Aristeo's determination to do whatever it takes to maintain their orchards. Agriculture is not just their job; it is their way of life.

The orchardists in the IPM Education Program average just a sixth grade education. Only five of the original 26 students that began taking the class in 2002 graduated from high school. Most came to the United States from

Mexico before the immigration amnesty in 1986 and immediately began working for farmers. José Luis Covarrubias, who now farms with his two brothers in Quincy, says, "We have been working on this (agriculture) since we came here (to the United States)...We have always worked in agriculture. That's the only thing we know how to do."

Aristeo says his first year of business as an orchardist was good. However, he suspected he was spending far more on chemicals than necessary. But, he explains, "I didn't know anything about chemicals." He could only rely on recommendations from the agricultural dealers and their agents, or "fieldmen," to know which pests were in his orchard, which chemicals were needed to control them and how much to apply. Often the recommendations were not site specific or cost-effective. Fieldmen often do not have the time to spend thoroughly monitoring a small grower's orchard or time to educate them about pests and pest control programs.

"I DIDN'T KNOW ANYTHING ABOUT CHEMICALS!"



When Aristeo met Naná, he found the key to learning more about pest management and decreasing his dependence on fieldmen. At the time of their meeting, Naná worked mainly as an independent consultant, but also did some consulting work for Dr. Jay Brunner, Director of Washington State University Tree Fruit Research and Extension Center in Wenatchee. Dr. Brunner needed to disseminate information on replacements for organophosphates on codling moth, and they put together a small group of farmers from Okanogan County. Aristeo was part of that group. At that time, Naná was also in the process of working with the Center for Agricultural Partnerships to start an IPM program for Hispanics, an idea she developed while working as a consultant in the Yakima Valley years before. She noticed that small farmers, many of whom were Hispanic, were not getting the necessary attention from fieldmen or from WSU-Cooperative Extension that larger growers received. She realized that a combination of her pest management knowledge, fluency in Spanish, and love of teaching could be a useful, and priceless, resource for Hispanic growers. When she mentioned her idea for an IPM program for Hispanics to Aristeo, he told her that he could easily put a group together. So when the project received funding, the first Hispanic

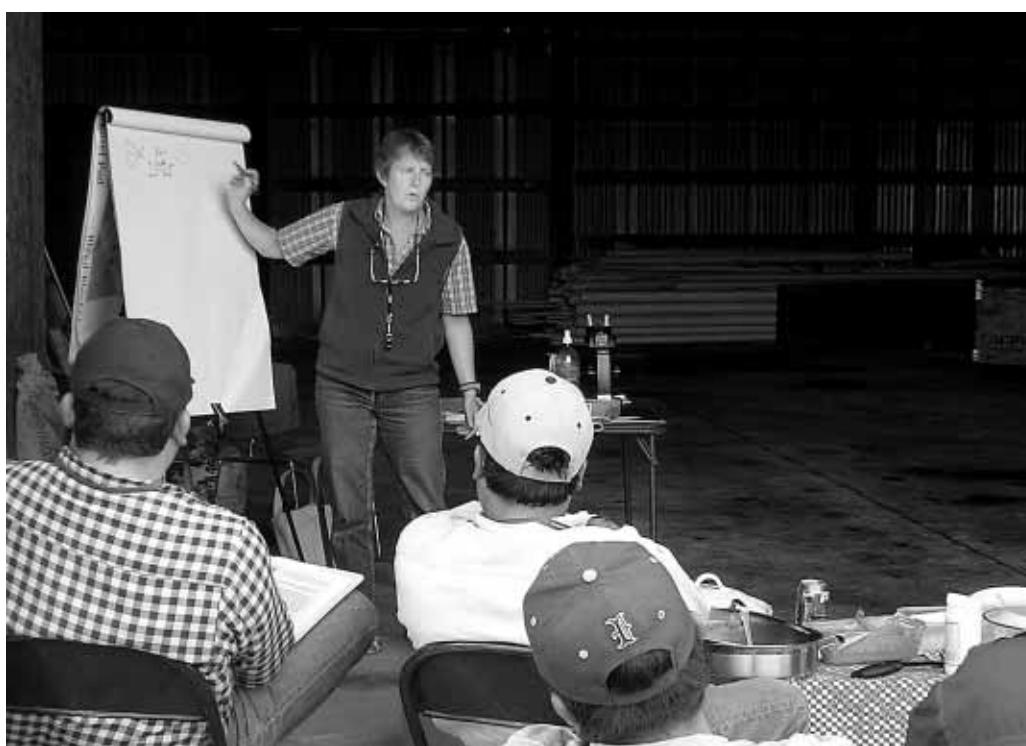
Orchardist IPM Education classes began in Tonasket. Interest was so strong that class size increased quickly and classes became more frequent. Now the class is in its fourth year, held in both Wenatchee and Tonasket, and with over 40 students.

