



University of California  
UCNFA News

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**Benefits of Effective Personnel Management**

by *Howard Rosenberg*

“Rocket science is easy. It's managing people that's hard.”  
— Jay Levine, aerophysics branch chief, Edwards Air Force Base

Competitive pressures have magnified the need for agricultural employers to operate efficiently, make good use of valuable human resources and minimize avoidable expenses, including the costs of defending against charges of wrongdoing. The decisions by which people are managed in agriculture affect business results, worker quality of life, commodity prices and quality, and even the social fabric of communities. Opportunities are lost in agricultural operations where attention to labor management stops with keeping the “help wanted” sign clean and handy.

Does it really matter how agricultural labor is managed? What gains can be realized from improving personnel practices and skills? Some benefits were brought home to growers during a recent tour of two value-added agricultural processing firms. An advisor accompanying them describes the obvious differences:

“As we went through the first firm, employees were busy doing their jobs, but not with a lot of energy. The atmosphere felt cold. There was very little conversation between the managers conducting the tour and the working employees, and the relationship between them seemed very formal. Owners of the firm later talked about how tough it had become to make ends meet in their business. Labor costs were too high, productivity was down, rapid staff turnover was proving disruptive in many ways and good employees were always hard to find. They

**Editor's Note**

Despite their astuteness and abilities in other areas, most managers in agriculture have little formal education in business and even less in human resource management. Yet managing people is an essential part of growing nursery stock or flowers. The two feature articles in this issue of UCNFA News are a brief introduction into the importance of managing farm labor and recommended practices in hiring new personnel. The authors — Howard Rosenberg (UCCE Specialist emeritus) and Gregorio Billikopf (UCCE Farm Personnel Advisor) — will be contributing articles and web-links with similar information in future newsletters.

◆ **Steve Tjosvold and Julie Newman**

**AG PERSONNEL MANAGEMENT-**

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**Effective personnel management can be a major competitive advantage and a lead indicator of a thriving business. Photo by Loren Oki.**

were thinking of relocating and re-building in another region that they believed would have a ‘friendlier’ business environment.

The tour then continued down the road a few miles to another firm that produces a similar product for the same market. The difference was astonishing. Not only were production lines flowing smoothly, but people had an energy to them, and there was a hum about the place. It seemed the very building was alive. We heard some task-related conversations spiced with occasional laughs, and managers and employees were interacting comfortably. Owners later talked about their recent growth, steady increases of both sales and profits, and plans for further expansion. Naturally, we all wanted to know the secret of their success. They replied without hesitation, ‘Our employees.’

Unlike the first firm we visited, this one had no problem finding the

kind of employees it needed. In fact, well-qualified workers from other places often approached them looking for jobs, staff turnover was very low and productivity was high. The owners’ main labor concern was that some employees were accumulating a great deal of their annual vacation leave rather than taking it during the year.”

The growers who participated on this tour caught a glimpse of what many other practitioners, as well as researchers, have found: Effective personnel management can be a major competitive advantage and a lead indicator of a thriving business.

Who manages the agricultural labor force? More people have a hand in management than most of us realize. Their roles and the names by which they are commonly known differ across commodity sectors, parts of the nation, sizes of organization, forms of business, levels within the organization and cultural backgrounds. The property owner, general manager and designated human resource specialist make personnel management decisions, and so do the harvest manager, crew supervisor, foreman, chief mechanic, office administrator, the owner’s wise and deft spouse, and many production employees whose informal influence much outweighs their job titles.

The things these individuals do to manage labor cover an expanse of human activity — deciding how many people to hire, setting wage rates, recruiting employees, writing layoff and recall policies, filling out forms upon hire, explaining harvest and pruning techniques, providing field accessibility to water and portable toilets, checking on product quality, adjusting for family emergencies, choosing a replacement foreman, trying to cool hostilities, selecting an employee of the month, administering first aid, documenting performance strengths and weaknesses, running a meeting and bargaining with an insurance agent. Their duties are seemingly endless.

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This article is an excerpt adapted by Steve Tjosvold from *Ag Help Wanted: Guidelines for Managing Agricultural Labor*, 2002, <http://anrcatalog.ucdavis.edu/Labor-ManagementRelations/AHW001.aspx>.

# Practical Steps to Employee Selection: Designing the Employee Selection Process

by Gregorio Billikopf

Managers who are involved in hiring nursery employees need to understand the skills and abilities that are required in a particular job and determine which candidates have those capabilities. Interviews, reference checks, tests, applications and résumés can all help identify differences among candidates. Managers can make their selection decisions with a fuller awareness of the applicants' strengths and weaknesses. Combined with a good orientation period, careful selection enables the employer and new personnel to start out on a positive path.

The information presented in this article describes one factor that employers need to consider when selecting employees: Designing the employee selection process. A well-designed selection process is critical to determining information about a candidate's skills and weaknesses. However, several other factors must also be considered in making an informed choice. These include deciding what you need, exchanging information with applicants and bringing the new employee aboard. Detailed information concerning these topics is discussed in the reference link listed at the end of this article.

## Step 1: Determine which selection tools to use

In designing the employee selection process, the first step is determining which selection tools to use to evaluate applicant skills. Selection tools include applications, interviews, tests, reference checks, letters of recommendation and physicals. Some selection tools are more effective than others, but a combination of tools is usually best. For example, factors reflecting worker motivation, such as punctuality and attendance, may be elicited within the interview, but contacting previous employers may give more reliable information. If possible, try to verify evidence of specific skills, knowledge and abilities at more than one point in the selection process. Time constraints may limit choices.

