



SUSTAINABLE AGRICULTURE RESEARCH AND EDUCATION PROGRAM



IMPACT ASSESSMENT OF ORGANIC FARMING PROGRAM IN THREE CALIFORNIA COUNTIES

VENTURA, HUMBOLDT AND MARIN

Report

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Executive Summary

University of California Cooperative Extension (UCCE) organic farming programs in Ventura, Humboldt and Marin counties were the subject of an impact assessment project coordinated by the UC Sustainable Agriculture Research and Education Program (UC SAREP) and conducted by visiting Humphrey Fellows at the University of California, Davis, in the spring and summer of 2004. The organic farming programs being evaluated were supported by a 3-year grant from the Clarence E. Heller Charitable Foundation to UC SAREP. The counties' integrated research and educational activities were aimed at helping growers improve their organic farming and marketing practices.

A mix of methodologies was used to collect quantitative and qualitative data including a literature review followed by interviews, focus sessions and surveys of county growers and other interested clientele in each county, as well as, interviews with the county directors and organic program coordinators. Focus sessions were conducted to assess users' needs and experience after two years of program implementation. In each county, growers and other interested parties were invited to a focus session in which they shared their opinions about the benefits they have derived from the program as well as current needs that they wanted UCCE to address. In each county, the evaluation team visited farms and research sites and discussed with growers and the UCCE cooperation staff their experience with the program including benefits gained and particular challenges that might need more attention.

In each county, a survey questionnaire was prepared to further assess both the research and education needs of the county clientele as well as the impact to date of the organic farming program. In designing the surveys, care was taken to consider the specific characteristics of the production region. A questionnaire placing emphasis on row and tree cropping systems was developed for Ventura County, while dairy products and animal care in addition to row and tree crops were considered for Marin and Humboldt counties. A total of 69 surveys were returned and the data analyzed out of 394 questionnaires successfully delivered, for a response rate of 17.5%.

A Geographic Information System (GIS) program was used to map farmlands using a digital elevation model and the county parcel database which includes all organic farmers from the three counties. Work continues at the California Department of Food and Agriculture where one Humphrey Fellow is working to further develop these resources to serve organic growers.

Based on the focus sessions, interviews, and surveys the organic farming impact assessment effort has found that most of the participating growers were enthusiastic and feel very positively about the organic farming program. In the three counties, most wanted the program to continue and see it become permanent. The county directors and organic coordinators are very confident about their programs, their roles, and acknowledge the valuable collaboration and support from UC SAREP and the Clarence E. Heller Charitable Foundation. They suggested that greater collaboration in research and extension work among the counties with similar organic programs would be valuable and worth encouraging.

More detailed results from the completed survey questionnaires for each county are presented as attachments to this report and should prove useful to the coordinators in continuing their work in the counties with organic growers.

Introduction

Sustainable agriculture includes agricultural systems that promote the environmentally, socially and economically sound production of food and fiber. Organic production, as defined by the USDA National Organic Program, is “a system that is managed in accordance with the (NOP) Act and regulations in this part to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity. “(USDA NOP 2004). By emphasizing the natural cycles of plants, animals and the importance of local conditions, it aims for optimal quality in all aspects of agriculture and the environment. It does not allow the use of synthetic fertilizers, pesticides or pharmaceuticals, thereby significantly reducing the use of external inputs. Good yields and healthy crops are achieved with crop rotations, intercropping, appropriate varieties, biological pest control, nutrient recycling and other measures.

With funding from the Clarence E. Heller Foundation, UC SAREP provided grants to support organic farming programs in Marin, Humboldt, and Ventura County in early 2002. The integrated activities aimed to help growers improve their organic farming productivity. In an effort to evaluate the success of these programs to date and guide future activities, UC SAREP invited a group of scholars from the Humphrey Fellowship Program at the UC Davis campus to conduct this assessment using social science tools such as focus sessions, interviews, mail surveys, and GIS analysis.

Objectives of the study

The purpose of the study is to determine the impact of the Organic Farming Program (OFP) on agriculture in Ventura, Humboldt and Marin counties. The socio-cultural, economic and agronomic effects of the program were evaluated using social science tools such as surveys, guided interviews and GIS methodology.