"IT IS VERY ESSENTIAL THAT NANÁ IS HERE FOR US!"

One of the main difficulties for Hispanic orchardists is that most classes offered are not designed to meet their educational and cultural needs. Because most have not graduated from high school, they are not accustomed to classroom-style learning. Classes offered through WSU-Cooperative Extension or through their warehouses are usually held in a large meeting room with a series of speakers giving lectures on different topics, and usually entirely in English. For Hispanic farmers, who are very physically active and essentially non-academic, this learning environment is not ideal. They learn best through hands-on experience, and by asking questions about very practical problems in their orchards. And they learn best when taught in their own language. Victor Castro, one of the Tonasket students says, "Even if you understand English, it makes you feel more comfortable (when the class is taught in Spanish)." José Ramón Luna, another Tonasket student, agrees, saying that if the class "were in

English, I would still learn but probably with more limitations. I think Naná's Spanish is very, very good for me. I understand." Because there are varying levels of education and literacy within the Hispanic orchardist community, teaching the class in Spanish makes it accessible to more people. Aristeo explains, "Many of the growers that go to the meeting, they are not able to read or write. Naná is the instrument...They listen to Naná. It is very essential (that) Naná (is) here for us."

Students appreciate the hands-on teaching style Naná uses. Each class session is usually held at the different student's orchard, and Naná allows about half the class-time to go into the orchard to identify pests and the damage they cause, and to give advice on how to control them. Victor Castro says, "When you go to the meetings in big buildings sometimes you don't feel comfortable...(In Nana's class) we walk in the orchard where we have the meeting and we see what the problems are with the orchard...you're basically seeing what she's showing in the class. And if there's a problem, we talk about it." Alex Betancourt, an orchardist in Rock Island, has attended a few different classes offered for Hispanic orchardists, and says the Hispanic Orchardist IPM Education Program is different because it is "more in the field, from the field point of view." He says Naná's class gives him the opportunity to put into practice what he learns. José Ramón Luna comments, "If it was just a lecture, we wouldn't have a chance to see what we see in the field, to see the different orchards, the different situations...for me to go out into the field after the lecture is the most important thing."



THE CENTER FOR AGRICULTURAL PARTNERSHIPS (CAP)

is a 501(c)(3) nonprofit organization whose mission is to create programs that solve agricultural problems by helping farmers adopt more environmentally sound and profitable practices.

The Hispanic Orchardist IPM Education Program demonstrates the basic principles used by CAP in creating significant and measurable change.

Each of CAP's programs is organized by taking the time to understand growers' needs, combining local expertise and energy with targeted resources, enabling growers to make critical improvements in their operations and empowering them to conserve and protect natural resources.

Through a unique understanding of the process by which constructive change occurs, hard work, and extensive experience in agricultural and environmental policy CAP has collaborated with more than a hundred companies and organizations on 350,000 acres in a dozen states to implement environmentally sound practices in commercial agriculture.

Headquartered in North Carolina, CAP is supported by foundations, corporations, individuals, and state and federal government.



ABOUT NANÁ

The daughter of immigrants from Colombia and Italy, Naná Simone grew up in Los Angeles, CA. She earned a bachelor's in Romance Languages from the University of California, Santa Cruz and spent 8 months in Spain. She went on to earn a Masters in Plant Protection and Pest Management from the University of California, Davis, and moved to Washington State. In 1991, she began consulting and worked mainly in the Yakima Valley until 2001, when she moved to Wenatchee.