The table on the next page lists various selection tools that can be used for measuring specific skills, knowledge and abilities. In selecting which tools to use, it may be helpful to use this table as a template, substituting the skills, knowledge and abilities that are important in the job you are seeking to fill. Think



**A well-designed employee selection process is critical to determining information about a candidate's skills.**  
Photo by Loren Oki.

about which tools can provide meaningful information about each attribute. Then, make any necessary modifications in the four right column headings for selection tools (adding columns if additional selection tools are necessary). Mark which tools will be used as primary and secondary methods for each attribute.

Employers may feel strongly about using a one- or two-week trial period to evaluate a potential employee. A trial phase in conjunction with selection tools can be very effective. However, a trial period makes a poor substitute for a systematic selection approach: all too often a candidate that is barely qualified is allowed to stay on. The chances of selecting the right individual for the job based solely on a trial period are greatly diminished.

## Step 2: Prepare questions and situations for written and practical tests, the interview and reference checks

The next step is to convert important skill areas into specific questions or activities for the application, inter-



**EMPLOYEE SELECTION PROCESS-**

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**Skills, knowledge and abilities** may be measured using different tools at different stages of the selection process. An “X” indicates a principal method for measuring that skill, knowledge, or ability; a “0” indicates a secondary method.

| Skills/Knowledge/Ability             | Test | Interview | Application | Reference Check |
|--------------------------------------|------|-----------|-------------|-----------------|
| Operating wheel and crawler tractors | X    |           | 0           |                 |
| Adjusting/calibrating equipment      | X    |           |             |                 |
| Maintaining equipment                | X    | 0         | X           |                 |
| Using implements                     | X    | 0         |             |                 |
| Controlling weeds, pests, diseases   | X    | 0         |             |                 |
| Directing efforts of others          | 0    | X         | X           | 0               |
| Training employees                   | 0    | X         |             |                 |
| People skills                        | X    | X         |             | X               |
| Reading and processing information   | X    |           |             |                 |

view and tests. Also, questions for the reference check may be drawn up. After you have modified the left-hand column in the table for the specific job you are trying to fill, it can serve as a checklist of attributes to be verified by your selection tools.

Areas of inquiry can help determine an applicant’s aptitude for interpreting plant health distress signs, capability with measuring instruments, command of another language, understanding of labor management principles, lifting strength, or welding expertise. Results are used to assess a candidate’s technical knowledge, general problem-solving ability, interest in the operation and other job-related attributes. Some queries or activities will elicit responses that can be judged objectively, such as how much pesticide should be mixed into a given number of gallons of water. Other responses may be more subjective, such as to an inquiry on how to deal with a negligent employee.

**Step 3: Assign a sequence to hurdles**

The nursery manager can think of the selection process as a series of hurdles that applicants must clear in order to obtain the job. However, some steps in the selection process should not be a strict hurdle to eliminate applicants from contention. For example, if scores on a records and computer test are used to eliminate contend-

ers for a nursery production manager position, the applicant pool might be narrowed inappropriately to those who understand records and computers but lack important hands-on skills.

The sequence of hurdles needs to be designed with care. However, if there are only a few applicants, progressive hurdles are unnecessary: If all applicants will be interviewed and all take a practical test (or job sample), it does not matter much which of the steps comes first. Similarly, the sequence of selection tools that are not used as hurdles is less important.

Often employers use biodata (information from applications and résumés) as the first step in eliminating applicants from consideration. This is useful if some applicants do not meet specific requirements, such as having a driver’s or pesticide applicator’s license. But excellent candidates may be eliminated if employers rely on more general qualifications — such as a certain number of years of experience — as a screening criterion. Longevity in a position may have little correlation with job proficiency. Furthermore, employers should not be overly influenced by nice-looking applications that may have been typed or completed by someone other than the candidate. Professional résumé services can make candidates appear quite attractive on paper. The caution

## EMPLOYEE SELECTION PROCESS-

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here, then, is that there is little relationship between an applicant on paper and on the job.

The sequence of the next hurdles is often based on expense. Written exams for technical or managerial positions (when ability to write is a requirement) are often less expensive to administer than interviews or practical tests. For this reason, they are an effective early hurdle. Generally, the most expensive and time-consuming selection tools are used later in the selection process. Reference checks and medical screening are usually the last two hurdles. (U.S. law requires that medical screenings, if they are used, take place after a job offer has been made.)

Inviting candidates to participate can include a description of the steps in the process, their sequence and any required applicant preparation. The sequence of hurdles may be programmed to minimize travel and expense for both applicants and employer. A preliminary telephone interview with out-of-state applicants may eliminate unnecessary travel. Written tests can sometimes be mailed out-of-state when they can be administered to applicants by a trusted, qualified third party.

### Step 4: Provide a realistic job preview

Applicants who have a clear understanding of what the job entails can make more informed decisions as to whether they want to apply. For instance, will the job meet their financial, emotional and social needs? Selected applicants who have an accurate understanding of the job — of both its desirable and difficult aspects — are more likely to stay and succeed.

When described to workers, conditions do not have to be labeled as positive or negative. Workers can make

their own judgment. For instance, working alone will be viewed positively by one applicant and negatively by the next.

The realistic job preview begins with the job announcement and position description. As prospective applicants inquire about the job, nursery managers can provide applications, position descriptions and additional information. Although some employers use the preliminary interview to learn about applicants, the best use of this selection tool is to provide information to applicants.

If interviews as well as practical and written tests truly mirror the job requirements, these can also help candidates understand the job. For example, if an applicant must demonstrate lifting as part of the practical exam, he may eliminate himself if he has a bad back.

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This article is an excerpt adapted by Steve Tjosvold and Julie Newman from “Practical steps to employee selection,” In: Labor Management in Agriculture: Cultivating Personnel Productivity, 2003

<http://www.cnr.berkeley.edu/ucce50/ag-labor/7labor/02.pdf>.

**Careful employee selection enables the employer and new personnel to start out on a positive path.**  
Photo by Loren Oki.



