

**Santa Barbara County**

# **CENTRAL COAST AGRICULTURE HIGHLIGHTS**

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August 2003

## **Printing and Mailing Costs - We Need Your Help**

*Franklin Laemmlen - Editor*



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During the 2002-2003 financial year, we (Santa Barbara County, University of California Cooperative Extension) incurred an overdraft in our paper, printing and mailing budget allocation. We were able to cover this expense with other funds. However, with anticipated tightening budgets, we will not have the ability to readjust funds in the future.

We value our readers and your comments and feedback. However, we need to reduce costs, and we are soliciting your help.

We would like you to access this newsletter on our website. If you agree to this request, please fill out and return the form on the last page of this newsletter to provide us with your e-mail address.

The following will then happen. Your e-mail address will become part of a "listserv" in our clientele data base. We will continue to publish our newsletter six times a year as usual. The newsletter will be posted on our website <http://cesantabarbara.ucdavis.edu> as a pdf file. When a new issue is ready, we will notify you of this fact by e-mail, telling you to go to the website to download the newsletter.

Thank you for your help in this effort. We already have a number of readers on line, we hope we can add your name to this list. If you are unable to receive our *Central Coast Agriculture Highlights* electronically, we will be pleased to continue sending it by mail.



# Consumer-Driven Agriculture: Changing U.S. Demographics Influence Eating Habits

Mark Gaskell

Article written by Nicole Ballenger and James Blaylock.  
Reprinted from Amber Waves, an on-line publication of the USDA  
Economic Research Service, available at  
<http://www.ers.usda.gov/Amberwaves/April03>

Beyond our bustling cities, America's farmlands are ostensibly a Norman Rockwell picture of calm and stability. Red barns, majestic silos, rustic farmhouses, and pastures of grazing livestock are reassuring images that recall a seemingly simpler age. Yet just beyond the old-fashioned barn door are the products of a telecommunications age that have transformed farming into a modern and global business. We find tractors equipped with global positioning systems for precision preparation and management of fields, Internet access to keep farmers abreast of current events and minute-by-minute changes in commodity prices, and sophisticated systems to manage risk, finances, and decision making in a dynamic global marketplace. Today's commercial farmer can be as connected to the modern world as the urban entrepreneur.

Technology brings the varied needs and evolving wants of modern consumers living thousands of miles away to the attention of farmers. Successful producers know that consumers are key to economic viability and growth, and that consumers' preferences drive the evolution of the industry. Closer business ties and stricter quality controls throughout the food supply chain are hallmarks of consumer-driven agriculture. Recent ERS research has identified three broad demographic trends that will shape future U.S. food markets: more mature consumers, more diversity, and more people to feed. These trends were translated into projections of growth in food expenditures and in demand for specific commodities between 2000 and 2020. The ERS models do not capture some of the subtler changes in our food system; they do, however, allow us to compare the importance of the different demographic trends to specific food and commodity market segments. Moreover, we may posit whether the character of America's farmlands and farm businesses will change as much as the profile of our population 20 years from now.

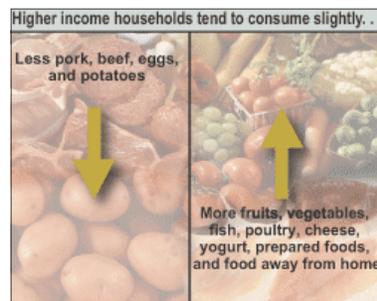
## More Mature Consumers

The aging of the baby boom generation, born between 1946 and 1964, will accelerate growth in the number of Americans older than 65, who will number



54 million by 2020. Although the U.S. population under age 18 will increase by 7 million by 2020, it will decline as a share of the total population. Consequently, catering to the food preferences and eating habits of older Americans - who are likely to be more health-conscious than younger Americans - will be an important marketing strategy for food suppliers.

The growth of America's older population is likely to carry mixed messages for U.S. agriculture. Older Americans typically eat less food than younger ones due to lower activity levels and energy needs, and dine out less frequently. Hence, the aging trend may reduce the nation's appetite for some foods and dampen the popularity of eating out. On the other hand the demand for foods preferred by seniors will benefit from the age distribution shift. According to ERS projections, small declines in per capita consumption of fried potatoes, cheese, sugar, beef, and poultry are expected, while the increase in older consumers could signal an increase in per capita consumption of "other potatoes" (such as baked), eggs, fish, fruits, and vegetables.



