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Consumer voices, dollars are changing animal welfare standards

by Joy A. Mench, Department of Animal Science and Center for Animal Welfare, University of California, Davis

A conventional battery cage for laying hens. Under new guidelines adopted by the United Egg Producers and endorsed by McDonald's and FMI/NCCR, hens will be given more space than is typical currently. (photo by Joy Mench)

During the last few decades there has been increasing public concern about the ways in which food animals are raised, transported, and slaughtered. This concern is part of a larger unease about the industrialization of animal agriculture and how that affects the environment, food safety and quality, and animal welfare.

In the early 1950s, farm animal production methods began to change rapidly, transforming small extensive farms into large intensive production units. This change has been most profound for poultry and swine production. Prior to the 1940s, for example, most poultry production in the U.S. consisted of hens kept by families for the production of eggs for their own consumption and for sale locally. These hens were kept outdoors on range in small groups, provided with rudimentary shelter, and given supplemental feed. Meat production was incidental and seasonal; when hens grew too old to produce eggs reliably they were sold for meat as “spent” hens.

TECHNOLOGICAL CHANGES

In the 1950s, several technological developments occurred that changed the face of animal production. The first was the discovery of a method for artificially synthesizing Vitamin D₃. This meant that animals no longer had to be exposed to sunlight in order to synthesize the vitamin naturally, and could therefore be housed indoors throughout their lives. Indoor housing permitted better control of nutrition, temperature and light cycle, which in turn led to an improved ability to stimulate and manipulate production. Indoor housing also permitted greater mechanization of production, ultimately leading to reduced labor needs and reduced costs.

The second development was the discovery of antibiotics, which meant that diseases could be better controlled even when large numbers of animals were housed together in closely confined conditions. Lastly, genetic selection for desirable production traits was intensified. For poultry, for example, the “Chicken of Tomorrow” contest was launched with the intention of developing separate lines of egg and meat-producing chickens, a goal that was reached in short order and with remarkable success. Modern meat chickens (broilers) now reach market weight in only six weeks, a weight that without genetic selection and improved control over nutrition would normally take nearly 20 weeks to reach.

Today, broilers and laying hens are produced on different farms. More than 98 percent of laying hens are housed

indoors in so-called “battery” cages, and it is not uncommon for a producer to house hundreds of thousands or millions of hens on his or her farm. Because of the efficiency of broiler production, spent hens no longer have any economic or market value, a situation that raises both environmental and animal welfare concerns, since these hens have to be killed and disposed of somehow. Nearly nine billion broiler chickens are produced each year in the U.S.; they are raised on litter floors in large houses holding as many as 70,000 birds. Broiler production (and to some extent egg production) is vertically integrated, which means that all aspects of production from hatch to slaughter are integrated within one company, usually at one site. Because large units like this are cost-effective but also have high capital costs, there are now very few companies nationwide producing broilers. These companies own the facilities and the birds, but contract the rearing of the birds to independent growers.

The poultry industry production model has been so successful that it has been embraced by the swine industry, which is rapidly moving to an intensive production mode based on vertical integration and the use of contract growers. Swine units housing thousands of sows are now common in the Midwest and South. The dairy industry is less intensified, but there has also been a steady increase in farm size, particularly in California. Only the sheep and beef industries are still largely extensive and small-scale.

CONSUMER CONCERNS

Sows in gestation crates, which do not allow them to turn around. Most sows in the U.S. are housed in these types of crates throughout their pregnancies. (photo by Thomas Hartsock)

The increasing size and automation of farms is causing consumer concern about the welfare of the animals housed in them. While polls show that the public has confidence in farmers and ranchers, they also show that people want food animals to be treated well and are worried about the humaneness of certain production practices. In Europe, these kinds of concerns have led to legislation restricting or completely eliminating some practices. The current battery cage system used for laying hens, for example, must be phased out in EU countries by 2012, and the use of certain sow housing systems is also prohibited. Some of the most important concerns are:

- **Special agricultural practices:**

For reasons related to production or to preventing animals or humans from injury, many farm animals are subjected to surgical or other potentially painful manipulations. These include procedures such as castration, dehorning, beak-trimming, toe removal, branding, teat removal, and tail-docking. These procedures are performed without anesthesia or analgesia.

- **Behavioral restriction:**

Laying hens, veal calves, sows, and sometimes dairy cattle may be housed long-term in ways that severely restrict their movement, and particularly that prevent them from turning around. Even when given sufficient room, animals are often housed in barren enclosures that do not allow them to express many of their normal behaviors. Behavioral restriction can lead to the development of abnormal behaviors like tail biting, cannibalism, or stereotypies (e.g., pacing, bar-mouthing).

- **Health:**

Despite antibiotics, diseases can still be particularly catastrophic in intensive units since so many animals are housed in close confinement. Control of air quality (particularly ammonia) is difficult in large units, and this can lead to respiratory and eye problems. There are also health problems related to selection for high production. For example, laying hens develop severe osteoporosis because they use so much calcium for eggshell production, which leads to bone breaks and fractures. Broiler chickens have a variety of cardiovascular and skeletal problems associated with high growth rate, including severe and painful leg problems that impair their mobility. Mastitis (a painful inflammation of the udder) in dairy cattle is associated with high rates of milk production.

- **Transport and slaughter:**

Transportation and slaughter are undoubtedly and unavoidably stressful experiences for farm animals. However, these practices could be improved by ensuring that animals are handled with care, transported in such a way as to minimize thermal, physical and social stress, and that they are properly stunned prior to slaughter.

Unlike Europe, in the U.S. there are no federal laws regulating the care or treatment of animals on-farm (although there is a law requiring that livestock killed at federal plants be stunned prior to slaughter, the Humane Slaughter Act). U.S. farm animals are even exempted from many of the state animal anti-cruelty statutes as long as the practices to which they are subjected are considered “standard” for that particular industry. In the absence of regulation, it now appears that consumer concerns will be addressed here in an entirely different (and characteristically American) way—in the marketplace.

European non-cage laying hen system, which incorporates perches, nestboxes, and bedding. Systems like these are eligible for Free Farmed certification. (photo by Arnold Elson)

MARKETPLACE CHANGES

The first company to become involved in setting standards for animal welfare was one that some, in this era of queasiness about the effects of globalization of U.S. corporations, might consider an unlikely trend-setter: McDonald's. As part of their overall corporate responsibility program and in response to public concerns, McDonald's decided that it was time to tackle farm animal welfare issues in a practical and direct way. Working with **Temple Grandin**, an animal handling expert from Colorado State University, it established an auditing program for handling and stunning for its suppliers that led to major improvements in the humane treatment of cattle in processing plants (www.mcdonalds.com/corporate/social/marketplace/welfare/program/index.htm).