MOTIVATION: In her work as a Pest Management Consultant in the Yakima Valley, she came across small farmers that could not afford a consultant, but desperately needed guidance and education in Pest Management. Naná wanted to combine her personal interests of pest management, teaching, and Spanish to create a program that would provide a needed service for the Hispanic orchardist community.

METHOD: In her work as a consultant, Naná did some basic IPM training including trap checking (in Spanish) for people that worked on farms. She learned first-hand how much better it worked teaching in Spanish and found that strictly classroom-style teaching would not work. She says, "Most field workers have a limited education...they might not even know what a graph or a table is or how to read, so if I can be out there hands-on showing them, doing it with them...It may not seem to be the most efficient teaching method, but it's a lot more effective." Naná is careful to project a friendly, respectful attitude toward her students which helps them open up and feel comfortable. "I always tell them there is no bad question, there is no stupid question." She recognizes that her students come from a vastly different educational background than she does, and does her best not to talk to them like an academic.



The trust that the Hispanic students have for Naná is obvious. They respect her knowledge and trust her because she speaks their language and seeks to meet their needs. Aristeo expresses great appreciation for Naná, not only for her knowledge, but for her personality and the relationship she has with the Hispanic orchardists in the class. "We have been learning from this lady...she is very, very friendly...she can relate well, very good relations...We feel protected by Naná." The orchardists feel comfortable calling Naná when they have questions or need advice outside the classroom, too. Miguel Alvarado, a Tonasket orchardist, says, "I learn not only in the class but I have a close connection with Naná, there is communication and I can call her, so I can get a different opinion." Victor Castro says, "She knows a lot and she is a very nice lady. She knows how to treat us. She knows what she's doing, basically."

Naná's availability and willingness to take the time necessary to invest in her students not only in class, but one-on-one, is key to the success of the class. Francisco Sarmiento is an instructor in the Hispanic Orchard Employee Education Program at Wenatchee Valley College, and worked with Naná to develop a class on irrigation for the same students taking her Pest Management class. He believes the relationship Naná has with her students is a huge factor in the success of her class. He says, "They feel that she cares. They are not only being taught, they are being helped." Alex Betancourt agrees, saying, "She's energetic and she's willing to share what she knows...The class has been successful because she has been there for us."

Naná regularly asks her students what they would like to learn, and she does her best to

accommodate their needs and their suggestions. José Ramón Luna was interested in learning more about degree day models, a method of determining when to spray for codling moth. He says, "I asked Naná because I was interested in learning about it, because I always heard about it." To help him, Naná had José prepare a presentation to give in front of the class. He appreciates the way she provided him with the opportunity to learn the information thoroughly and then share it with others.

"I KNOW WHICH BUGS ARE FRIENDS AND WHICH ARE NOT!"

When asked how the class has helped them, a consistent response is that the orchardists have been saving money. During his first year of business, Aristeo says, "for 42 acres I spent \$32,000 on chemicals, because I didn't know anything about chemicals...I paid a very high price." He describes how the fieldman from the chemical company would come to his orchard, find a pest in only one area of the orchard and tell him he needed to spray the whole orchard. Naná has taught them how to determine which areas of their orchards need spraying for certain pests, rather than spraying the entire orchard. Aristeo describes a time he was in the hospital for open heart sur-



gery, and had his sons running the orchard. He received a call from his son telling him that according to the fieldman, they needed to spray the whole orchard with a certain chemical. "I said, 'No, don't do anything.' We had the advice from Naná. Now we are better prepared to dispute them when they tell us we need to spray the whole orchard."