This report to UC SAREP and the Clarence E. Heller Charitable Foundation is an analysis of the organic program that we hope may be used to provide recommendations for future direction and continued success of the program.

History of Organic Farming

The term organic was first widely used in the U.S. by J.I. Rodale, founder of the Rodale Institute and Rodale Press. In 1940 he published the first edition of *Organic Farming and Gardening*, laying the foundation for broad-based acceptance of the organic movement (Warm Earth, 2002). This organic movement, which started as a reaction against large-scale agriculture and its use of large amounts of synthetic pesticides, was traced back to England circa 1920. Sir Albert Howard, a British botanist, was recognized as one of the earliest pioneers of organic farming. He documented and developed organic farming methods in his first book *An Agricultural Testament* in 1940. Influenced by his work, several scientists advocated began writing in support of organic farming, including Lady Eve Balfour (1944), Rachel Carson (1962), and Masanobu Fukuoka (1975). Growing awareness of environmental pollution, concern about the effects of food consumption on human health, and rising

consumer demand for organic products has increased interest in organic farming. As organic markets become more attractive, there is an even greater need for both consumers and growers to be sure that what they are selling or are eating are genuine organic products. These needs are addressed by the “third party certification” process (Kuepper, 2002).

Organic farming in California has experienced dramatic increases in the number of farms and acreage in the 1990s (Swezey & Broome 2000; Klonsky and Tourte 1998, 2002). According to the analysis of the CDFA organic registrants’ database, the number of registered organic farms in California increased by over 50 percent during the eleven-year period 1992-2002 from 1,273 to 1,949 growers. Over the same period of time acreage quadrupled increasing from 42,000 acres in 1992 to almost 170,000 acres in 2002 (Klonsky 2003). With this rapid growth in organic farms and acreage, organic agriculture has sustained a high rate of market expansion where sales increased to three and a half times what they were in 1992 by 2002. The absolute increase was \$184 million, from over \$75 million in 1992 to almost \$260 million in 2002 (Klonsky 2003).

In California, the organic market is regulated by the California Department of Food and Agriculture (CDFA) and the USDA. The California Organic Food Act (COFA), signed into law in 1990, provides protection to producers, processors, handlers, and consumers in that foods produced and marketed as organic must meet specific standards. As part of the regulatory process, COFA requires annual registration of all processors, growers and handlers of commodities labeled as organic. State registration is separate from, and does not act as a substitute for organic certification. Registration is mandated by state law and is administered by CDFA while certification is mandated by federal law and is conducted by certification organizations accredited by USDA.

The Organic Food Production Act (OFPA) of 1990 required USDA to develop national organic standards for organically produced agriculture and to develop an organic certification program. The final regulations for implementation of the OFPA were published in the Federal Register in December 2000. The new rule took effect on April 21, 2001 and marked the beginning of the transition period. Full compliance with the rule was required by October 20, 2002, at which time products began to use the National Organic Program organic label. The final rule includes a list of allowed synthetic and prohibited non-synthetic materials as well as labeling requirements. Unlike COFA, OFPA requires all growers grossing \$5,000 or more to obtain certification from a USDA accredited certification organization.

Although some consider “organic agriculture to be the quickest, most effective, most cost efficient and fairest way to feed the world” (Leu 2004), there are others who are concerned that organic farming is less productive than conventional agriculture. Many growers are also reticent about changing their farming practices and are only interested in going into organic if there are financial incentives. More research and extension is needed to increase the productivity of organic farming and expand the market incentives of organic agriculture.

UC SAREP Organic Farming Program

UC SAREP is a statewide program within the UC Division of Agriculture and Natural Resources (ANR). It was created through the grassroots efforts of organizations and individuals concerned about the environmental impacts of agriculture, the health of rural

communities, and the profitability of family farming operations in California. At the request of the California State Legislature, UC established SAREP in 1986 with three mandates:

- Administer competitive grants for research on sustainable agricultural practices and systems;
- Develop and distribute information through publications and on-farm demonstrations; and
- Support long-term research in sustainable farming systems on UC farmlands.