McDonald's then established an Animal Welfare Council composed of scientists and a representative from an animal protection organization, to work with the corporation on the development of animal welfare policies. McDonald's has now extended its auditing program to its laying hen producers, after establishing minimum standards for air quality, lighting, beak-trimming, and other aspects of hen management. In addition, McDonald's required that each hen be given 72 square inches of space (the egg industry standard is currently 48-54 square inches) and that induced molting be stopped. Induced molting is a process that involves increasing the production of hens by depriving them of food for days to weeks, which has been criticized on both animal welfare and food safety grounds.

The effort started by McDonald's quickly expanded throughout the food retail industry. Burger King, Wendy's, and Kentucky Fried Chicken (Tricon) also formed animal welfare advisory groups and began implementing slaughter audits. And last year, in an effort that will usher in widespread changes in farm animal welfare in the U.S., the Food Marketing Institute (FMI), which represents most of the nation's supermarket chains, and the National Council of Chain Restaurants (NCCR), representing the fast-food industry, established an animal welfare committee to assist in setting nationwide animal welfare standards. These standards will apply not just to handling and slaughter, but also to all phases of animal production, birth to slaughter, and to all livestock and poultry species.

To accomplish their goals, the FMI and NCCR are working closely with the various animal commodity groups in the development of guidelines. FMI and NCCR stipulated that each of the commodity groups establish an independent advisory group composed of scientists, veterinarians, and consumer representatives to identify relevant issues and review the scientific literature related to animal welfare in order to provide a basis for thorough and responsible animal

care guidelines. This model had already been used by one of the most proactive commodity groups, the United Egg Producers (UEP). The resulting UEP guidelines were, in fact, used as the basis for the McDonald's hen auditing program.

WELFARE STANDARDS

The guiding principles of FMI are that farm animals be provided with adequate food, water, and shelter; be handled properly; and be kept in an environment that “protects them from physical, chemical, and thermal abuse, stress and distress.” Overall goals of the FMI/NCCR process are to: 1) achieve consistency across the U.S. retail sector; 2) implement practical and attainable guidelines based on science; 3) develop a measurable audit process; 4) maintain an advisory council of third party, independent animal welfare experts; and 5) improve communications across the supply chain on animal welfare issues. FMI/NCCR issued a report on this process last month (www.fmi.org/animal_welfare/). Although time will be required to develop guidelines and an auditing and labeling system for all aspects of animal production, the FMI/NCCR have now endorsed, with some modifications, the standards developed for caged laying hens by the United Egg Producers, the standards for dairy cattle developed by the Milk and Dairy Beef Quality Assurance Center, and the standards and auditing practices for livestock slaughter developed by the American Meat Institute.

An outdoor "hoop housing" system for raising pigs in Scotland, which allows the sows and piglets freedom to roam. (photo by Carolyn Stull)

The standards that will be implemented via the FMI/NCCR process will be sweeping and have a profound impact on animal agriculture in the U.S. When the auditing system is established, consumers will have an assurance that the animal products that they purchase in the supermarket or at their local chain restaurant have been produced according to best management practices. It is unlikely, however, that these standards will mandate a general move to more extensive production systems, i.e., free range or cage-free egg production systems for hens or outdoor housing systems for sows and their piglets. Only a relatively small number of animals in the U.S. are produced in such “alternative” systems (for example, fewer than two percent of laying hens are housed in cage-free systems), so ensuring a sufficient market supply of products from these systems would currently be impossible.

Consumers interested in purchasing animals raised in alternative systems like these have faced a challenge because of the lack of a clear labeling system for so-called “animal welfare friendly” products in this country. However, there is now one such labeling program, the Free Farmed program, which was developed by the American Humane Association and is audited by an independent auditing system verified by the USDA. The ethical principles underlying the Free Farmed guidelines are that animals should be provided with “Five Freedoms.” These include freedom from hunger, thirst and malnutrition; from thermal and physical discomfort, fear and distress; and the freedom to express most normal behaviors. This means that animals must be housed in a way that provides sufficient space for movement, company of the animal's own kind, and things like bedding material to increase comfort and provide the opportunities for behaviors like nest-building. Certified producers can place the Free Farmed logo on their products. There are currently certified producers for pork, chicken meat, dairy products, beef, and eggs. Certification requires adherence to a detailed set of animal welfare standards developed by a committee of animal science and veterinary experts; copies of these are available on request from the Free Farmed program (www.freefarmed.org).

Animal welfare has now joined food safety and environmental sustainability as a critical issue for U.S. consumers of animal products. More than ever, consumers will be able to influence the development of animal production systems and management practices with their voices and their dollars.

Joy Mench received her Ph.D. in animal behavior from the University of Sussex in England, and is currently a professor in the animal science department and the director of the Center for Animal Welfare at the University of California, Davis. Mench conducts research on the behavior and welfare of laboratory, farm, and captive animals, with a specialization in poultry behavior and welfare. She serves on many national committees related to farm animal welfare, including the National Turkey Federation Humane Culling Task Force, the United Egg Producers Animal

Welfare Scientific Advisory Committee, and the Animal Welfare Advisory Committees of McDonald's, Tricon Global Foods, and the Food Marketing Institute/National Council of Chain Restaurants. She chaired the committee that developed the standards for the American Humane Association Free Farmed program, and serves as an independent auditor for that program. She also chaired the writing committee for the Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching, which is used nationally as the standard of care for farm animals used in research.

Relevant papers

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Kannan, G. and J.A. Mench, 1996. Influence of different handling methods and crating periods on plasma corticosterone levels in broilers. British Poultry Science 37:21-31.

Mench, J.A. 1992. The welfare of poultry in modern production systems. Poultry Science Reviews 4, 107-128.

Other suggested reading

D. Fraser, J. Mench, and S. Millman. Farm animals and their welfare in 2000. In State of the Animals, ed. D.J. Salem and A.N. Rowan, Humane Society Press, Washington, D.C.

Appleby, M. 1999. What Should We Do About Animal Welfare? Blackwell, Oxford, U.K.

Grandin, T. 1993. Livestock Handling and Transport. CAB International, Wallingford, Oxon, U.K.

ALTERNATIVES FOR FARMERS

Free, downloadable bulletins on alternative production practices for poultry and hog producers are available from the USDA's Sustainable Agriculture Research and Education program (SARE). Access *Profitable Poultry: Raising Birds on Pasture* and *Profitable Pork: Strategies for Hog Producers* at www.sare.org/htdocs/pubs/ For more information see [RESOURCES](#).