With Naná's help, the growers are able to reduce the quantity of chemicals they use in their orchards, as well as determine the best and often most economical products to use. Victor Castro, who has been attending Naná's class since it began, appreciates the information she gives them on alternate products and often less expensive options. With Naná, Aristeo says, "We have more choices. Many times, the more expensive is not the best. Sometimes cheaper does the same job or a better job." He grins as he tells a story of an early interaction with Naná. "I remember the first classes we had with Naná, and I had a very strong chemical that kills everything, and I tried to hide it from Naná, and she said, 'Aristeo, where are you going with that devil?' I said, 'Oh, Naná, the fieldman said I needed this,' and she said, 'You don't need to do that! It is very expensive and you are killing everything! You can use this.' And she gives me something that is cheaper and better." Out of 14 growers that participated in the first year of class, seven growers spent less money on chemicals that year and seven sprayed less chemicals.

Aristeo says one of the most helpful things he has learned is the information about pests,

such as life cycles and which insects are friends and which are not. Now, he says, "I know about more chemicals that we can use to protect the good ones, to increase the population of the good ones." Miguel Alvarado agrees, stating that "knowing the pests, the beneficial insects, when to control the pests" is the most helpful information Naná has provided. José Ramón Luna appreciates knowing that the timing of applying chemicals is related to the life cycles and development of the insects. "When the fieldmen used to come they would give me the whole list of chemicals to apply, and I applied them, but now that I know (the life cycles and development of the insects) I can see which ones I need and which ones I don't." In the first year of class, one half to two-thirds of Naná's students began monitoring pests and diseases and setting up their own trapping programs for codling moth in their orchards. In 2004, Naná published "Orchard Monitoring Manual for Pests, Natural Enemies and Diseases of Apple, Pear and Cherry," a 73-page manual, printed in both Spanish and English, that includes 22 sheets of color photos. The manual has proved to be a priceless tool as well as a text book of sorts for students to identify pests and diseases and develop monitoring systems.

As Aristeo talks about the changes he has experienced since the class began, he expresses a pride and confidence in the ability he has gained to make his own decisions regarding pest management. He feels that he is in control now. After Naná came, he says, "The fieldman, because he knew that we were having meetings with Naná, he reduced a lot of



CLASS OBJECTIVES

- To empower Hispanic orchardists to understand that they can learn the information necessary to control the pests in their orchards and not have to depend on the knowledge of another person.
- To give Hispanic orchardists information so they can question the recommendations of the fieldmen. To help them realize that they are entitled to know what every chemical given to them in a recommendation is for and why the fieldman thinks they need it.
- To help Hispanic orchardists understand how to economize and get the best "bang for their buck."
- To teach Hispanic orchardists the non-target effects of pesticides beyond what they read on the label. Says Naná, "There are bad bugs and there are good bugs, and you don't want to kill the good ones because they help you."
- To help Hispanic orchardists understand the principles of resistance in insects and diseases that develop against pesticides and help keep them off the "chemical treadmill."



CLASS CURRICULUM

The focus of class is to provide participants with the knowledge they need to practice integrated pest management (IPM) in their orchards. IPM is pest management that relies upon monitoring of pest and beneficial organisms, the use of economic thresholds in decision-making, use of least-disruptive methods where economically feasible, and the employment of tactics to avoid pesticide resistance. Class topics are as follows:

- Identification of pests, natural enemies, diseases and disease life cycles
- Insect life cycles
- Insect degree day models
- Components of integrated pest management (IPM)
- Benefits of IPM
- Orchard monitoring equipment and use
- Mating disruption: keys to successful implementation
- Foliar nutrients
- Cost/efficacy/risk comparison of pest control tactics



his chemical recommendations. He knew that we would ask Nana for advice.” José Ramón Luna has also taken a more proactive approach with his fieldman. “Now when they (the fieldmen) come around I tell them what I’m going to do and what I’m going to apply, and which place on the orchard I’m going to apply it and they give me suggestions, and tell me if I’m doing okay...Now I can pretty much do my own recommendations, and if I have any questions I can ask the fieldmen or Naná.” Because the orchardists taking Naná’s class demonstrate their ability to make decisions and know their orchards, there is a gained respect and interaction with the fieldmen not present before the class.

One of the greatest side benefits of Naná’s class is the network of information that has developed for them. Aristeo describes it this way: “We need Naná. We need all the knowledge she has. (But) Naná is not a person that knows everything. She is surrounded by other guys, other kinds of people...she is the center that contacts the other persons that let us know what we need.” Through Naná, the orchardists are connected to Wenatchee Valley College, Washington State University, as well as other groups of experts that can answer questions and provide updated information.