UC SAREP's mission, based on founding legislation and its by laws, is to:

- Assist California farmers and ranchers in developing and implementing sustainable production and marketing systems; and
- Support California's rural and urban communities in understanding the concept and value of sustainable agriculture and participating in sustainable food and agricultural systems.

As part of its organic initiative, SAREP is working with 11 UC Cooperative Extension county programs to bring organic farming research and information resources at the local level. The beneficiary counties are: Humboldt, Ventura, Marin, Santa Barbara, San Diego, Fresno, Sonoma, Mendocino, Sutter Yuba, and Placer-Nevada. Funding for these county-based programs comes from The Clarence E. Heller Charitable Foundation, the True North Foundation, the Columbia Foundation and a California Department of Food and Agriculture Buy California Initiative /USDA grant.

The goals of the programs are to:

- Increase knowledge about organic agriculture through on-farm research;
- Make information about new organic farming practices widely accessible; and
- Promote agriculture sustainability with respect to natural resources and human resources.

The specific objectives are to:

- Provide assistance to farmers on an individual basis;
- Provide extension learning opportunities, such as through educational meetings, field days, symposia, a web site and short courses;
- Provide science-based information on organic production methods; and
- Conduct on-farm research relating to organic agriculture practices.

Study Methodology

This study was conducted in three California counties, Ventura, Humboldt and Marin (Figure 1). A mix of methodologies was used to collect quantitative and qualitative data. In addition to a literature review, structured interviews, focus sessions and mail surveys were conducted according to current social sciences standards (Salant and Dillman, 1994; Butler et al., 1995; Simon 1999).

Interview

One- to two-hour face-to-face structured interviews were used to discuss the program and its accomplishments with county directors and organic coordinators (Figure 2). The outline of this interview is included as an attachment (Attachment 1). Coordinator reports and relevant Web sites and publications were also reviewed.

Focus Sessions

Two-hour focus sessions were conducted to assess user needs and experiences after two years of organic program implementation. In each county, growers and other target audiences (representatives of non-profit organizations, farmer groups) were invited to a focus session. The agenda included:

- Introduction of people and objectives of the meeting
- Brainstorming session
- Plenary feedback session
- Questionnaire testing

At the first focus session, Humphrey Program Director and social scientist Dr. Paul Marcotte opened the session and presented the rules and objectives of the meeting. At the next two focus sessions, the UC SAREP director or associate director chaired the opening session and presented the rules and objectives of the meeting (Figure 3). Growers were randomly assigned to small groups of three to five members and were asked to answer the following questions (using terms of reference and brainstorming rules noted in Table 1):



Figure 1: Map of California showing the study sites



Figure 2: Interview with Marin County Organic Program team E. Rilla and S. Quirt

- How have you benefited from the County Organic Farming Program? Via demonstrations, field days, newsletter, Web site? Other benefits?
- What are your greatest/most important needs from the program (i.e., marketing, research/education, certification/regulation)? Other needs?

Table 1. Focus session terms of reference/brainstorming rules

<u>Terms of Reference</u>	
1.	Write down 10 things (needs, benefits, etc.) in response to the question(s).
2.	Share your list with people at your table.
3.	Create a large list for your group.
4.	Prioritize your list.
5.	Select a spokesperson to present ideas to group.
6.	Total group discussion.
<u>Brainstorm Rules</u>	
1.	All ideas are <u>good</u> ideas.
2.	No judgment.
3.	No explanation; be fast; no comments.

Each group reported back their findings in a plenary session for a general discussion among all the growers.



Figure 3: *Opening of a Focus Session in Marin by Sean Swezey, UC SAREP director*

Field Visit

In each county, the evaluation team visited farmer and research fields, and discussed with the organic coordinators and grower-cooperators the program benefits and challenges (Figure 4).



Figure 4. Janet Czarnecki talking to Evaluation team during the field visit

Survey

For each county, a survey questionnaire was prepared taking into consideration the characteristics of the production zone and the goals of the particular county program. A questionnaire placing emphasis on row and tree cropping systems was developed for Ventura County, while dairy product and animal care were also included for Marin and Humboldt counties in addition to row and tree crops.