## SCIENCE TO THE GROWER: Pipe dreams and postharvest schemes

by *Richard Evans*

This is a story about orangeburg. With luck, it's the only one you'll ever encounter. The eponymous product of a manufacturing town in New York, orangeburg is a pipe material made from wood that has been ground up, compressed and impregnated with coal tar pitch. It's basically a cellulose pipe. It collapses easily because it doesn't hold up to pressure. During the housing boom after World War II, when cast iron was hard to come by, it was used for sewer lines in some towns. Towns like Davis, where I live. You might think such a material would be a poor choice for a buried pipe. I do. I've learned a lot about it ([www.sewerhistory.org](http://www.sewerhistory.org)) because the orangeburg sewer line under my house just collapsed. More precisely, it collapsed under the concrete slab that some moron poured for an addition to my house about 30 years ago. By then the orangeburg already had surpassed its expected lifespan, so I guess I'm lucky it survived this long.

Intractable problems with clogged and collapsing lignified cellulose pipes got me thinking about their role in shortening the vase life of cut flowers. Despite the absence of an orangeburg prompt, Li and others (2012) at Zhongkai University in China had something similar on their minds. To find out how bacteria affect vase life of cut roses, they isolated the dominant strains from the base of cut stems of 'Movie Star' roses, added known amounts of those bacteria to vase water and examined the effect on vase life. They also tested the efficacy of an antibacterial agent, nanosilver. Nanosilver materials, which contain nanoscale silver particles (5 to 50 nanometers in diameter, so you could line up about a million of them per inch, if you were patient enough), have been shown to inhibit bacterial growth. The rose researchers isolated four dominant bacterial strains and found that all are capable of plugging xylem, the water-conducting tubes in plant stems. An initial bacterial concentration of 100 million colony-forming units per milliliter of vase water caused cut roses to lose fresh weight because water loss from transpiration exceeded the capacity of the partially plugged stems to conduct



**Problems with clogged and collapsing lignified cellulose pipes (xylem) shortens the vase life of cut roses. Photo courtesy of Michael Reid.**

water. Cut stems that were pretreated for 1 hour with 50 ppm nanosilver had almost no bacteria in the xylem or on the cut surface. This adds further support to earlier work by the group (Lü and others 2010), which showed that a nanosilver pretreatment can double the vase life of roses.

Industry veterans among you may recall that some cut flowers may be pretreated with silver thiosulfate to protect them from effects of ethylene. However, product registration issues, along with strict regulation of waste disposal because of concerns about environmental effects of silver, have limited the commercial availability of STS products. So what about the effects of nanosilver? Nanosilver materials are relatively new, so there isn't much of a record on which to judge. Luoma (2008) and Marambio-Jones and Hoek (2011) have written reviews urging caution when introducing nanosilver into waste streams, but more testing is likely before regulatory guidelines are established. Stand by.

Perik and others (2012) in the Netherlands investigated



**SCIENCE TO THE GROWER-**

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the role of xylem in flower vase life from another angle. They asked whether stem bending in cut gerberas (a.k.a. “conking”) is due to adverse water balance (i.e., more water lost to transpiration than gained by uptake through the stem), or to mechanical weakness of the stem. They found that water loss during vase life didn’t occur in the flower head, but did occur 4 to 6 inches below the flower head, in the region where stem bending usually occurs. When the researchers prevented water loss through that part of the stem, the time to stem bending doubled from 7 to 14 days. They also wondered whether bending occurs in some gerbera varieties because the growing stem tissue is weak and collapses under adverse vase life conditions. They examined the amount of cell wall thickening in gerbera stems and found that stems prone to bending have less thickening compared with unbent stems. Thus, stem failure in gerbera seems to be the result of both mechanical weakness and excessive water loss in the sensitive region of the stem. The authors offered no recommendation for solving these problems, but I think replacing the orangeburg might be a start.

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**Stem failure in gerbera seems to be the result of both mechanical weakness and excessive water loss in the sensitive region of the stem. Photo courtesy of Michael Reid.**

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- Luoma SN. 2008. Silver nanotechnologies and the environment: old problems or new challenges? *Woodrow Wilson International Center for Scholars, Project on Emerging Technologies* 15. Washington, DC. 72 pp.
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- Perik RRJ, Razé D, Harkema H, Zhong Y, van Doorn WG. 2012. Bending in cut Gerbera jamesonii flowers relates to adverse water relations and lack of stem sclerenchyma development, not to expansion of the stem central cavity or stem elongation. *Postharvest Biology and Technology* 74: 11-18.

## DISEASE FOCUS: Developing a successful disease scouting program

by Deborah M. Mathews

Most greenhouse and nursery operations have at least an occasional scouting routine for insects. Fewer have scouts for detecting developing diseases. Such formal scouting efforts are usually done on a weekly or twice monthly schedule by one person or a handful of trained personnel. While it is important that you have regular inspections performed by those trained specifically for that purpose, on a daily basis dozens of workers come into contact with plant products at various stages of their production. Businesses should not overlook the possibility of educating the majority of workers in the basics of disease symptomatology to increase the success of early detection. This article will provide an overview of common signs to look for.

Fungi are responsible for approximately 85% of all plant diseases. Spores and/or mycelium — the fuzzy, hairlike fungal growth structures produced on leaves, stems and flowers of infected plants — can lead to the rapid dissemination of disease throughout an operation (fig. 1A).

Symptoms on the upper surfaces of leaves are most obvious, but it is important to turn leaves over and look at the lower surfaces to detect several pathogens including downy mildew (fig. 1B,C). Yellowing, wilting and stunting are signs that root pathogens may be present. When transplanting, an assessment of root health can be made. Healthy roots should be white and crisp, with branching and length appropriate for the age of the plant. Diseased roots will be brown or black and brittle; the outer sheaths may easily separate from the center (fig. 1D).