## A Mature Market

American consumers participate in a food system that is characterized by the fulfillment, if not satiation, of basic needs - what is termed a mature market. Consumers of all ages and recent

immigrants have higher standards of living now than in earlier times, and benefit from a highly productive agricultural sector. Consequently, most people are generally very well-fed and not apt to need or want larger quantities of food.

However, rising incomes allow Americans to continue to upgrade their food choices to include, for example, more expensive cuts of meats, exotic vegetables, luxury food items, ready-to-eat meals, and higher priced restaurants.

Real per capita income grew 1.8 percent per year during 1978-88, and 1.2 percent per year during 1988-98. A conservative forecast of real per capita income growth is that it will continue to grow about 1 percent annually between 2000 and 2020. Of concern to suppliers of mature U.S. food markets is how much of their higher disposable incomes American consumers will spend on food and what food products will be demanded.

Over the past few decades, Americans have dedicated a declining share of their household budgets to food. Consumers with rising incomes are, however, quite willing to increase food spending if it means acquiring more convenience, better quality, or more of other valued food attributes. In a sense, higher incomes allow food choices to become expressions of personal preferences, values, and lifestyles rather than necessities. Moreover, higher incomes allow Americans to spend more on meals away from home, whether for fast food or a candlelit dinner in an elegant restaurant. With per capita income growth projected at 1 percent annually between 2000 and 2020, per capita food expenditures in 2020 are expected to be about 6 percent above those in 2000 as a result of higher incomes.

According to ERS researchers, higher incomes drive up per capita food expenditures more rapidly than per capita quantities consumed for virtually all foods. Hence, more of the extra consumer dollar will go to "quality" than to quantity. More prosperous consumers prefer select cuts of meat, value-added products like lamb chops trimmed and dressed, and ready to pop in the oven, pre-marinated fish, single-serving lunchbox snacks, and pre-washed and bagged salad greens. Previous studies have found that as U.S. incomes rise, consumers spend more on expensive fresh foods, prepared foods, and dining out.

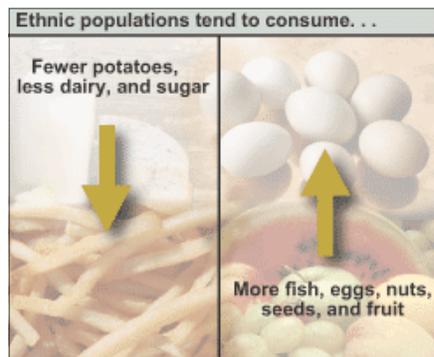
According to ERS projections, rising incomes will spur faster growth in per capita spending for dining out than for at-home food purchases. Food-away-from-home spending is expected to increase by almost 10 percent per capita, due to per capita income growth alone, while food-at-home spending is expected to increase by only 3 percent due to income growth. An aging population and increasing ethnic diversity may dampen the food-away-from-home trend. Americans in their thirties and early

forties tended to spend the most on food away from home over the last two decades - more than both younger, less wealthy adults and those over age 50.

Higher consumer incomes are likely to engender small shifts in demand for particular foods and commodities due to different consumption patterns observed among those with different income levels. Higher income groups are likely to favor greater consumption of fruits, cheese, yogurt, fish, and vegetables (except potatoes), and slightly less consumption of pork, beef, other meats, and eggs. Interestingly, similar consumption preferences are seen among better educated consumers. According to ERS projections, the per capita consumption shifts due to higher incomes on the order of 0.5 to 2 percent.

### A More Diverse Population

Over the next two decades, the Hispanic population is expected to grow by 1.2 million annually, compared with annual increases of 500,000 among non-Hispanic Whites, and 400,000 each among Blacks and Asians. Growth among the Hispanic and Asian populations is due to both natural increase and immigration, while growth among Whites, Blacks, and Native Americans results mainly from natural increase (births minus deaths). Hispanics are expected to increase from 12.6 percent of the population in 2000 to 18 percent in 2020, and Asians are expected to increase from 3.9 percent to 5 percent.



Growing ethnic diversity has contributed to shifts in food preferences as well as a notable expansion of the American food repertoire. To profit from this diversity, U.S. food suppliers must be both cognizant of the differing preferences of population subgroups and

able to creatively tap into Americans' love of novel taste experiences.