The students are always careful to pass on information to each other. Another reason the class is such a success is the close relationships between orchardists. They look out for each other and invest in each others’ success. They enjoy sharing information and answering each others questions. Victor says, “We share information, what to do and when, and if we have a problem or a question, I call Naná...and when I

get the information I will pass that on to the others.” José says, “If I have questions, sometimes I don’t call Naná but just wait for the class-time when everybody is together and then I ask the question or make the suggestion.” The social aspect of the class is one of the reasons Naná believes the students keep coming. They like to get together and “talk shop.”

“EVERY DAY, WE HAVE NEW THINGS TO LEARN!”

The students are eager for information in fields beyond Naná’s expertise. When asked what could be done to improve the class, Victor Castro says, “She can bring in other people, with different points of view, with different ideas, for the pruning, for irrigation...there are a lot of things out there. I think that’s what she needs to do is have more people involved, that have those qualifications...” José Ramón Luna says that Naná has been “asking us in which other areas she can help us. We suggested some kind of training in pruning cherries because there are different kinds of cherries and each one requires a different kind of pruning. And I think she’s going to bring someone that has experience in the different varieties to teach a class next year.”

Alex Betancourt sees room for improvement on the orchardist’s side, not the educator’s side. The challenge, he thinks, is convincing Hispanic orchardists of the value of education and that it is worth the time it takes out of

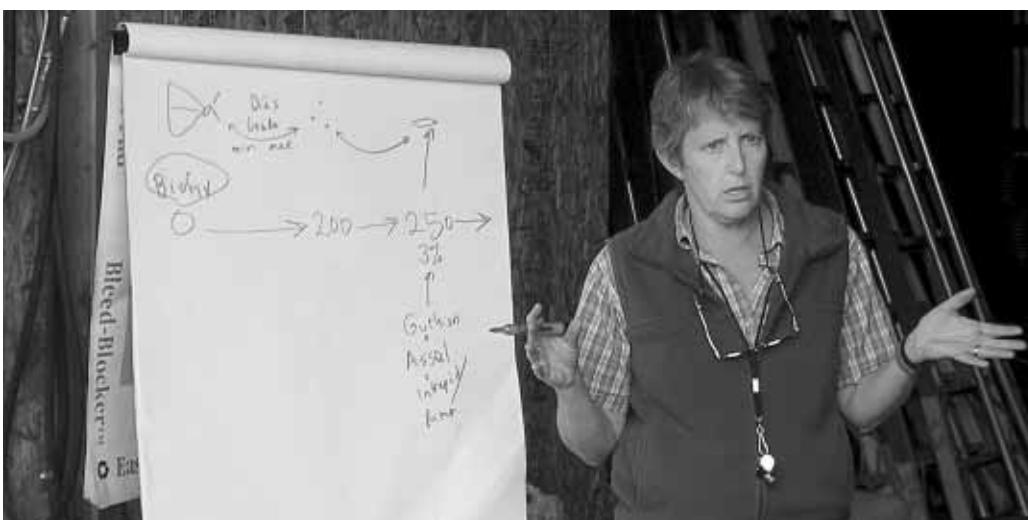
their schedule. He says, "I have talked to a few Hispanic growers (about Naná's class) and you know, they are not interested, and they feel that, hey, I know a lot, I know enough." Most Hispanic orchardists do not hire help outside the family unless absolutely necessary, and with such a heavy work load it is extremely difficult to make time for education. Wenatchee Valley College offers a Hispanic Orchard Employee Education Program, but it requires a 10 hour a week commitment, a sacrifice of time most Hispanic orchardists do not feel they can make. Even making time to spend two afternoons a month with Naná is a challenge, especially during harvest. Alex says, "She (Naná) knows that, when there is a meeting right in the middle of harvest, or close to harvest, she's not going to have full attendance. It is difficult when the time comes and it is hard to pull away. Looking at the growers that I know of, in the programs like with Naná, sometimes you have a full house, sometimes you have 3 or 4. So it also depends on the season...you know, there are a lot of things..." But, he adds, "If they really want to get the knowledge, they will do the best they can to be there...I know that for sure the Spanish population is growing, and also the orchardists are growing. How successful can we be to attract other people to participate in the class if they are not interested? I think that will be a question that needs to be addressed ourselves as farmers. It's hard, because you can offer the best thing that we need, but if we're not there...(it's not getting us) anywhere." Aristeo believes that lack of time is no excuse for refusing education. "Yes, we have a lot to do here in the orchard. But the best use of my time is when I go to learn something from somebody in this industry. I like to learn more. But there are a lot that say, 'No no, I have no time to go with Naná because I need to spray, I need to do this...'" But later, he says, they regret not going, and end up asking those that do attend class regularly for advice.