Bacteria represent only 5% to 10% of plant disease issues and are relatively rare in outdoor settings in California due to generally low humidity levels, except in coastal regions. However, humidity levels in green-



**Fig. 1. White hairlike mycelium and spores of powdery mildew on snapdragon leaves, flowers and stems (A); downy mildew spores on the underside of a leaf (B) with corresponding areas of yellowing and browning on the upper surface (C); and yellowing and wilting resulting from diseased roots, brown in color, with poor branching compared to healthy lisianthus plant (D). Photos by Jack Kelly Clark, courtesy of the UC Statewide IPM program.**

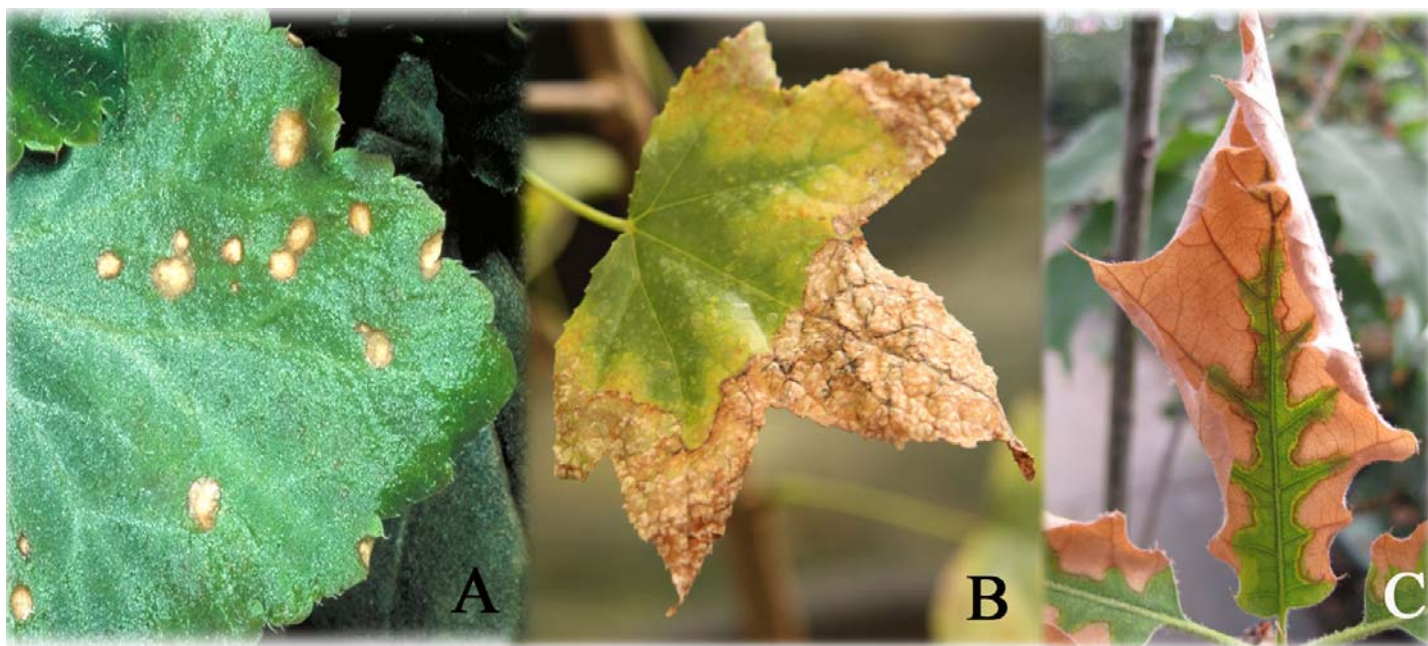
houses and nurseries can be relatively high, encouraging bacterial infections. Early signs include yellow or brown spots on leaves, which may be followed by water soaked areas around these lesions that can coalesce, killing whole leaves and plants (fig. 2A). Bacterial leaf scorch caused by *Xylella fastidiosa* is an increasingly common pathogen found in shrubs and trees that can be recognized by necrosis (dead tissue) at the tips or margins of leaves that continues to move inward toward the center of the leaf (fig. 2B,C). There may be a yellow zone between these dead areas and the healthy green tissue.

Viruses cause about 10% of plant diseases, but in ornamentals this number can approach 20%. By far the most common symptom seen is a generalized mottling



**DISEASE FOCUS:**

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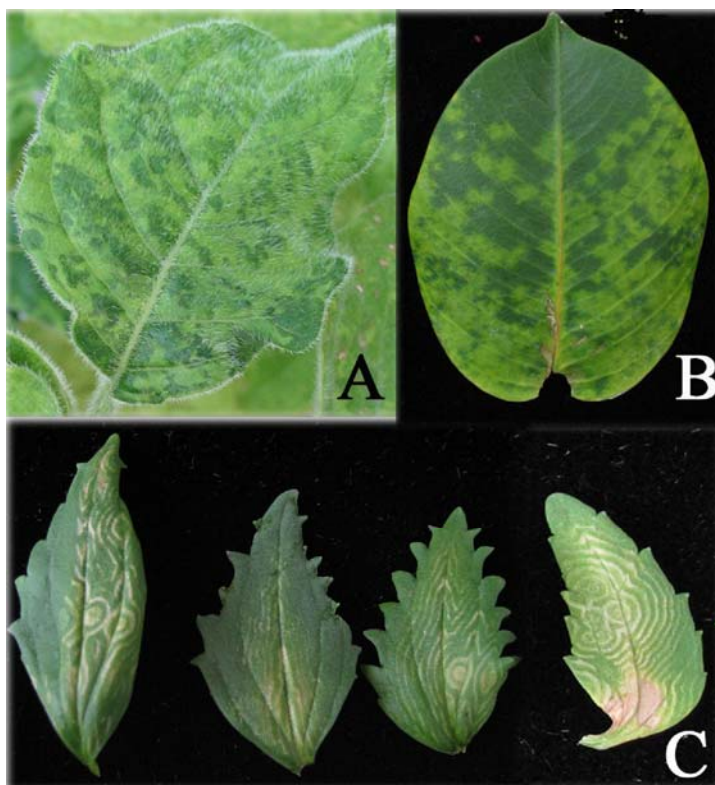
**Fig. 2. Bacterial leaf spots caused by *Xanthomonas campestris* pv. *begoniae* on begonia (A) and marginal necrosis caused by *Xylella fastidiosa* on liquidambar (B) and oak leaves (C). Photos by Jack Kelly Clark, courtesy of the UC Statewide IPM program (A) and Deborah Mathews (B, C).**