Program Notes

Staff Presentations

Janet C. “Jenny” Broome, SAREP associate director, made a presentation to California State Legislative staff members and University of California Office of the President representatives during their tour of UC Davis in May. Attendees met with College of Agricultural and Environmental Sciences Dean **Neal Van Alfen** and others, including SAREP director **Sean L. Swezey** to discuss what UCD is doing in the areas of sustainable and organic agriculture. **W. R. “Reg” Gomes**, UC vice president for agriculture and natural resources, gave closing remarks.

Broome made presentations on the Biologically Integrated Farming Systems (BIFS) program during the spring, including one to the Pest Management Advisory Committee of the California Department of Pesticide Regulation and one to the U.S. Environmental Protection Agency.

Sean L. Swezey spoke at a workshop on “Certified Organic Tree Crops: Transition, Growing Practices & Markets” in Yuba City in March sponsored by UC Cooperative Extension Sutter/Yuba counties, the UC Davis agricultural and resource economics department, and SAREP. Also in March Swezey gave an update on organic apple production and new technology at the “7th Annual Moth Madness & Fungus Among Us” apple meeting and farm tour in Watsonville sponsored by SAREP and the Community Alliance with Family Farmers. He also made a presentation on “Changes in Growing Techniques of Apples” at Focus Agriculture, sponsored by Agri-Culture, a Central Coast collaboration of educators, growers, business and community leaders and UC Cooperative Extension. In June he made a presentation on supporting sustainable food systems at the summer quarterly meeting of the Funders Agriculture Working Group (FAWG) in Marin.

David Chaney, SAREP education coordinator, was the primary organizer of “Agricultural Direct Marketing Strategies for Successful Businesses and Communities” in March at UC Davis. The workshop brought together professionals who work with farmers, ranchers and local communities to increase direct marketing channels. SAREP was a co-sponsor. **Gail Feenstra**, SAREP food systems analyst, participated in sessions on “Working Collaboratively with Local Business” and on Community Supported Agriculture. **Jamie Anderson**, a SAREP postgraduate researcher, participated in “Opportunities for Marketing to Schools as Community Institutions.”

Gail Feenstra participated in a panel on “The Endless Summer: Creating and Sustaining Community in California through Food,” at the California Studies Association Conference in February in Dana Point, Calif. She also participated in the California Department of Education Garden Team Workshop in Davis in March, where she made a presentation on the community food systems link to school gardens.

In May Feenstra gave a presentation at “Emerging Opportunities in Science, Education & Policy,” a conference at Texas A&M University in Dallas, Tex. aimed at defining issues of urban agriculture and common ground between urban and rural communities. W. R. “Reg” Gomes, UC vice president for agriculture and natural resources, also attended.

Feenstra and Swezey participated in the W.K. Kellogg Foundation Food and Society Conference in Denver in April. Feenstra made presentations in workshops on “Building Capacity for Community-based Food Systems,” and “Community Food Assessment: a Comprehensive Community-based Food System Planning Process.”

Marco Barzman, SAREP biologically integrated farming systems (BIFS) coordinator, designed and taught a participatory course entitled “Agroecology: Theory and Praxis” at Stanford University during the spring quarter.

Visitors

SAREP co-sponsored a talk at UC Davis in June by **Zhaoqian Wang** from the Agro Ecology and Farming Systems Institute, Zhejiang University on “Ecology, Agriculture and Sustainable Rural Development in China.” Wang described examples of complete integration in Chinese farming systems. He also visited with SAREP staff. Australian **Viv Burnett**, research scientist for organic agriculture with the Department of Natural Resources and Environment with Agriculture, Victoria-Rutherglen, visited SAREP and met with Broome and **Robert Bugg** of SAREP and Yolo County farm advisor **Rachael Long**, and toured the Central Coast with Swezey.

In July, a group of five Australian ranchers and farmers and one Zimbabwean farmer visited SAREP. **Jeri Ohmart** of SAREP hosted their visit, which included a tour of **Rose Loveall’s** Morningsun Herb Farm in Vacaville that specializes in culinary and medicinal herbs and native plants. They also visited **John Anderson’s** Hedgerow Farms in Winters.

Awards

Robert Bugg, SAREP restoration ecologist and cover crop analyst, visited San José Del Cabo in Baja California Sur where he was hosted by Del Cabo Organic Vegetables. The trip was first prize from the talent show at the Ecological Farming Conference in January where Bugg sang a Mozart opera aria. His stay included a tour of collective farms that collaborate with Del Cabo in producing tomatoes and basil. He also visited Buena Fortuna Jardín Botánico in La Ribera, Baja California Sur, Mexico, which is managed by **Gabriel** and **Kitzia Howearth** and is dedicated to food and medicinal plants of the tropics and subtropics.

Gail Feenstra was the recipient of a fellowship to the Kellogg Foundation’s 2002 Salzburg Seminar in May on food security and community based food system. (See [Achieving food security through community-based food systems](#) for her article about the seminar.)

From the Director

Marin County Cooperative Extension, SAREP collaboration bears organic fruit

Ten percent of California's endangered silver salmon still spawn in Marin County. The nation's third largest seashore park, Point Reyes National Seashore, attracts millions of visitors annually to Marin, and is in close proximity to the San Francisco Bay Area, the fifth largest metropolitan area in the country. A half-dozen local oyster farmers produce 20 percent of California's commercial oyster crop. Marin's Straus Family Creamery was the first organic dairy west of the Mississippi. Twenty percent of the San Francisco Bay Area's milk supply still comes from Marin County. Point Reyes Farmstead Blue is the only table blue cheese made in the U.S.

In the midst of this unusual natural-agri-urban situation, a quiet new green revolution is stirring. A coalition of farmers, ranchers, regulatory officials, and citizens is aiming to revitalize Marin County agriculture, where half the land is still farmed. The sustainable agriculture partnerships being forged to respond to economic and regulatory pressures in Marin County agriculture could be a model for other California counties and governments.

Marin County is well known in the agricultural land conservation movement for the establishment of the Marin Agricultural Land Trust (MALT). Approximately 30,000 acres of an agricultural land base of over 130,000 acres have been placed under protective agricultural conservation easements. Combined with directed growth planning and zoning controls established over the past decade, MALT has helped to sustain a rural way of life and limit potential urban sprawl onto agricultural lands. Although successful by any measure, these legal conservation agreements and zoning controls have come at an ever-increasing cost to local government and landowners, as, at the same time, Marin County agriculture makes the transition from unprofitable pasture-based dairy and livestock grazing to other agricultural activities. **Michael Straus**, from a third-generation farm family in Marshall, notes that over the past generation, Marin County dairies have decreased from over 150 family operations to approximately 30 concentrated operations. Can Marin County agricultural make the transition to new production options?