Reflecting ethnic and racial dietary preferences, a more diverse population is likely to eat more fruit, nuts and seeds, eggs, and fish. Citrus fruits may see the largest per capita gain (about 2.5 percent), driven by taste preferences of today's Hispanic population. However, a greater proportion of Hispanics and Asians in the population may reduce per capita consumption of dairy products (by a little over 1 percent), unless these groups embrace

dairy products as a more integral component of their diet. A preference for rice over potatoes among the recent immigrant-based population groups may dampen demand for potatoes.

ERS researchers project that the expanding ethnic population base will increase per capita beef consumption very slightly, and poultry and fish consumption somewhat more. The ethnic influence on beef consumption contrasts directly with the preferences of an aging population and may moderate the downward pressure on per capita beef demand. Greater fish consumption is linked to Asian dietary preferences, and greater poultry consumption is linked to preferences of Blacks and Hispanics. Underlying these expectations is the strong assumption that ethnic populations in 2020 will have eating preferences similar to those of today's ethnic and immigrant-based populations.

**More People to Feed**

The United States is indeed growing, as seen in the 2000 Census count of 281 million people. 54 million more than in 1980. A large share of U.S. population growth results from a high tide of immigration initiated in the 1960s and continuing at least into the near future. By 2020, the U.S. population will likely grow another 18-28 percent, implying another 50-80 million people to feed just here at home.

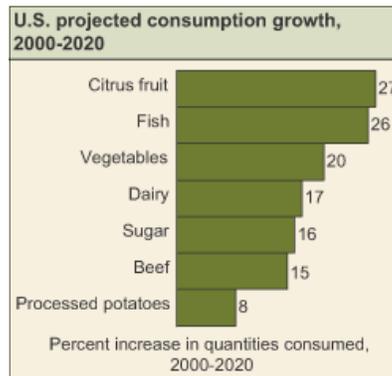
Conservatively assuming that in 2020 there will be 50 million more people to feed, we project that total household food spending will increase by over 26 percent between 2000 and 2020. Fueled by growth in per capita income, we project that food-away-from-home spending will increase 27.5 percent, compared with 24.3 percent for food-at-home spending.

In a mature market, population growth is the main source of increased demand for commodities that go into food production, However, population expansion will benefit some commodities more than others because of the changing population composition and related shifts in food preferences. For example, total quantities of beef and pork consumed are projected to increase by 14-15 percent, while quantities of fish and citrus fruit consumed would increase by 26-27 percent. These projections resemble the actual growth in food supplies to the U.S. market between 1980 and 2000, when beef supplies increased 14 percent, and total fruit supplies increased about 28 percent.

**A Different Consumer, a Different Agriculture?**

How important are these trends - older, wealthier, ethnically diverse consumers and more of them - to American agriculture? First, because the U.S. market is a mature market, demand for farm products will grow at just about the same pace as the nation's population. Fortunately for U.S. producers, the prospect of a growing population sets the United States apart from most other high-income countries where population growth rates are considerably lower. For those food producers, who see this projected growth in U.S.-based demand as too slow, they will need to continue to secure new markets in middle-income countries (for example, Thailand and Mexico), where both populations and incomes are expanding more rapidly than in the U.S. Other Americans both on and off the farm may view the growing demand from the U.S. market as putting more pressure on environmentally sensitive agricultural areas.

Second, the demographic changes that are altering the composition of the American population imply at least moderate shifts in consumer preferences among food categories and individual products. Entrepreneurial growers will watch and attempt to tap into these shifts. For example, the growth in demand for chili peppers illustrates the growing influence of the Hispanic population as well as America's search for low-fat flavorings. We do not anticipate shifts in food preferences sufficient to transform agricultural composition of production or the profile of the American farm landscape by 2020.



Third, and most salient, the anticipation that increasing income will have a larger impact on demand for quality and variety of foods than on quantity will continue to transform agriculture into a sophisticated business venture along the lines of other American businesses.

Growth in demand for value-added food products at the supermarket and in restaurants is likely to increase the share of food dollars that go to processors and retailers, and further diminish the share to providers of basic commodity inputs. However, growers are also positioning themselves to capture a larger share of the value-added. Some strategies include diversifying into high-quality or specialty crops that may carry price premiums, such as tofu-grade soybeans and vine-ripened tomatoes, and developing branded products that are more readily linked by

the consumer with a particular food company, production region, or even individual farm.

Food suppliers also know that catering to the modern consumer means adopting new ways of doing business, such as accepting closer business links through contractual relationships with others in the supply chain, and using information technology systems that help monitor and control quality from the farm to retail level. Such business and technology links, though far from visible as landmarks in America's farmlands, are the new hallmarks of consumer-driven agriculture.