or “mosaic” on leaves that creates light green or yellowed areas on an otherwise normally colored leaf (fig. 3A,B). Ringspots or line patterns are also commonly seen with some viruses (fig. 3C).

Regardless of the types of pathogens detected, plants with any of the described symptoms should immediately be removed from the production area and placed in an isolated location for further inspection and possible testing. The place of origin should be marked for further inspection and possible quarantine of plants in that area. Having extra pairs of eyes trained to recognize problems early on can pay great dividends in the end by eliminating widespread disease issues.

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**Fig. 3. Common virus symptoms on leaves. Mosaic or mottle (A and B), ringspots and line patterns (C). Photos by Deborah Mathews.**

## INSECT HOT TOPICS: Emerald ash borer on the move

by James A. Bethke

Some of the most attractive insects on the planet can also be some of the most deadly — not to humans, but to plants. For example, the emerald ash borer (EAB for short), *Agrylus planipennis* (Fairmaire) (Coleoptera: Buprestidae), is a boring beetle that is quite attractive (fig. 1). The beetle is small, only 0.39 to 0.51 inches (10 to 13 mm) long, and metallic green. Essentially all ash trees (*Fraxinus* spp.) are disappearing in areas that are infested with this beetle, and all species of ash appear to be susceptible. Indeed, it has been estimated that EAB has killed at least 50 to 100

million ash trees so far. In California, we have a couple of species of boring beetles and other beetles that are also metallic green, and the native Pacific flatheaded borer can cause significant damage to backyard fruit trees (see links below for information about these beetles). However, the local beetles are not as devastating as the invasive EAB, which is now considered one of the most destructive non-native insects in the United States.

EAB is originally from eastern Russia, northern China, Japan and Korea. However, it is moving fast in North America, spreading across the United States and Canada in all cardinal directions from its original detection site in Michigan in May 2002. Its presence has been confirmed in Ohio (2003), Indiana (2004), Illinois (2006), Maryland (2006), Pennsylvania (2007), West Virginia (2007), Virginia (2008), Wisconsin (2008), Missouri (2008), Minnesota (2009), Kentucky (2009), New York (2009), Iowa (2010), Tennessee (2010), Connecticut (2012) and Kansas (2012).

EAB passes through four instars before pupating near the bark and emerging as an adult. The larvae are creamy white, and dorso-ventrally flattened. As they feed on the cambium layer or vascular system of the plant, they create long serpentine galleries filled with



**Fig. 1. Emerald ash borer adult. Photo by David Cappaert, Michigan State University, Bugwood.org.**

frass, which enlarge in width as they grow, eventually girdling and killing the tree. When fully mature, fourth-instar larvae (fig. 2) are 1.02 to 1.26 inches (26 to 32 mm) long. EAB adults feed on foliage and both sexes are good fliers.

Initial symptoms of an EAB attack begin with a general yellowing and thinning of the foliage. Branches begin to die from the top of the tree downward and the tree eventually dies. Typical signs of an EAB-infested tree are the presence of D-shaped emergence holes about 1/8 inch diameter, serpentine tunneling under the bark, or the presence of the adult or larvae in infested trees. It is common for all the trees in a single neighborhood to die synchronously. In a typical small town situation, 60 to 70% of the ash trees will begin to die within 4 years following an infestation, and eventually all the local ash trees will die.

Ash is an important species in U.S. timber production so quarantines imposed by state and federal agencies back east have caused substantial economic losses for plant and wood products industries. Further, the cost of removing infested trees and replanting has been staggering. This is because ash has been extensively used as a landscape tree in urban/suburban areas due to its tolerance of adverse site conditions. In addition



**INSECT HOT TOPICS:** continued from  
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to economic impacts, EAB has significant potential to change our urban and natural ecosystems: In natural forests, this pest may drastically change the forest composition; in urban areas, infested trees that are dead and dying trees will pose hazards to local residents and property.

One of the primary methods of transport of EAB is in firewood. Moving firewood and other ash wood materials in areas infested with this pest is heavily regulated. California nursery growers need to take EAB seriously and be on the lookout because movement of ash trees and maintenance of stock trees will be difficult in quarantine areas.

For general information about EAB, economic impacts and frequently asked questions, see the following web sites.

<http://www.insectidentification.org/insect-description.asp?identification=Emerald-Ash-Borer>  
[http://en.wikipedia.org/wiki/Emerald\\_ash\\_borer](http://en.wikipedia.org/wiki/Emerald_ash_borer)  
<http://journalistsresource.org/studies/environment/sustainability/invasive-forest-insects/>  
<http://www.invasivespeciesinfo.gov/animals/eab.shtml#.UE7YFhh5ITc>  
<http://www.emeraldashborerfaq.com/>

For a map with links to the spread and infestation, as well as information about EAB in other states, including the newest reported infestation in Kansas see the following links.

<http://www.emeraldashborer.info/>  
[www.ksda.gov/plant\\_protection/content/379](http://www.ksda.gov/plant_protection/content/379)

For a good sequence of photos and a short film, see the following links.

<http://www.hungrypests.com/the-threat/emerald-ash-borer.php>  
<http://archive.org/details/gov.usda.aphis.green.menace>

For information about other metallic beetles and the native Pacific flatheaded borer, see the following links.