In April, 2001 the Marin County Agricultural Commissioner's Office, under the leadership of Commissioner **Stacy Carlsen**, became one of the first counties in California to offer a "one-stop" organic certification program to qualified producers and handlers. Recently accredited by the USDA, Marin Organic Certified Agriculture (MOCA) provides local services to certify and verify the authenticity of organically produced products, and promote organic agriculture in Marin County. Currently, 28 registered producers declare over \$3 million, mostly direct sales to local consumers in farmers markets and restaurants. A local non-profit organization, Marin Organic, promotes a recognizable identity and consumption of Marin-produced products with point-of-purchase signage and labels, tasting events, and school lunch programs featuring fresh local products. Look for the Marin Organic label at your local store and farmers markets.

Steve Quirt, Marin county sustainable and organic program coordinator, at the Sartori Ranch organic strawberry plot. (photo by Terry Morrison)

In a first-ever collaboration among SAREP, the Clarence E. Heller Charitable Foundation, Marin County and UC Cooperative Extension, SAREP funds were made available in early 2002 to Marin County Cooperative Extension Director **Ellie Rilla** to support these activities from her office in Novato. Rilla created the new *Grown in Marin* newsletter, which reports on sustainable agriculture initiatives in the county and the activities of **Steve Quirt**, the new Marin County sustainable and organic program coordinator. Quirt, a former marketing communications specialist and part-time farmer from West Marin, has lived and worked in the farm community for the past 30 years, and has already led a series of innovative and well-attended extension meetings with speakers on topics such as medicinal herb farming, natural and organic beef, farm diversification, and organic strawberry production. Future topics include organic livestock opportunities, direct marketing, farmstead cheeses, specialty crops, and organic transition and certification.

Rilla says Quirt's position gives the region, known for its high quality agricultural products, an opportunity to really push marketing and promotional initiatives for local foods and to continue to help farmers and ranchers diversify their operations.

She notes that Marin County products and producers continue to win prestigious awards: Marin French Cheeses and Cowgirl Creamery won first place awards at the American Cheese Society Annual Convention in 2001, and Point Reyes Blue scored second in the U.S. Cheese Championship Competition. Straus Family Creamery won four gold medals for dairy products and McEvoy Olive Oil won a silver medal at the Los Angeles County Fair last year. Corda Winery has received several medals for their Meritage Red and Chardonnay at the North Coast wine competition. In 2000, **Sam Dolcini** of Petaluma won first prize in the National Farm Bureau Young Farmers and Ranchers Discussion Meet.

According to veteran organic vegetable grower **Warren Weber** of Star Route Farms in Bolinas, the organic program workshops have been well attended and enthusiastically received.

A remarkable cross-section of farm community leaders and advocates has moved swiftly to test these alternatives to keep the rich history and economic health of agriculture in Marin County alive. Sustainable agriculture strives to leverage these partnerships for the resolution of problems in our food system. SAREP will continue to advocate and support the role of university programs in the demonstration of successful action models.—*Sean L. Swezey, director,*

What others say about Marin collaboration

Participants in the collaboration among SAREP, the Clarence E. Heller Charitable Foundation, Marin County, and UC Cooperative Extension share their enthusiasm about the partnership:

“This position gives us a fabulous opportunity to really push marketing and promotional initiatives for local foods and to continue to help farmers and ranchers diversify their operations. The quality of Marin County agricultural production is undisputed.” —Marin Cooperative Extension Director **Ellie Rilla**.

*“This is an exciting time for agriculture in Marin County, and SAREP’s visionary support of the organic program coordinator is one reason for that. Workshops have been well attended and enthusiastically received, and **Steve Quirt** is getting to know the concerns of ranchers countywide. SAREP’s backing of this project is already paying off.”* — organic vegetable grower **Warren Weber** of Star Route Farms, Bolinas.

“It’s nice to have a local organic farmer [Steve Quirt] as the Marin Organic Coordinator. We feel he’ll represent the organic community well and help us grow into the future. The whole organic industry is about to explode with the new federal law. And it’s nice to know that Marin County is ready to meet that challenge.” —**Albert Straus**, president, Straus Family Creamery, Marshall.

“Collaborations such as this one are essential for any long-term, sustainable solutions to be successful. The leadership from SAREP, the support from the Clarence E. Heller Charitable Foundation, and the utilization of our university county-based Cooperative Extension offices enabled Steve Quirt to immediately implement the new organic program in Marin. I truly hope this model can be duplicated in other counties throughout California.” —**Kimberly A. Rodrigues**, regional director, ANR North Coast and Mountain Region.

Achieving food security through community-based food systems

By Gail Feenstra, SAREP

[Note: Gail Feenstra, SAREP food systems analyst, attended a week-long seminar in Salzburg, Austria in May on food security and community-based food systems that was funded by the Kellogg Foundation. The UC Davis Provost's office provided partial travel support. She shares here highlights of the seminar, which involved 58 participants from 28 countries.]

Schloss Leopoldskron, one of Austria's national historic monuments and what many Americans may recognize as the site where the Sound of Music was filmed, was the spectacular setting of the Kellogg Foundation's 2002 Salzburg Seminar. The week provided invaluable opportunities to hear participants discuss food insecurity from a global perspective. This article sums up the essence of these presentations and key themes from discussions during the week.

Status of food insecurity on a global scale

According to **Rajul Pandya-Lorch**, director of the *2020 Vision for Food, Agriculture, and the Environment* initiative of the International Food Policy Research Institute, in Washington D.C., progress in achieving global food security has been notable, but slow over the last three decades. The United Nations Food and Agriculture Organization (FAO) estimates show that since 1970, the number of food-insecure people has dropped 170 million in the developing world—a reduction from 37 percent to 18 percent of the world's population. Yet, progress has been uneven. Although major improvements have occurred in East and Southeast Asia where the number of food-insecure people has dropped by half (largely due to changes in China), food insecurity has increased in South Asia and has more than doubled in Sub-Saharan Africa. About three-fifths of food-insecure people and three-quarters of all malnourished children live in South Asia and Sub-Saharan Africa (Pandya-Lorch, 2002).

Participants from North America and Europe noted that their countries also experience food insecurity, but on a very different scale than in Asia and Africa. Our statistics don't even come close to those in the developing world where over a billion people live on less than a dollar a day and two million children under the age of five die every year from water and foodborne diseases.

Causes of food insecurity: the global context

We all generally agreed that poverty is the main cause of or can exacerbate food insecurity and vice versa. Worldwide, about three-quarters of food-insecure people live in rural areas, dependent directly or indirectly on agriculture for their food and livelihoods. So, agriculture must be an integral part of food security strategies, both for its role in food production as well as its role in providing employment. Yet, at the same time, it is recognized that with rapid urbanization in the developing world, the locus of hunger is shifting from rural to urban areas.