This article was prepared from: *Food Review: Consumer-Driven Agriculture*, Vol. 25, Issue 1, Spring 2002, USDA/ERS, articles by Nicole Ballenger, Noel Blisard, John Cromartie, David E. Davis, Elise Golan, J. Michael Harris, Biing-Hwan Lin, Steve Martinez, Greg Pompelli, Anita Regmi, Hayden Stewart, and Jayachandran N. Variyam.  
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<<http://www.ers.usda.gov/publications/aer820/>>



## ***Invasive Species in California***

*Franklin Laemmlen*

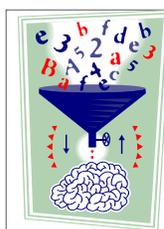
California Department of Food and Agriculture (CDFA) statistics show that a foreign or exotic species enters California every 60 days. These foreign invaders come by plane, by ship, and overland by car, truck, camper or other vehicles.

Some foreign plants, animals, insects, fruits, disease organisms, nematodes, etc., are of little consequence. Others can cause great harm and economic loss to California and its economy. Examples of the latter are the imported fire ant, exotic Newcastle disease, glassy-winged sharpshooter, vine mealy bug, pine pitch canker, yellow starthistle, and many, many more. The list goes on and on, and so does the information about these exotic pests.

If you need information on invasive, noxious species, the following websites may be useful:

- ◆ APHIS - <<http://www.aphis.usda.gov/>>
- ◆ Plant Protection and Quarantine Branch - <<http://www.aphis.usda.gov/oa/invasive/invasive.html>>
- ◆ CDFA - <<http://www.cdfa.ca.gov/>>
- ◆ California's regulated noxious weeds - <[http://www.cdfa.ca.gov/phpps/ipc/encycloweedia/encycloweedia\\_hp.htm](http://www.cdfa.ca.gov/phpps/ipc/encycloweedia/encycloweedia_hp.htm)>
- ◆ California Exotic Pest Plant Council - <<http://www.caleppc.org/>>
- ◆ Invasive Species - <<http://www.invasive.org/>>
- ◆ UC Weed Research and Information Center - <<http://wric.ucdavis.edu>>

There are many more sites on the web, and there is a recently new search engine for science, which may help find the information you need:  
<<http://www.scirus.com>>



**Did you know . . .** that California now has 84,000 farmers who produce high quality food and fiber on 28 million acres of farmland? These numbers represent 10 million fewer acres of farmland and 60,000 fewer farmers than were present in California in 1950.

# ***Bovine Spongiform Encephalopathy (BSE): What's the Latest?***

*Wayne Jensen*



As in past newsletters, I include timely information that Dr. John Maas, Extension Veterinarian at UC Davis, provides. The following is his overview regarding the BSE situation that surfaced recently in Canada.

With the recent news that Canada has confirmed a case of Bovine Spongiform Encephalopathy (BSE), or what the news media insist on calling "mad cow disease," I thought it would be important to review this topic. The US border with Canada was immediately closed to the shipment of live cattle and beef products. This is an absolutely necessary step, and until much more is known about the risk of BSE in Canadian cattle, the border should remain closed. Although BSE has been recognized for more than 15 years as a devastating disease of cattle, until the Canadian case, it was off the radar screen for most people. Here is a quick review of the problem.

## **I don't remember! What is Bovine Spongiform Encephalopathy (BSE)?**

BSE is a chronic degenerative disease that affects the central nervous system (brain and spinal cord) of cattle, first diagnosed in cattle in Great Britain in 1986. BSE belongs to a group of diseases known as Transmissible Spongiform Encephalopathies (TSEs). The TSEs include scrapie (sheep and goats), transmissible mink encephalopathy, feline spongiform encephalopathy (cats), chronic wasting disease of elk and deer, and BSE in cattle. Humans have a number of TSEs and these include kuru, Creutzfeldt Jakob Disease (CJD), new variant Creutzfeldt Jakob Disease (nvCJD), Fatal Familial Insomnia, Gerstmann-Straussler syndrome (in humans). The TSEs appear to be caused by abnormal proteins or "prions." The clinical signs or symptoms in cattle appear as nervousness or aggression, abnormal posture, incoordination, weight loss, difficulty rising, progressing to death. There is no treatment for any of these conditions, and currently there are no vaccines available for prevention. Remember, BSE is different from Foot and Mouth Disease (FMD - a viral disease of cattle, sheep, and pigs). Both BSE and FMD occurred in Great Britain, but that was the only connection between the two diseases.