The questionnaire was pre-tested for clarity of questions and time needed to complete it by the members of the focus group in each county. The questionnaires were sent out in May and June 2004, completed questionnaires returned in July and August, and data analysis conducted in the fall using the statistical analysis package SPSS (Table 2). Due to the relatively low response rate, additional cross tabulation analyses were not conducted. Attachments 2, 3 and 4 include the results from the surveys presented in the same format and order as the original questionnaires used for each county.

Table 2: Survey questionnaires dispatched to the counties and response rate

County	Number of questionnaires successfully delivered	Number of Surveys Returned	Response Rate
Ventura	115	19	17%
Humboldt	124	19	15%
Marin	155	31	20%
Total	394	69	17.5%

Results

Ventura County

Ventura, a county with high land values that is rapidly becoming urbanized, is located in the southern Pacific coast of California (Figure 1). It is bordered to the east by Los Angeles County, to the west by Santa Barbara County and to the north by San Luis Obispo and Kern counties. Ventura has a population estimated at 753,197 in year 2000 (Fulton et al. 2003) and covers a total area of 5,719 km² (2,208 mi²) with more than 16 percent of the area under water. The vast majority of farmland is located outside the growth boundaries (a legal boundary separating urban land from rural land.). In 2000, the county had approximately 111,700 acres of cultivated agricultural land of which only 10,800 acres were located inside the growth boundaries and can be developed. Approximately 45 percent of the land inside the growth boundaries (65,000 acres) was undeveloped in 2000. Urbanization continues to increase, leading to a decrease in farmland. With a fast growing population, Ventura County agriculture is facing many challenges related to urban “spread” and the reduction of farmland and farm business “critical mass.” Successful ballot measures have recently been passed to plan urban development and stop loss of farmland, estimated at 3,000 acres over the last 10 years. However, these measures did not pass without opposition, and future costs to farmers will increasingly need to be borne by publicly financed agricultural open space districts, the purchase of development rights, and other public and private measures supportive of agriculture. One new and highly visible area of growth and support for Ventura County agriculture is the emergence of a successful organic production community in the county (Swezey 2003). In 2001, Ventura County ranked seventh among all California counties in number of registered organic producers (57) and organic acreage (over 4,400 acres). Organic growers and processors declared a farmgate sales value of over \$5 million in Ventura County in 2001. Lemons, oranges, berries and avocados lead the list of local organic crops. Growth in sales in the organic farm production sector in California has averaged nearly 20 percent per year in recent years (Swezey 2003). Given these trends, a new group of Ventura farmers and UC Cooperative Extension staff is aiming to strengthen agriculture that is environmentally friendly and responsive to consumers. A new partnership among the farming community, SAREP and the Ventura County Cooperative Extension office is a positive response to economic and environmental trends in the region.

Ventura County Organic Farming Program

In March 2002, SAREP awarded a three-year grant to support research and extension activities for organic vegetable and row crops farming systems in Ventura County, working with County Director Larry Yee. The funds provided research support for an existing UC Farm Advisor, Oleg Daugovich, to spend 20% of his time serving the growing organic industry in his county. The Clarence E. Heller Charitable Foundation provided the funds to SAREP.

Impact of Ventura County Organic Program

A. From the Interview and Farm Visits

On April 20, 2004 the evaluation team met with organic coordinator and UC farm advisor Oleg Daugovish in Ventura County. Later in the day we visited a cooperator of Oleg's, UC Hansen Trust Director Sheri Klittich, who oversees the demonstration farm where Oleg conducts on-farm research. The team also visited the Ventura County Agricultural Commissioner's Office to obtain information on registered organic growers.

There are more than 200 commodities grown in Ventura County; some growers are more focused on fruit trees while others grow row-crops. Strawberries are the highest value crops of the county. The next most valuable crops are cut flowers, lemons, and avocados. With so many crops, it can be a challenge to provide organic transition assistance. Oranges and citrus are easier to grow organically, however, there is a huge demand for organic strawberries. Small farmers are interested in participating in the farm-to-school project and farmers market, which is a good place to sell their produce. Daugovish estimates that 50 percent of the growers who farm organically are not certified. He stated that conventional farmers in the area also try to create and maintain more sustainable farming systems and he works with them as well. See his Web site for more details on the work described below
<http://ceventura.ucdavis.edu/Vegetable%5FCrops/Organic.htm>.