[www.ipm.ucdavis.edu/PMG/GARDEN/FRUIT/PESTS/grfruitbeetle.html?printpage](http://www.ipm.ucdavis.edu/PMG/GARDEN/FRUIT/PESTS/grfruitbeetle.html?printpage)  
<http://www.ipm.ucdavis.edu/PMG/r602300811.html>  
<http://research.pomona.edu/bfs/2012/08/25/recent-additions-to-the-bfs-invert-list-2/>  
<http://www.realmonstrosities.com/2012/01/tiger-beetle.html>  
<http://waynesword.palomar.edu/ww0502.htm>

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**Fig. 2. Emerald ash borer larva. Photo by David Cappaert, Michigan State University, Bugwood.org.**



# UC Cooperative Extension Santa Cruz/Monterey Counties

## REGIONAL REPORT: Ag economic issues and LBAM update

by Steve Tjosvold

### Monterey County Ag Economic Contributions

A report produced for the Monterey County Agricultural Commissioner's office conveys the importance of Monterey County agriculture's role in maintaining a vibrant local economy. Using current economic data, the report analyzes the total contribution to the local economy, including economic output, jobs and economic "ripple effects."

In summary Monterey County agriculture contributes a total of \$8.2 billion to the local economy, including:

- \$5.1 billion in direct economic output, which represents 18.5% of the county's total economic output and makes agriculture the county's largest economic sector.

- \$3.1 billion in additional economic output in the form of expenditures by agriculture companies and their employees.

- 73,429 jobs in Monterey County economy: 45,140 direct employees, which is about 20% of all jobs in the county, or 1 out of every 5 workers. Also, 28,289 additional jobs, made possible by expenditures by agriculture companies and their employees.

- Makes \$102.2 million in indirect business tax payments each year. Depends on the Salinas Valley for 70% of its economic output and 79% of agriculture jobs.

- In 2010, nursery and floriculture crops contributed 8 % of the total gross economic output.

You can obtain the full report by downloading at this link: <http://ag.co.monterey.ca.us/>.

### Labor Shortages Plague Pajaro Valley Growers

An article by Jennifer Squires of the *Watsonville Patch* outlines how the national agriculture labor shortage is manifesting itself in the local agriculture industry. According to the author, "some farmers in the Pajaro Valley said that their labor crews are 10% to 20% off previous years." Most blame it on tighter immigration policies that cause fewer migrant workers to come across the border from Mexico.

The problem is pronounced in California, where farmers are reporting labor shortages as high as 50%, according to Rayne Pagg, manager of Federal Policy Division at the California Farm Bureau Federation. The coalition released a survey to its members in September asking for data on their labor issues. The Farm Bureau reported that during the first week of the survey, 80% of farmers who responded were not been able to hire enough people this year to pick crops, including berries, tree fruit and wine grapes.

For the complete *Watsonville Patch* article, see:

<http://watsonville.patch.com/articles/farm-labor-shortages-plague-pajaro-valley-growers>.

### Radio Program Looks at Farm Labor Shortage

Local berry farmer Tom Am Rhein, past president of the Santa Cruz County Farm Bureau, is the guest of a MetroFarm radio program, *The Food Chain*, in which he comments on state and local agricultural labor. Topics include the nature of farm labor and labor shortages. Go to the following link for the "Farm Labor's Lost II," show #788:

[http://metrofarm.com/mf\\_Food\\_Chain\\_Radio.php](http://metrofarm.com/mf_Food_Chain_Radio.php).

*The Food Chain* is an audience-interactive agriculture news radio program, which is syndicated on commercial radio stations throughout the United States and streamed live and on demand via the internet. For more information, including a list of radio station affiliates, call Michael Olson at 831-566-4209 or email [michaelo@metrofarm.com](mailto:michaelo@metrofarm.com).

### LBAM Field Data Available for Pest Management

Light brown apple moth (LBAM) trapping data near nurseries and farms is now available from 5 areas in this region. The data will be updated every 2 weeks as part of our current research program. With a knowledge of LBAM moth migration patterns, nursery operators can make better LBAM management decisions in their nurseries. See our website for more information:

<http://cesantacruz.ucanr.edu/>.

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**FIELD OBSERVATIONS**

**F**usarium wilt is still a concern with the traditional crops, cyclamen and carnations. Two questions that came to me this month about the management of Fusarium wilt reminded me that not a lot has changed in disease management over the years, particularly with these diseases.

There are no fungicides that are really effective for Fusarium wilt diseases caused by soil-inhabiting, host-specific forms of *Fusarium oxysporum*. You might see “Fusarium” on a chemical label, but the primary fungicide activity is usually on other soil-borne or foliar *Fusarium* species, not *Fusarium oxysporum*. I recall when Bayleton became available over 20 years ago, a carnation grower misinterpreted the “Fusarium” listing on the product label and drenched the fungicide into the soil to attempt to manage Fusarium wilt. Unfortunately, at the rate applied, it had a fairly strong growth-regulating effect. Subsequent growth of the carnation stems had dramatically shortened internodes. It took months of growth to work out of the plant and soil, but eventually the crop began to produce normal-length cut flowers.



**Symptoms of Fusarium wilt on cyclamen. Photo credit: Department of Plant Pathology Archive, North Carolina State University, Bugwood.org.**

Sanitation is the key to Fusarium wilt disease management. Often *F. oxysporum* can come with cyclamen transplants, or even with the seed. So starting out with clean stock is critical. Know your source. Use clean soil; don't reuse infested soil. When carnations are planted in soil for cut flower production, the soil often is infested in the ground somewhere outside the fumigated /steamed soil. With time, healthy roots move into infested soil, or the infested soil moves to the clean beds via contaminated shoes or tools, and eventually roots become infected.