In North America, food insecurity is especially notable in urban areas, yet it also exists (sometimes invisibly) in rural areas. Food insecurity, from an industrialized country's perspective, takes on different parameters than in the context of the developing world. It is a problem of poverty and income inequity resulting in inadequate access to nutritious food through normal market channels (Lezberg, 1999). In the United States, for example, food insecurity may not be associated with a visible incidence of malnutrition or food shortage, and may even contribute to obesity and other chronic diseases like heart disease and type 2 diabetes (Wagner, Butkus, and Wilken, 1994).

Over the course of the week we discussed root causes of hunger and food insecurity and various assumptions that tend to treat the symptoms of hunger, yet do not address these root causes. For example, it was generally agreed that increasing food production on a global scale will not improve food security, nor will free trade and free markets necessarily end hunger, nor will food aid necessarily help the hungry. Root causes of poverty, hunger and food insecurity are more directly linked to prevailing socio-economic inequity, which is characterized by loss of cultural diversity and traditional forms of food production and distribution, and unequal access to land and food.

(L-R) Jennifer Wilkins, Cornell University, Andy Fisher, community Food Security Coalition, and Gail Feenstra, SAREP, were among participants at the 2002 Salzburg Seminar on food security.

Policies and governments in developing countries often influence the extent to which socio-economic inequities exist, yet the developed world has powerful influences as well. For example, the availability and overabundance of food in developed countries, corporate control of the food system and inappropriate development imposed by international agencies contribute to food insecurity in developing countries. It was humbling for those of us representing the United States and the European Union to hear how our food and agricultural policies impact Third World countries as well as our own citizens.

Successful food security initiatives

We agreed that a combination of strategies at various levels would be necessary to bring about meaningful changes and lasting food security. In spite of economic policies that often work against food security in many countries, there are examples of successful grassroots food security initiatives. These represent “spaces of hope” for the communities involved. As **Michael Taylor** from Resources for the Future in Washington, D.C. and a Salzburg Seminar participant wrote in an article about U.S. food and development policy (2002):

There is no more direct way to address rural poverty and hunger than by building successful, community-based food systems. This means farmers improving their productivity in ways that are economically, socially, and environmentally sustainable. But it also means helping farmers connect with consumers through markets that work successfully at the local level and beyond to generate income and make food accessible for all. Developing countries can't expect to achieve economic growth at the national level if they can't meet their basic needs at the community level.

Community-based food systems are examples of innovation and provide valuable lessons for their participants. Seminar participants from all over the world shared examples of successful systems and summarized principles from them that could be applicable in many other situations. Successful community food systems tend to share the following characteristics:

- There is active participation of women and youth;
- They are based on traditional knowledge and local skills and resources;
- Agroecological approaches, resource conservation and appropriate technologies are used in food/fiber

- production;
- There is community organization and support;
- Participatory development methods are used, including farmer-to-farmer networks;
- Local markets are key;
- Micro-credit and financing are common.

More support for successful strategies

All of us were interested in how to help secure more support for and expand these initiatives to increase the beneficial impacts of local food security approaches to larger numbers of communities and broader geographical areas. Elements that were suggested included:

- Popular education programs for all ages and gender groups;
- Forming partnerships with communities and institutions (nonprofits, universities);
- Using farmer-to-farmer networks (locally and regionally);
- Applying agroecological principles;
- Creating and sustaining supportive policies and political will; and
- Developing local and regional markets.

Additionally, participants concluded that to truly be meaningful, collective community action must be linked to broader social movements that are working toward food security at many levels. These movements are challenging root causes of food insecurity, attempting to increase access to land, increasing participation in food and fiber systems by all members of the community, and supporting food and agricultural systems that respect both biological and cultural diversity. In the United States, there are several social movements that support these broad goals, including the Community Food Security movement, the Sustainable Agriculture movement, the Fair Trade movement, as well as a variety of organizations that support farmworker rights, a living wage and human and community health.

“Take home” lessons

In his article, Taylor asks what the policy implications of global food insecurity are for those of us in North America. We have already committed ourselves in the U.S. to the United Nations’ goals of cutting global poverty and hunger in half by 2015, and **President Bush** has made a pledge to increase U.S. development aid. But is this enough? Perhaps we need to take a harder look at how our national agriculture policies affect those in developing countries. Many seminar participants were critical of the United States’ investment in subsidies that unfairly disadvantage farmers in developing country. Taylor suggests, and I agree, that instead, we could be investing more of our U.S. farm dollars in conservation and sustainable agricultural practices and community-based food systems.

Resources

Lezberg, Sharon. 1999. Finding common ground between food security and sustainable food systems. Paper presented at the 1999 Joint Meetings of the Agriculture, Food and Human Values Society and the Association for the Study of Food and Society, Toronto, Canada.

Pandya-Lorch, Rajul. “Setting the Context: Prospects for Global Food Security.” Paper presented at the Salzburg Seminar on Achieving Food Security through Community-Based Food Systems, Salzburg, Austria, May 2002.

Taylor, Michael. “Battling Global Poverty and Hunger at the Community Level,” June 2002, Resources for the Future, www.rff.org/Battling_Global_Poverty_and_Hunger.htm

Wagner, Patricia, Sue Butkus and Karen Wilken. 1994. A Conceptual Foundation for Food Security Public Issues Education: Definitions and Educator’s Roles. In Leidenfrost, Nancy and Wilkins, Jennifer (Eds.), Food Security in the United States: A Guidebook for Public Issues Education, Cooperative Extension System, USDA.

SAREP News

Artisan cheese, conservation workshops among special events funded by SAREP, IPM

By David Chaney and Lyra Halprin, SAREP

The production of artisan cheeses like these from Pedrozo Milk & Cheese in Orland, Calif. is the topic of one SAREP-funded workshop. (photo by Barbara Reed)

Two University of California statewide special programs have pooled together \$36,500 to fund 25 educational events, ranging from reduced-pesticide school landscape workshops and conservation tillage workshops to Hmong farmer outreach.

SAREP and the UC Statewide Integrated Pest Management (IPM) Project cooperated to fund workshops, field days, seminars and other events addressing integrated pest management in agricultural or urban settings. In addition, SAREP is funding nine programs in the community development/community food systems area, and seven grants related to sustainable crop and livestock systems. Some of the areas to be covered include solar power for water distribution in rangelands, school gardens and farm-to-school salad bars, soil fertility management for organic crop production, artisan cheese production, vineyards in hardwood rangeland watersheds, and creating local food systems to link educators with farmers.

“We’re hoping to be able to help farmers and consumers throughout the state in their efforts to adopt more sustainable practices by funding these workshops,” said **Sean L. Swezey**, SAREP director.