One thing is obvious; the students taking advantage of Naná's classes eagerly soak up the information she provides and are ready to learn more. Victor Castro says he hopes the class "stays forever, because later on maybe my kids can take it (the orchard) over." Grinning, he says, "I hope that she (Naná) doesn't get bored and want to quit or retire." Aristeo says, "You ask how long we need Naná, I say forever. Forever because in this industry, every day we have new things to learn."

Naná believes the class could go on indefinitely. There will always be a need for it because information is always changing and the number of Hispanic orchardists is growing. She points out that no farmer works in a vacuum. You always need people to bounce ideas off and to ask advice, and the Hispanic Orchardist IPM Program provides that outlet for Hispanic orchardists.

Dr. Jay Brunner, Director of WSU Tree Fruit Research and Extension Center, sees great potential in the "innovative" program, and believes its expansion would benefit the entire tree fruit industry in Washington State. He says, "One of the major barriers to implementing pest management is paying monitoring costs. Training those that already work daily in the orchard to recognize both pest and beneficial insects...can help advance pest management programs with little additional cost." Dr. Brunner hopes Naná's training model is adopted by more Washington orchard operations.

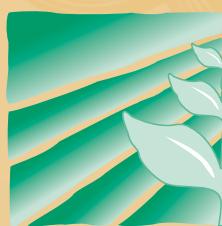
There is obvious room for the Hispanic Orchardist IPM Program to grow. Naná has already found new areas of knowledge that the growers want and need to learn. The key," she says, "is making sure that we provide a unique opportunity for these growers to gain understanding and confidence in applying their skills—to improve and sustain their orchards."



GUEST INSTRUCTORS

Educational sessions conducted by guest instructors have expanded the learning opportunities for Hispanic Orchardist IPM Program participants and given them a chance to learn from top specialists in their fields. Among the instructors and topics included in the Program are:

- **TOM KUNKEL**, Stemilt Growers—Cherry planting systems, training and pruning
- **LEO GARCIA**, Wenatchee Valley College—Harvest systems for cherry
- **DR. HILARY SAMPSON**, Okanagan Similkameen Cooperative Growers Association—Tree fruit nutrition: essential nutrients, fertilizers, sprayable nutrients, timing of fertilization, leaf and soil analysis
- **FELIPE CASTILLO**, Washington Tree Fruit Research Commission—Crop load management using chemical thinning
- **FRANCISCO SARMIENTO**, Latino Agricultural Education Program, Wenatchee Valley College and WSU Chelan County Cooperative Extension—Crop load management using chemical thinning; Pesticide applicator license training
- **FLOR SERVÍN**, Washington State Department of Agriculture Farm Worker Education Program—Sprayer calibration



**Center for
Agricultural
Partnerships**

1 West Pack Square, Suite 401 • Asheville, NC 28801
828.285.9340 • www.agcenter.org

The Hispanic Orchardist Integrated Pest Management Education Program has been made possible through support from:
American Farmland Trust/Environmental Protection Agency (EPA) Region 10 Strategic Agricultural Initiative • The Bullitt Foundation •
EPA Community Action for Renewed Environment (CARE) • EPA Region 10 Environmental Education Program • Syngenta

Report prepared by 501 Consultants, Wenatchee , WA.