## **Have we had any cases of BSE in the United States?**

No. There have been no cases of BSE in the U.S.A. There was one case in Canada (which was in a cow imported from Britain), before the recent case of BSE in a single beef cow. Before the ban on British cattle imports went into effect in 1989, there were 499 cattle brought to the U.S.A. from Britain. All of those cattle were carefully accounted for and none showed evidence of BSE. Veterinarians and others in the U.S.A. have very aggressive surveillance programs for BSE. This includes the National Veterinary Services Laboratory in Ames, Iowa, the Centers for Disease Control, the USDA, and all state labs, such as the California Animal Health and Food Safety laboratory. Surveillance of high-risk populations, such as disabled dairy cattle has continued at a high rate, with more than 3,000 cattle from California alone examined for evidence of BSE to date. So far, there has been no evidence of BSE in the U.S.A.

## **What about BSE in Japan?**

There have been a few cases of BSE diagnosed in Japanese cattle in the past three years. The Japanese continued to import meat and bone meal (MBM) from high-risk sources (Europe) and unknown sources as cattle feed despite scientific warnings to the contrary. It is thought that this risky practice is what resulted in BSE cases occurring in Japan. These BSE cases in cattle destroyed Japanese consumer confidence in beef products, which has not yet fully recovered.

## **What is currently being done to prevent BSE in the U.S.A.?**

The U.S.A. has banned importation of cattle and ruminant protein feeds from countries with BSE for many years, and this ban is still in place (this now includes Canada). Surveillance in the U.S.A. continues at a very high rate. Also, in 1997 the FDA enacted a ruminant feed ban. The ban prohibits the feeding of protein derived from mammals (such as meat and bone meal) to ruminants. There are some exceptions to this rule, but in general it is very strict and effective. Some TSEs occur in the U.S.A. These include diseases, such as scrapie in sheep, chronic wasting disease (CWD) in elk and deer, and transmissible encephalopathy in mink. Monitoring of all of

these TSEs is occurring, and active research is also ongoing on these conditions. There has been a large increase in the efforts to eliminate scrapie in sheep. New, more accurate diagnostic tests in sheep have been developed, and the scrapie elimination program is proceeding. Research work on CWD is ongoing, and many efforts to monitor CWD are occurring. To date, several research projects have concluded that CWD does not appear to cause disease in cattle. Currently, there is no known risk to the cattle population of the U.S.A. with regard to BSE, and there is no risk to people consuming beef produced in the U.S.A. Obviously, this problem has decimated the cattle industry of the U.K. and other countries, and we must all continue to work hard to prevent this problem from occurring in the U.S.A.

#### How well is the mammalian protein ban working?

In general, the ban on feeding mammalian protein to cattle (or other ruminants) is working very well despite the news report out of Texas a couple of years ago.

The cattle industry recently received an update from the FDA on this question. The FDA has inspected 7,972 feed mills. The number of feed mills handling mammalian protein (meat and bone meal, and similar substances) was only 1,426 (21%). These are the feed mills that produce feed for poultry or swine operations. Currently, the use of mammalian protein for use in poultry and swine feeds is allowed, as these species are not affected by BSE or other TSEs. The number of mills handling these prohibited materials is declining. The number of significant problems uncovered during these inspections was less than 1%. Also, the FDA has inspected 2,007 ruminant feeding operations, and there was no significant problem found, and only 4 operations needed to improve their record keeping systems. There is still some education needed regarding the ruminant feed ban. The proper cleaning of equipment and better record keeping will be necessary to achieve 100% compliance. Also, the FDA is considering some possible changes to the BSE rule.



## **Calcium in Plants**

*Warren Bendixen*

Plants have a high calcium requirement. Calcium is important in the formation of cell walls in plants, forming a calcium pectinate. It also enhances pollen germination and growth. Calcium in plants seems to exist in a fine balance with magnesium, potassium and boron. An upset in this balance will disturb the plant functions. Calcium deficiency is also associated with water balance in plants. Higher than normal temperatures that cause higher plant transpiration or foggy, overcast days with lower than normal transpiration can cause calcium deficiency in strawberries and vegetables.

A high magnesium level reduces the plant's absorption of calcium and potassium. Magnesium excess is indicated when the exchangeable magnesium is more than 40-60 percent of the cation exchange capacity.