“These grant funds provide a unique opportunity for those working toward more sustainable pest management systems to get together and share information,” said **Jim Lyons**, interim IPM director.

Grant recipients and funded events are grouped in three general areas:

Integrated Pest Management
(funded through UC IPM)

Sonoma County IPM Field Day

Nick Frey, Sonoma County Grape Growers Association, \$1,500.
(707) 206-0603, frey@scgga.org

Landscape IPM for School IPM Coordinators, Maintenance Directors, and Groundskeepers: A Series of Four Workshops

Stacy Carlsen, Marin County Department of Agriculture, \$6,000. (415) 499-6700, marin.dept.ag@co.marin.ca.us

Outreach and Education to Hmong Farmers in the North Valley

Sor Lo, Butte County Hmong Cultural Center, \$1,500. (530) 879-3563, econolo@aol.com

How To Be Weed Free

Linda Desai, Placer Nature Center, \$1,500. (530) 878-6053, lindad@pltpnc.org

Building for Balance

Maclay Burt, Association of Natural Bio-control Producers, \$1,500.
(714) 544-8295, execdir@anbp.org

AAIE Educational Events

Jill Klein, Association of Applied Insect Ecologists, \$3,000. (707) 265-9349, director@aaie.net

Sustainable Crop and Livestock Systems (funding through SAREP)

Sustainable Dairy Panel Series

Sarah Potenza, Ecological Farming Association, \$1,300. (831) 763-2111, info@eco-farm.org

Conservation Tillage 2002 Workshops

Jeff Mitchell, UC Davis Vegetable Crops, Kearney Ag Center, \$2,000. (559) 646-6565, mitchell@uckac.edu [Fund source: Western Region SARE Professional Development Program.]

Vineyards in Hardwood Rangeland Watersheds

Adina Merenlender, UC Hopland Research and Extension Center, \$1,300. (707) 744-1270, adina@nature.berkeley.edu

Cover Crops and Soils Educational Events

Kevin McEnnis, Community Alliance with Family Farmers, \$1,300. (707) 579-3973, kmcennis@yahoo.com

Solar Power for Improving Water Distribution and Rangeland Utilization

Morgan Doran, UC Cooperative Extension Solano County, \$1,300. (707) 435-2459, mpdor@ucdavis.edu

Alternatives in Crop Management Tools & New Crop Opportunities for Small Farms

Aziz Baameur, UC Cooperative Extension Santa Clara County, \$1,300. (408) 299-2635 x 1010,
azbaameur@ucdavis.edu

Soil Fertility Management for Organic Crop Production

Deborah Giraud, UC Cooperative Extension Humboldt County, \$1,300. (707) 445-7351, ddgiraud@ucdavis.edu

Connections between Farmers, Consumers and Communities in Sustainable Food and Agricultural Systems (funding through SAREP)

The FARMS Leadership Program Field Days

Mary Kimball, FARMS Leadership Program, \$1,300. (530) 795-1520, kimball@quicknet.com

Artisan Cheese Production Workshop-A Look At Vertical Integration

Barbara Reed, UC Cooperative Extension Glenn County, \$1,300. (530) 865-1107, bareed@ucdavis.edu

Business Planning & Innovative Financing Strategies to Promote Intergenerational Farm Transitions (Ventura/Santa Barbara)

Steve Schwartz, California FarmLink, \$1,300. (707) 829-1691, info@californiafarmlink.org

Davis Farm to School Connection: Lessons Learned from 2000-2003

Lydia Delis-Schlosser, Farm to School Connection, \$1,300. (530) 758-5200, shredmama@aol.com

Agritourism and Nature Tourism Workshop

Holly George, UC Cooperative Extension Plumas-Sierra counties, \$1,300. (530) 283-6270, hageorge@ucdavis.edu

Effective Garden-based Nutrition Education

Gail Goodyear, UC Cooperative Extension Trinity-Shasta, \$1,300.
(530) 628-5495, gegoodyear@ucdavis.edu

School Garden & Farm to School Symposium

Tina Poles, Sonoma County Farm Bureau, \$1,300. (707) 874-1557 x202, tina@oaec.org

Creating a Vibrant Local Food System in Marin: Linking Educators with Farmers

Sandra Wallenstein, Marin Food Systems Project, \$1,300.
(415) 485-4908, eecofmarin@aol.com

Grown in Marin Speaker Series

Ellen Rilla, UC Cooperative Extension Marin County, \$1,300. (415) 499-4204, erilla@ucdavis.edu

For more information about a particular event call the telephone number or write to the email address listed above. To learn more about SAREP's educational grants program, contact **David Chaney** at (530) 754-8551, dechaney@ucdavis.edu. As event time and locations become available they will be posted on SAREP's online Calendar of Events at www.sarep.ucdavis.edu/cgi-bin/sarepcal.exe/list_events

SAREP News

Organic materials reviewer, computer specialist join SAREP

Sam Prentice has joined SAREP as a postgraduate researcher through a grant funded by the U.S. Department of Agriculture. The USDA National Organic Program has contracted with SAREP to compile Technical Advisory Panel (TAP) reviews on agricultural materials being considered for use in certified organic systems. Compilation of these reviews is necessary for the implementation of the National Standards on Organic Agricultural Production and Handling, set for September 2002.

A former engineering student, Prentice received a degree in international agricultural development with a minor in soils from UC Davis in 1998. When not working at SAREP, he hosts a music show at a local independent radio station, teaches EMT (emergency medicine) classes, and enjoys rock climbing and photography.

James Cannon is the new computer resource specialist at SAREP. His duties include file and Web server support, desktop support, Web development, and programming. He comes to SAREP with 14 years experience in the information technology industry.

Previously he worked for Celera AgGen, where he performed similar duties. A former UC Davis student, Cannon also worked for UCD Computing Services. His interests include almost anything that involves computers, or sports that require strapping a board or wheels to your feet.

SAREP is able to share Cannon's services with the two other UC Agriculture and Natural Resources (ANR) Statewide Special Programs, the UC Small Farm Center and the UC Genetic Resources Conservation Program, which are housed with SAREP in the UC ANR building on the Davis campus.

SAREP News

SAREP receives USDA grant for National Organic Program materials evaluations

In September 2001, SAREP was awarded a USDA contract to compile information for Technical Advisory Panel (TAP) reviews for the National Organic Program (NOP). The TAP review process is part of the NOP's mandate to develop a comprehensive set of national standards governing certified organic systems. The USDA standards, set to go into effect in October 2002, will supercede the numerous state organic standards that have served as de facto organic certification guidelines since the passage of the federal Organic Foods Production Act of 1990 (OFPA).