Crops that have the greatest demand in the organic market

The demand for organic strawberries is increasing, but costs often outweigh the benefits. There appears to be greater opportunity for organic oranges, lemons, limes, tangerines, celery, avocados, and mixed vegetables but marketing may present challenges. The cultivars with good yields in conventional farming (i.e., strawberries) do not always perform as well in organic farming systems. Ames et al. (2003) reported that it is important to have appropriate varieties for organic strawberries, as in addition to determining yields and quality, the variety also determines production seasons and pest-control practices. Bull and Muramoto (2004) suggest there may be differences in yield between organic and conventional because of the possible differences in susceptibility to diseases (foliar, soil borne), to insect pests, and in response to nutrient availability or quality.

Based on the above assessment of Ventura County and the current situation and needs of his clientele, he has focused on researching the biofumigation potential of mustards cover crops and performance of new strawberry varieties.

Biofumigation potential of mustards – On farm research

The study was conducted near Santa Paula in 2002 to compare the effect of tissue mulching and consequent irrigation on survival of sclerotia of *Sclerotinia minor* (lettuce leaf drop disease) citrus nematode (*Tylenchulus semipenetrans*) and weed seeds of burclover (*Medicago polymorpha*), annual ryegrass (*Lolium multiflorum*) and pigweed (*Amaranthus retroflexus*). Agronomic performance of romaine lettuce and celery following biofumigation were also evaluated. According to Daugovish, results indicated that addition of organic material to the soil caused dramatic reduction in citrus nematode survival. Nematode suppression was 92% greater after oriental and yellow mustard (with the exception of yellow mustard treatment with additional plastic) than after cereal or legume. Walker and Morey (1999) also reported

similar findings on citrus nematode population after soil was amended with several Brassica species. This was attributed to possible contribution of mustard allelochemicals to nematode suppression. Biofumigation in the field did not affect growth of sclerotia of *S. minor*, except when oriental mustard was used in combination with plastic (75% reduction in growth compared to control). The effect of oriental mustard tissue extracts on sclerotia growth was further assessed in the laboratory. No sclerotia grew in aqueous extracts from oriental mustard tissue and sclerotia growth was reduced about 60% in tissue extracts from oriental mustard/plastic and cereal treatments. Oriental mustard was superior to other crops in inhibiting sclerotia growth in both field and lab tests. Lettuce following yellow mustard and plastic was nearly disease-free and consequently resulted in the largest lettuce heads at the time of harvest.

Cover crop evaluation – On farm research

Eight cover crops were evaluated for dry biomass production, weed competitiveness, and as hosts for insect natural enemies in 2002 and 2003 near Santa Paula. Daugovich reported that Faba bean, *Vicia faba*, had 410% greater biomass than other legumes in 2002 and 250% greater (1640 g m^{-2}) in 2003. Yellow mustard, *Sinapis alba*, had 15% greater biomass (2618 g m^{-2}) than other *Brassicaceae* crops in 2002, while oriental mustard, *Brassica juncea*, had 380% greater biomass (3596 g m^{-2}) in 2003. ‘Juan’ triticale, *Triticum aestivum* X *Secale cereale*, had 70% greater biomass (2234 g m^{-2}) than other cereals in 2002 but was not different in 2003. Weed dry biomass was greatest in legumes, with the exception of Lana vetch, *Vicia villosa* ssp. *Dasycarpa*, in which it was similar to that in cereals (11 g m^{-2}). All *Brassicaceae* crops were nearly weed-free. Weeds regrew faster than faba bean after mowing, resulting in 390% greater weed biomass in faba bean than in cereals. In both years, the greatest number and diversity of natural enemies in the four sampled groups were found in vetches, followed by other legumes and yellow mustard. Cereal crops had a poor diversity and low number of natural enemies, with the exception of a temporary increase in predatory thrips numbers during crop flowering, likely associated with an increase in prey (western flower thrips, mainly *Franklinella occidentalis*) availability.