Calcium content in plants ranges from 0.20 to 5.00 percent of the dry weight in leaf tissue with sufficiency values from 0.30 - 3.00 percent in leaf tissue of most crops.

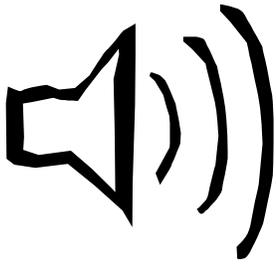
The relationship between calcium and potassium is well known. The ratio of calcium to nitrogen in fruit



crops and a similar ratio between calcium and boron may be related to quality. Ammonium nutrition can create a calcium deficiency by reducing calcium uptake.

Calcium deficiency produces several characteristic symptoms. It is responsible for "tip burn," hardening of fruit, root tip stunting, and growing point damage in strawberries, black heart of celery, brown head in broccoli, and blossom end rot in tomatoes and peppers. Calcium-deficient strawberries show a dense cover of seeds with smaller fruit size. Since calcium is an immobile element in the plant, deficiencies occur at the growing terminals. The conductive tissue at the base of the plant will decay, resulting in the reduction of the uptake of water, wilting in high temperatures, and a reduction in essential element uptake.

Excessive calcium in the soil can produce a deficiency of magnesium or potassium, depending on their concentration. Calcium deficiencies are corrected by adding gypsum, limestone, calcium nitrate or superphosphate.



## Announcements . . .

- ◆ The **North American Farmers' Direct Marketing Association (NAFDMA)** will hold their conference and trade show from February 2 - 8, 2004, in Sacramento, CA. The conference will be held at the Sheraton Grand Hotel and the Sacramento Convention Center. The theme for 2004 is "A Bounty of Golden Ideas." For conference information, visit <www.nafdma.com> or e-mail Marcia@WhiteLoafRidge.com or call Marcia Touchette at (413) 529-0386.
- ◆ A high profile topic on the Central Coast is water and water use. Everyone should be interested in water conservation. There will be a **Xeriscape Conference 2003**, held in Albuquerque, NM, on October 17 - 18, 2003. The conference will be held at the Albuquerque Convention Center. Plants for xeriscope gardens, designing xeriscope gardens, drip irrigation design and use, water resource planning and water management will be some of the many topics addressed. Call (505) 468-1021 or visit <www.xeriscapenm.com> for registration and more information.
- ◆ Invasive weeds are a major problem for California growers and gardeners. Plan to attend the **Noxious Weeds Seminar 2003** at the Royal Scandinavian Hotel, in Solvang, CA, on November 3, 2003, to learn about "Invasive Ornamentals - The Problem and Alternatives." The registration fee is \$40, which includes lunch. Six hours of CE and ISA credit will be given. Call (805) 934-6240 for registration material and a program.
- ◆ **Pitch Canker: A Technical Review** is the title of a new bulletin (No. 21616) recently released from the University of California. This publication presents a history, a description of the disease, some current research, a global perspective, and more information about pitch canker in pines. The price is \$7.00 plus tax, and it may be purchased from our office in Santa Maria or through the UC Publications catalog.

- ◆ The **30th International Carrot Conference** is scheduled for September 7 - 10, 2003, at the Muskegon Harbor Holiday Inn in Muskegon, MI. This should be a great time of year to spend a few days in Michigan. For conference information, reservations, etc., call (805) 934-6240.
- ◆ **Pesticide Applicators Professional Association (PAPA)** seminars convenient to Central Coast persons will be held in:
 

Salinas	October 28, 2003
Bakersfield	October 28, 2003
Santa Maria	November 5, 2003
Oxnard	November 18, 2003
Visalia	December 3, 2003

Call (805) 934-6240 for registration materials.

- ◆ The **10th International Conference on Methyl Bromide Alternative and Emission Reduction** will be held in San Diego at the Mission Valley Double Tree Hotel. Call (805) 934-6240 for conference registration and hotel information.
- ◆ **Aquatic and Riparian Weeds of the West** is the title of a new weed identification and information manual (Publ. No. 3421). The cost is \$40 plus tax. Copies may be purchased from our office at 624-A West Foster Road, Santa Maria.
- ◆ **Challenges in Agricultural Health and Safety** is the title of a health and safety conference scheduled for September 7 - 9, 2003, at the Crowne Plaza Union Square in San Francisco. The conference is sponsored by several California state and private agencies, and the University of California. All persons involved in agriculture worker safety will find this conference informative. The registration fee is \$175. For conference, hotel and registration information, call (805) 934-6240.

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