To determine whether a substance can be used in certified organic systems, the OFPA requires the establishment of a National List of Allowed and Prohibited Substances (National List), overseen by the National Organic Standards Board (NOSB). This list identifies the synthetic substances that may be used, and the non-synthetic substances that cannot be used, by organic production and handling operations. (By comparison, naturally occurring by-products of living organisms are considered allowed by definition and do not need to be added to the National List). Individuals and companies may petition the National Organic Standards Board (NOSB) to evaluate substances for inclusion on or removal from the List. The petitions undergo an independent, scientific TAP review, which the NOSB uses to make a final ruling regarding use of the substance in certified organic systems.

Under principal investigators **Sean L. Swezey**, SAREP director, and **Jenny Broome**, SAREP associate director, SAREP post-graduate researcher **Sam Prentice** is compiling information for several TAP reviews of petitioned substances. This information is forwarded to three qualified reviewers who provide professional input on the appropriateness of the use of the substances in organic agriculture. The reviewers' input is incorporated into the TAP review, which is then submitted to the NOP for decision-making. For more information on materials review, see the NOP Web site at www.ams.usda.gov/nop.

SAREP News

SUSTAINABLE AGRICULTURE gets a new look

You may have noticed that *Sustainable Agriculture*, now in its 14th year, looks different. We thought it was time to refresh our newsletter and reflect the design sensibilities of the 21st century. Thanks to **Missy Anapolsky** at Circle Design in Sacramento for the new design. We've added a new section, *Program Notes*, to update our readers on some of the activities of SAREP staff, and moved the *From the Director* column to the inside. The role of the newsletter has always been to help SAREP accomplish its mission-based goals, which are:

- To assist California farmers and ranchers in developing and implementing sustainable production and marketing systems, and
- To support California's rural and urban communities in understanding the concept and value of sustainable agriculture, and in participating in sustainable food and agricultural systems.

Over the years, the newsletter has been an important vehicle for getting information on farming practices out to farmers and farm advisors, presenting some aspects of sustainable agriculture philosophy and implementation in *From the Director*, reporting on legislation and trends, and alerting readers to resources, sources of funding, and events. The newsletter's audience is farmers and ranchers, farm advisors, researchers, independent consultants, commodity groups, non-profit organizations, consumers, elected officials, University administrators, USDA and California Department of Food and Agriculture personnel, and other public agencies. We have surveyed our readers over the years, most recently in the Fall 2001 issue (Vol. 13, No. 3). The informal survey revealed some useful information: 52 percent of those responding reported that they have changed their farming practices as a result of newsletter information.

U.S. readers have always been able to receive free subscriptions to the printed newsletter. Since 1996, they and readers all over the world have also been able to access it on the Web at <http://sarep.ucdavis.edu/newsltr/>. The current newsletter mailing list includes more than 3,000 names. A small number of readers have chosen the option of receiving an electronic version of the newsletter via email. We ask for a \$10 per year donation from foreign readers to cover mailing costs.

We hope we are still delivering the information you need. Thanks for your interest and support; we hope you like the new design!—*Lyra Halprin, managing editor*

SARE seeks a good farmer or rancher...

Do you know of an exemplary farmer or rancher who truly is outstanding in the field, on the range or at the farmers market? Do you find yourself pointing to this person again and again when you need an example of a truly “sustainable” producer?

Now you can nominate him or her for a chance to win national recognition, a \$1,000 prize and a travel scholarship to “On the Road to Sustainable Agriculture,” the Southern SARE regional/national conference in Raleigh, N.C., on Oct. 23-26.

The Patrick Madden Award for Sustainable Agriculture, sponsored by USDA’s Sustainable Agriculture Research and Education (SARE) program, will honor one worthy producer each year. The brand-new award will recognize farmers and ranchers who raise food or fiber in ways that are profitable, good for families and communities, and beneficial to the environment. SARE’s first director, **Patrick Madden** was a pioneer in the movement toward a strong, independent agriculture for small- and medium-sized growers. For more information, see www.sare.org/htdocs/events/madden/indexmadden.htm. For more information about “On the Road to Sustainable Agriculture,” see www.griffin.peachnet.edu/sare/otr/otrtri.pdf

Organic gardening, farming apprenticeship at UC Santa Cruz

An “Apprenticeship in Ecological Horticulture,” a six-month training course in organic gardening and small-scale farming, is being offered at the Center for Agroecology at UC Santa Cruz. From April to October each year, apprentices take classes and work with instructors in the Center’s 25-acre farm and two-acre Alan Chadwick Garden. The course awards 20 units of UC Extension credit for the approximately 300 hours of formal instruction and 700 hours of in-field training and experience in the greenhouses, gardens, orchards and fields. The 35 to 40 apprentices each year come from throughout the U.S. and abroad. Most choose to live on the farm in their own tents, sharing cooking in a common kitchen/dining room. Several full and partial tuition waivers are available for minorities and low-income individuals. Tuition for the 2003 program is \$3,250. Dates for the 2003 program are April 14-Oct. 17, 2003. Application deadlines are **November 1, 2002** for U.S. and Canadian citizens, and **September 1, 2002** for international applicants. For more information, contact the program at Apprenticeship Information, CFAFS, UCSC, 1156 High Street, Santa Cruz, CA 95064; Tel: (831) 459-3240; Web: www.ucsc.edu/casfs; Email: apprenticeship@cats.ucsc.edu.

Technical Reviews

On-farm assessment of soil quality in California's Central Valley

Susan S. Andrews, Jeffrey P. Mitchell, Roberto Mancinelli, Douglas L. Karlen, Timothy K. Hartz, William R. Horwath, G. Stuart Pettygrove, Kate M. Scow, and Daniel S. Munk.

Agronomy Journal 94:12-23. 2002

This article summarizes results of side-by-side comparisons of alternative soil management practices that were part of the West Side On-Farm Demonstration Project, conducted from 1995 to 1998. It was funded through SAREP's Biologically Integrated Farming Systems program. Data on practices such as cover cropping, and compost and manure applications were collected and used to test whether or not a soil quality index (SQI) could be applied to San Joaquin Valley soils. The study presents the first comprehensive soil property data set of this type for California farms.

Experimental Methods

Side-by-side comparisons were established at 11 farms in the fall of 1995 in the western San Joaquin Valley region between Huron and Mendota. Each site consisted of adjacent fields: one conventional and one alternative. Project fields were from 30 to 60 ha each. Consensus among participating farmers and researchers was that cover crop and compost or manure amendments would be used in the alternative field sites, but not in the conventional fields.