Assessment of three main commercial strawberry varieties in organic production

Under conventional management systems, yields of Camarosa and Ventana vary from 6,100 to 6,975 crates per acre under California conditions and appropriate planting system and management (Larson and Shaw 2001). Camarosa produces large, bright, firm and flavorful fruit with a good sheen. The berry holds up well so it can be picked with full red color and still retain a reasonable shelf life. Ventana is a red rich variety that has a large size and conical shape. Ventana is well adapted to early season planting and has performed very well in southern California. Diamante was also developed by the UC strawberry breeding program. It is a day-neutral variety that produces large, flavorful, firm fruit with a bright red sheen. It retains good shelf life when picked with full red color.

Oleg evaluated yield and quality of conventional transplants of Camarosa, Ventana and Diamante strawberries under organic conditions in 2002-2003, and organic transplants of Diamante, Camarosa, and Seascape under organic production in the 2003-2004 growing seasons to provide Ventura County growers with the appropriate varieties for organic farming. Preliminary yield data is presented below (Table 3). Interestingly, in 2004, organically grown Camarosa yielded similar to conventionally grown, while Diamante suffered a major setback from severe Verticillium wilt towards the end of season.

Table 3. Preliminary yield data of organically managed strawberry cultivars in Ventura County.

<u>2003 - Yield Total for Season</u>		<u>2004 - Yield to May 26, 2004</u>	
(lbs/20 plants)		(lbs/20 plants)	
Camarosa	17.9 A	Camarosa	27.3 A
Ventana	13.5 B	Seascape	17.5 B
Diamante	12.6 B	Diamante	14.0 C

Other Achievements

Farm-to-school program. More than 25 organic farmers participate in the farm-to-school program. The produce is collected from farmers and distributed to schools in the Ventura school district. The program is expanding to more farmers and a new school district (Oxnard). Community Alliance with Family Farmers (CAFF) aids in coordinating the effort. This program accumulates profits and it is expected to support a cooling and processing facility to allow the expansion of the assortment of organic food products for school lunches.

Participation in Organic Symposium. Daugovish took active part in the organic symposium of the Agronomy Society of America national meeting in 2003, where he presented his research work on cover crops.

Additional activities include:

- Frequent grower meetings to identify needs and respond to questions.
- Established networking with growers electronically (odaugovish@ucdavis.edu).
- Field days conducted to introduce growers to new methods or techniques.
- Organization of organic production short course.
- Documents made available electronically, at <http://ceventura.ucdavis.edu/Vegetable%5FCrops/Organic.htm>

Overall Assessment

Biggest impacts of the UCOF Extension program in Ventura County

- Extension of reliable UC developed information on organic practices.
- Contacts for farm-to-school marketing and other local markets for growers.

Areas where coordinator sees greatest need

- New marketing methods
- Different ways and methods to grow organically.
- Exposure to organic farming accomplishments/experiences of other countries.
- More information about weed control methods, cover crops, and beneficial insects.
- More information about certification regulators and procedures.

Need for more research/work in the following areas

- Farm-to-school (expanding the market/marketing in general).
- Weed control challenges.
- Reliable nitrogen sources for soil fertility.
- Cover crops – biomass, weed control, support beneficial organisms.

Coordinator experience with organic program, SAREP

Daugovich said the organic program is attracting more and more growers. However, because his coordinator work is limited to 20 percent of his time, it does not allow him to pay as much attention to the growers as they need. While he appreciated the good collaboration and support from SAREP, he urgently requests a program assistant to help him reach more clients. More financial support is required to expand the activities.

B. From the Focus Group

On April 21, 2004, 6 growers, Humphrey Fellow Program Director Dr. Paul Marcotte, SAREP Associate Director Dr. Jenny Broome, SAREP Director Dr. Sean L. Swezey, and the 3 Humphrey Fellows, Dr. Afiavi “Rita” Agboh-Noameshie, Ms. Suzan Al-Ajjawi, and Mr. Yao Nguessan were present at the Ventura County focus session held in the Ventura County Cooperative Extension office. The results from the focus session are summarized here:

Benefits

- At least five people present at the focus session attended approximately 6-8 meetings organized by the program.
- Research results were mailed to interested growers.
- There was funding/support for the farm-to-school program.
- The program produced cover cropping research results.
- Growers received information on beneficial insects and best habitat species.
- Area growers were invited to CAFF supported Lighthouse Farm breakfast meetings, which allowed networking among 20-40 attendees.