Here's a link to a general description and management information for *F. oxysporum*:

<http://www.ipm.ucdavis.edu/PMG/r280100811.html>.

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**Online Newsletter Archive**

Prior to 2010, this newsletter was published as “CORF News” by the California Ornamental Research Federation (UCNFA’s former identity). An archive of these publications from 1999—2009 can be found online at this link:

<http://ucanr.edu/sites/UCNFA/news/>



# UC Cooperative Extension Ventura and Santa Barbara Counties

## REGIONAL REPORT: News and Resources Related to Ag Labor

by Julie Newman

### Ag Labor Shortage

There is an increasing agricultural labor shortage in Ventura, Santa Barbara and San Luis Obispo counties. In response, some growers and labor contractors have been forced to raise pay and benefits. Rene Van Wingerden, a greenhouse grower who produces cut flowers and cucumbers, had to raise beginning wages in Nipomo so he could compete with local vegetable growers. Richard De Leon, who runs a labor contractor business in Ventura County and Mexico, raised wages 5 percent annually over the past few years to entice work crews. He currently pays \$11.50 to \$12 an hour, but still finds that he cannot obtain sufficient labor when it is needed.

Santa Barbara County flower and nursery growers report that it is more difficult to replace employees who leave and that work pool applicants are not as qualified as in previous years. They have partially addressed the problem by hiring high school students for summer work and on Saturdays. The students are typically relatives of employed workers. Other growers are coping with the labor shortage by sharing harvest crews. Tom Ikeda says that growers in his Central Coast vegetable cooperative have found that crew sharing has been a “win-win” for workers who have more steady employment and for farmers who can get their crops harvested during critical peak periods.

The labor shortage problem is tied to the unwillingness of most Americans to do agricultural work and reliance on a mostly Mexican workforce. The size of the Mexican workforce has dwindled due to declines in immigration that began about five years ago. For the first time in two decades, flows of unauthorized Mexicans into the United States have significantly slowed, according to recent findings by the Pew Hispanic Center, which is a nonpartisan research organization that is part of the nonprofit Pew Research Center in Washington, D.C. Experts contributing to this report surmise that immigration has declined because of fewer U.S. jobs, tougher border patrols, more dangerous border

crossings, increased deportation, lower Mexican birthrates and Mexico's improving economy. There may now be more people leaving the United States and going to Mexico than vice versa.

Agricultural labor shortages are a common problem throughout California, particularly in agricultural areas farther north of the Mexican border. The state Department of Food and Agriculture reported in 2010 that “labor instability” has caused some growers to stop growing high-value crops or move production overseas. Other farming states are also experiencing a decrease in agriculture workers.

Sources: “Agriculture producers face dropping supply of harvesters” by Carol Lawrence, *Ventura County Star*, 25 August 2012; “Farmers report early signs of labor shortages” by Steve Adler, *AgAlert*, California Farm Bureau Federation, 9 May 2012; discussion with Santa Barbara County Flower and Nursery Growers Association Board members, 2-4 October 2012.

### Carpinteria Farm Worker Housing Renovation Project

The Chapel Court Apartments, a farm worker housing project built in Carpinteria nearly 40 years ago, is undergoing extensive renovation. The project includes new roofing, gutters, double-pane windows, doors, exterior lights, fire sprinkler systems, and interior and exterior painting of the 28-unit facility. New hot water heaters and appliances will be installed in each unit and the kitchens and bathrooms will be renovated. More than 40 volunteers participated in a kickoff community event last June to paint the property fence. Construction will begin in November and is slated to be completed in approximately 6 months.

The project is spearheaded by Peoples' Self-Help Housing (<http://www.pshhc.org/>), a nonprofit organization that helps provide housing for low-income, special needs, elderly, and previously homeless residents in San Luis Obispo, Santa Barbara and Ventura counties. Peo-



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**Renovation begins this November of the Chapel Court Apartments in Carpinteria, a 28-unit farm worker housing project originally constructed nearly 40 years ago (Photo courtesy of Peoples' Self-Help Housing).**

Peoples' Self-Help Housing secured more than \$1 million in funding for the project from the Joe Serna Jr. Farmworker Housing Grant Program (administered by the Housing and Community Development Division, State of California) and the U.S. Department of Agriculture. For more information call Peoples' Self-Help Housing Executive Director Jeanette Duncan at (805) 540-2454 or Rochelle Rose, Resource Development Director, at (805) 699-7227.

### **Fillmore Farm Worker Housing**

House Farm Workers! (<http://aginnovations.org/projects/housefarmworkers/>) was founded in 2004 by the Ventura County Ag Futures Alliance Farm Worker Housing Task Force to promote and support the development of decent, safe, sanitary and affordable housing for farm workers through community education, dialogue and advocacy. Accomplishments include facilitating the planning and development of 357 farm worker housing units in Ventura County. One opportunity they are working to promote is low-cost room and board currently available in Fillmore at one of a few operational labor camps left in Ventura County. Details are provided in downloadable flyers in both English

([http://aginnovations.org/images/uploads/Fillmore\\_Labor\\_Camp\\_Flyer\\_English.pdf](http://aginnovations.org/images/uploads/Fillmore_Labor_Camp_Flyer_English.pdf)) and Spanish ([http://aginnovations.org/images/uploads/Fillmore\\_Labor\\_Camp\\_Flyer\\_SPANISH.pdf](http://aginnovations.org/images/uploads/Fillmore_Labor_Camp_Flyer_SPANISH.pdf)).

Of the more than 20,000 farm workers in Ventura County, two thirds are permanent county residents who must pool their resources to live in over-crowded apartments and houses or in structures not intended for human habitation. This is because the Ventura County's housing market is among the least affordable in the United States and farm workers in Ventura County only average approximately \$17,000 annually.