The soil amendment practices used in the alternative systems included various combinations of compost (either from chicken, steer or dairy manure, or cotton gin trash) and cover crops such as wheat, barley, and Sudangrass. Inputs that were incorporated into the rotations at each alternative farm site varied considerably in material and chemical composition, as did the crop rotation that was followed. Compost and manure applications ranged from 5.6 to 9 kg ha⁻¹. No data are available on the general use of these amendment practices throughout the West Side region, however, according to the researchers, it is very unlikely that they are used on more than five percent of farmland annually. Interviews with project participants revealed that these soil amendments were being considered primarily as a means to add carbon to improve soil quality, rather than for fertility purposes or to reduce fertilizer inputs.

Six composite soil samples were taken from the alternative and conventional fields of each farm in the spring and fall of each year. Composite samples consisted of 8 to 12 subsamples taken from the surface 15 cm of soil. Mixed, air-dried samples were then taken to the University of California's Division of Agriculture and Natural Resources Analytical Laboratory for the following chemical analyses: pH, electrical conductivity (EC), exchangeable potassium, organic matter, total carbon and nitrogen, cation exchange capacity, soluble zinc, manganese, and iron, soil aggregate stability, and microbial biomass carbon and nitrogen.

Soil quality index and statistical analyses

Researchers compared the alternative and conventional treatment means for six of the 11 farm sites. These six farms maintained treatment integrity and a commitment to the side-by-side comparisons over the course of the project. The expanded data set collected from a seventh farm in 1998 was used to construct the soil quality index (SQI). Techniques used to develop this index were similar to those previously applied in the Sustainable Agriculture Farming Systems (SAFS) project at the UC Davis campus. To construct the index, the researchers performed standardized principal component analysis of the data.

Results

Soil quality indicators that tended to change most frequently included total soil carbon, microbial biomass carbon and nitrogen, organic matter, exchangeable potassium and total Kjeldahl nitrogen (TKN). Soil organic matter (SOM) was significantly higher in the alternative/ amended fields at four of the six sites at the end of the project. Similar short-

term changes in SOM in organic and low-input (cover cropped) cropping systems in the southern Sacramento Valley have been reported by other researchers. Microbial biomass carbon and nitrogen also were significantly higher in the alternative/amended fields at three sites in 1998. Biomass carbon and nitrogen were an average of 32 and 37 percent higher in the alternative fields relative to the conventionally managed fields, respectively. Properties not sensitive to the different soil management practices compared included potentially mineralizable nitrogen, pH and water stable aggregates.

Soil Quality Index

Based on principal component analysis of the expanded data collected from Farm 7, researchers identified the following characteristics as the minimum data set for the SQI: bulk density, zinc, water stable aggregates, pH, electrical conductivity, and soil organic matter. The SQI was calculated using a formula that incorporated weighting factors for each characteristic. Using this formula, the SOM and electrical conductivity variables appear to drive the soil quality index results. The organic system in Farm 7 had the highest index value. The SQI value for the transitional system was not significantly different from the manure, compost, or conventional systems. These results were similar to those from the UC Davis SAFS experiment where the organic and low-input plots consistently received higher SQI scores compared with the conventional treatments.

Data from this study indicate certain soil properties can be improved through simple practices that build soil organic matter. Researchers demonstrated that techniques used to compute soil quality indices in controlled experiments could be successfully applied to on-farm studies as well. These results emphasize that soil quality assessment is a useful tool for evaluating the effects of land management practices on soil function.

Contributed by David Chaney

Sources of Funding

Western SARE grants

Calls for proposals for farmer/rancher, marketing systems and organic systems projects are now available from the USDA's Western Sustainable Agriculture Research and Education (WSARE) program. Proposals are due **October 1**.

- *Farmer/Rancher Grants* target producers seeking to learn more about production, management, or marketing approaches that build the environmental and economic sustainability of their operations.
- *Marketing Systems Grants* emphasize sustainable agricultural marketing at the producer level.
- *Organic Systems Grants* emphasize some aspect of an organic agricultural system as it relates to sustainable agriculture.

Each project should include an agricultural professional as a technical adviser. Grants of up to \$7,500 for an individual grower or \$15,000 for a group of producers are available for on-farm experimentation, market research, educational events or other activities.

Also due **October 1** are *Agricultural Professional* and *Producer Grants*.

Due **October 15** are the *Professional Development Program Grants*.

Calls for proposals, as well as funded project results, are available at the program's Web site <http://wsare.usu.edu>, or by contacting the Western SARE office at Utah State University at (435) 797-2257 to request an application. National SARE, mandated by Congress in the 1985 and 1990 Farm Bills and extended by the 1995 Farm Bill reauthorization, is implemented by four regional councils. Western SARE is coordinated by Utah State University soil scientist **V. Philip Rasmussen** and lead by an administrative council that represents diverse agricultural, business, producer, and public interests in the West. The Western Region includes Alaska, American Samoa, Arizona, California, Colorado, Guam, Hawaii, Idaho, Micronesia, Montana, Nevada, New Mexico, N. Mariana Islands, Oregon, Utah, Washington, and Wyoming.

Pest Management Alliance Grants

The California Department of Food and Agriculture's Department of Pesticide Regulation (DPR) is offering funding for Pest Management Alliance grant projects. Alliance grants are provided to help commodity groups, non-agricultural groups, urban groups, and others address important pest management issues on a regional or statewide scale. The Alliance program is devoted to reducing risks associated with pesticide use, while establishing a dialogue between Alliance groups and DPR. Implementation of reduced-risk practices should be an integral part of an Alliance proposal. Groups are asked to establish a team, evaluate existing pest management systems, and develop a proposal to demonstrate alternative practices that have shown success in the field. Groups may receive up to \$100,000 per year, with a required dollar-for-dollar match. A total of approximately \$300,000 is available through this Request for Proposals. Proposals are due by 4 p.m., **October 24, 2002**. For more information on the grants, download complete Request for Proposal bid packages at the DPR Web site: www.cdpr.ca.gov/dprgrants.htm, or contact **Bob Elliott** at DPR, PO Box 4015, Sacramento, CA 95812-401; (916) 324-4100; belliott@cdpr.ca.gov

Organic Research grants up

The Organic Farming Research Foundation offers research grants of up to \$15,000; applicants are invited for consideration in its twice-yearly funding cycle. Funds are offered for organic farming research, dissemination of research results to organic farmers and growers interested in making the transition to organic production and consumer education on organic farming issues. OFRF technical program coordinator **Jane Sooby** is available to work with farmers and others interested in doing on-farm research and applying for grants. The foundation's on-farm research guide gives an overview of the research process and is accessible through OFRF's Web site (www.ofrf.org) under

“research program” or can be ordered free of charge by calling OFRF at (831) 426-6606. The deadlines for proposal consideration are January 15 for the spring funding cycle and July 15 for the fall funding cycle. Contact Sooby at OFRF, PO Box 440, Santa Cruz, CA 95061 or email research@ofrf.org or jane@ofrf.org