Needs

Growers identified the following issues in marketing, research and education, and policy.

Marketing issues:

- must educate restaurants, consumers, and other buyers to the benefits of organic (i.e., issues related to cosmetic appearance vs. flavor)
- request regional cooperation for labeling, distribution, education, marketing.
- need inventory of local organic growers to facilitate market access for consumers

Research and Education information issues:

- possibilities/benefits of organic farming.
- basic requirements/regulations/philosophy of organic farming
- organically acceptable poisons for gophers, snails, ants, Argentine ants.
- organic farming and appropriate technologies.
- timing of planting of host plants for beneficial insects to support control of key insects pests

Certification issues:

- concern about purity of inputs and importance of independent review of organic inputs effectiveness and purity (OMRI, NOP federal standards).
- explore possibility of merging private certifiers with county registration function.
- how habitat planting affects compliance/certification.
- plight of intermediate-sized organic grower up against really big organic growers.

Policy issues:

- educate public about costs of “cheap food,” personal health.
- make connection between fresh produce and good health, clean environment.
- question the sustainability of transporting harmful chemicals (i.e., Bhopal chemical disaster/human deaths, Sacramento River fertilizer-laden train derailment/fish kills).
- GMO contamination.

Growers who had not interacted much with the county program had the opportunity to comment. They suggested the identification of new markets and access to them, expressed interest in receiving information on research, data, and meetings through email and other outreach, and wanted to attend field days and have access to specific farming methods and solutions. Several growers mentioned the CAFF-organized Lighthouse Farm meetings, which they would like to see continued.

C. From the Survey

We received 19 completed questionnaires back from the 115 questionnaires that were successfully delivered, resulting in a 17% response rate. Although we cannot assume that survey respondents are representative of Ventura County organic growers as a whole, these survey results do provide insight to the management practices, interests and concerns of almost 20% of Ventura's organic growers. Attachment 2 includes all results from the survey. Presented in sections A and B of the attachment are results on organic practices in soil, pest and crop management that should be useful for the coordinators in continuing and fine tuning their work in the county.

Section C includes the information on the survey respondents' assessment of the past 2 years of the Organic Farming Coordinators work in the county. In Ventura, 50% of the respondents had heard of the program, mostly through interactions with the coordinator or others in cooperative extension. Fewer of the respondents had actually attended a meeting, 33.3%, but all of these respondents felt that they had learned of a new practice through these meetings, and almost 30% had actually tried the new practice. Top research issues that the respondents felt should receive greater attention included weed management, plant nutrition, and insect management, particularly Argentine ant control. Most important benefits from the program cited by respondents included the farm to school program, and the workshops and information on fertility and biofumigants. Suggested potential improvements included expanding the outreach component of the program in general, as well as providing more un-bias research-based information on organic materials and their effectiveness. Information sources felt to be the most important to the respondents included other farmers, chemical company affiliated crop/pest advisors, and trade magazines.

Finally, section D covered marketing issues, and E covered certification issues of the respondents, and should be useful for the program coordinators in directing their future work. Section F describes the respondents and their years of experience, role on the farm, years of education and any general comments offered.

Humboldt County

With a population of about 127,000, Humboldt County is located in the northwest corner of coastal California. The total land area is approximately 2.3 million acres, of which approximately 25 percent is public land and 25 percent is private agricultural land (U.S. Census Bureau 2003). Private working landscapes are located near redwood forests, mountains and rivers. Rolling pastures and dairies border small coastal cities and highways. Family-owned ranches and farms contribute to the rural quality of life, scenic beauty and local economy. Traditional agriculture includes beef cattle on coastal rangeland, dairy cows on rich pasture bottomlands around Humboldt Bay, and row crops and orchards on terraced river floodplains. The region's mild and moist climate complements a growing nursery, flower and bulb industry. Humboldt County agriculture products (excluding timber) had a market value of approximately \$140 million in 2001.