### **Migrant Education Programs**

Regional migrant education programs for students in Kern, San Luis Obispo, Santa Barbara and Ventura counties are designed to strengthen the school, community and family experiences of children and their families. The programs are supplemental and assist migratory students to succeed in their academic course work, improve staff's ability to teach migratory students effectively, and build a support network for educators, students and their families.

Three programs are available to all eligible migratory children and parents throughout the Region: Migrant Education Even Start (MEES), Portable Assisted Study Sequence (PASS) and MiniCorps. MEES provides family literacy and parenting programs for parents and their preschool children, PASS provides supplementary courses towards graduation in English and Spanish for migratory students in grades nine to twelve, and MiniCorps college students from migrant family backgrounds provide academic tutoring and social support for migratory students.

The Ventura County Education Office is the local education agency for migrant education programs in Ventura County. The programs are operated by 13 school districts with approximately 100 schools. For more information, contact Joe Mendoza, Director Special Populations Educational Support, at (805) 437-1520, [jmendoza@vcoe.org](mailto:jmendoza@vcoe.org).

The Santa Barbara County Education Office is the local education agency for migrant education programs in 18 school districts in Santa Barbara and San Luis Obispo

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counties that provide services to 3,000 migrant students and families. For more information, contact Maria Garcia-Cacique, Director Migrant Education, at 805-922-0788, [mgcacique@sbceo.org](mailto:mgcacique@sbceo.org).

### **Ventura County Publications**

Farm workers face many challenges including low wages, seasonal work, high occupational hazards, lack of adequate housing, lack of medical and retirement benefits, poor transportation, insufficient training, illiteracy and language barriers, physical and cultural isolation, lack of respect, illegal residence and lack of documentation. There are also external factors that affect farm workers including immigration and trade policy and state and national legislation. The following papers and reports discuss various topics that affect farm workers in Ventura County and/or present statistical information related to agricultural labor issues.

“Ag Worker Health Access: A Comprehensive Local Solution.” Ventura County Ag Futures Alliance, Issue Paper No. 5, 2008.

[http://aginnovations.org/images/uploads/Ventura\\_AFA\\_Paper\\_5\\_Farm\\_Worker\\_Health.pdf](http://aginnovations.org/images/uploads/Ventura_AFA_Paper_5_Farm_Worker_Health.pdf).

“Farm Worker Housing: A Crisis Calling for Community Action.” Ventura County Ag Futures Alliance, Issue Paper No. 2, June 2002.

[http://aginnovations.org/images/uploads/FWH\\_Report\\_FINAL.pdf](http://aginnovations.org/images/uploads/FWH_Report_FINAL.pdf).

“The Future of Ventura County Agriculture: Issues and Opportunities for Workers and Growers.” Workforce Investment Board of Ventura County, 2006. [http://farmbureauvc.com/pdf\\_forms/WIB\\_report.pdf](http://farmbureauvc.com/pdf_forms/WIB_report.pdf).

“Ventura County's Agricultural Future: Challenges and Opportunities.” Ken Kambara, Dan Hamilton, Kirk Lesh, Chuck Maxey, Bill Watkins, and Susan Weaver, May 2008.

<http://www.vcrd.org/PDFs/Ventura%20County's%20Agricultural%20Future.pdf>.

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## **New publications from Agriculture and Natural Resources**

*compiled by Steve Tjosvold*

### **IPM in Practice, Second Edition**

This manual from the UC Statewide IPM Program is the most comprehensive, practical field guide ever developed for setting up and carrying out an IPM program in any type of crop or landscape. IPM in Practice features IPM strategies for weed, insect, pathogen, nematode, and vertebrate pests and provides specific information on how to set up sampling and monitoring programs in the field. This manual covers methods applicable to vegetable, field, and tree crops as well as landscape and urban situations. \$35.00

Editor: Mary Louise Flint  
ANR Publication #3418

<http://anrcatalog.ucdavis.edu/DPRPestControlAdvisorPCAExamPrep/3418.aspx>

### **Deer Mouse: Pest Notes for Home and Landscape**

The deer mouse carries hantavirus, which can be deadly to people. Searching for food, the mice enter houses and cabins through small holes and cracks, but what they leave behind can make you very ill. Learn to recognize, exclude, and control these pests.

Author: N. Quinn, R.A. Baldwin, and R. M. Timm

ANR Publication #74161

<http://anrcatalog.ucdavis.edu/Items/4161.aspx>

## UCNFA Educational Programs for 2013 and 2014

information at <http://ucanr.edu/sites/UCNFA/>

Best Management Practices Programs for  
California Nurseries: Review and Outlook  
January 9, 2013 San Marcos

Nursery/Floriculture Disease Management Sym-  
posium  
May 2013 San Marcos

ABCs of Horticulture (English and Spanish)  
Summer 2013 Watsonville and Central Valley

ABCs of Fertilizers (English and Spanish)  
Summer 2013 Watsonville and Central Valley

ABCs of Plant Pathology (English and Spanish)  
Summer 2013 Central Valley

ABCs of Pests  
Summer 2013 Ventura and Central Valley

Water Quality Conference  
September 2013 San Marcos

California Nursery Conference  
October 2013 Ontario

Nursery/Floriculture Insect Management Symposi-  
um  
Fall 2013 Watsonville

Nursery BMPs Workshops  
Fall 2013 Watsonville, Ventura, Central Valley and  
other locations

Biocontrol Symposium  
February 2014 San Marcos

ABCs of Horticulture (English and Spanish)  
Summer 2014 San Marcos

ABCs of Fertilizers (English and Spanish)  
Summer 2014 San Marcos

Personnel Supervision  
TBD, Webinar or online presentation



Photo by L. Dodge



## UCNFA PARTNERS



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Get timely information on news and other events of interest to the California ornamental horticulture industry.

Find links to Facebook pages for nursery and floriculture businesses, organizations and people in the industry.