Ben Morehead, in his 2003 report for the Humboldt County Agriculture Survey, reported that Humboldt County agricultural production does not compare in quantity or economic value with California's leading agricultural counties (local dairies produce one percent of California's annual milk products). However, dairy and ranch lands are "etched more deeply into Humboldt County's cultural and aesthetic landscape than economic data can convey." Humboldt County has been incrementally losing agricultural land to development and other non-agricultural uses. Between 1965 and 1982, county planners estimate that over 87,000 acres of timber, dairy and ranch lands were lost to agricultural production through the creation of rural residential subdivisions. Studies and trends indicate that rural coastal California counties are very prone to population and development pressures. While population growth is low compared to California counties adjacent to larger urban cities, the pressure to convert land out of agricultural uses has dramatically increased. The county's most productive soils are located along the coastal bottomlands surrounding Humboldt Bay and large river floodplains where the demand for residential housing, hobby farms, and public parks is greatest. Residential housing prices are at an all time high. Community perception is that residential development and other non-agricultural land uses are depleting agricultural resources.

Humboldt County Organic Farming Program

In January 2002, SAREP awarded a three-year grant to support research and extension activities for organic farming systems to Humboldt County, working with Deborah Giraud as county director. The funds have supported the creation of a new full time position of organic coordinator in the county, and after advertising the position and interviewing several candidates, the County Director hired Annie Eicher. The Clarence E. Heller Charitable Foundation provided the funds to SAREP.

Impact of Humboldt organic farming program

A. From the Interview and Farm and Retail Outlet Visits

On May 4, 2004 the evaluation team met with the UCCE outgoing County Director Deborah Giraud, new County Director Gary Markegard, and the Coordinator Annie Eicher to discuss the program. Then Annie and Deborah took us to visit several grower cooperators in the area including Janet Czarnecki's Redwood Roots farm and CSA and Paul's Warren Creek Farm.

The following day after the focus group the evaluation team met with Phil Ricord, the market manager for Wildberries Marketplace and then we visited the Northcoast Cooperative Market and met with Len Mayer, market manager. On Thursday morning the team met with Paul Holzberger, head of the organic program for Humboldt County Ag Commissioner and graduate student Allyson Carroll to discuss the GIS mapping project and get local organic registrant data.

At the beginning of the Organic Farming Program in January 2002, organic coordinator Annie Eicher conducted a needs assessment through contact with farmers and with Humboldt County Agriculture Department records. Additional information was obtained from the Humboldt County Farm Bureau, the North Coast Growers Association, the Fortuna Market Association, and the Southern Humboldt Farmers Market Association. A survey was also conducted by sending questionnaires to Humboldt County farmers; one form was directed to growers, another to dairy operators. The forms listed a number of potential services the new Organic Farming Program could provide. The results of this initial survey indicated that about 70 percent of those responding thought that on-farm research would be a “very useful” service, and most indicated an interest in participating in the program. Educational workshops were also ranked as “very useful,” with demonstration plots, a newsletter, Web site, and handouts ranked by most as “somewhat useful.” The growers expressed interest in topics such as pest and disease resistance, soil fertility management, and weed control. Dairy operators were interested in learning more about alternative medicine, nutrition, and pasture management. Both groups wanted to learn more about new federal regulations governing organic production.

The Humboldt County organic program took into consideration farmers’ concerns in focusing the work, including the development of an on-farm research program and educational workshops.

Increase in number of organic livestock

Since the start of the organic program, the number of organic livestock operations in the county has increased from zero to two organic beef and 12 organic dairies in 2003.

On-Farm research

On-Farm research is one of the most active and visible ways to strengthen links between growers and research and extension; the Humboldt organic program has supported such research. It is important to note that the topics addressed by Annie’s on-farm research were based on growers’ knowledge and experience in organic farming.



Figure 5. Garden Symphylan
Photo by Jack Kelly Clark



Figure 6. Symphylan damage on lettuce
Photo by Jenny Broome

Garden Symphylan, *Scutigera immaculata* (Figure 5), also called garden centipedes, damage sprouting seeds, seedlings before or after emergence, or older plants. They feed primarily on root hairs and rootlets, and their ability to injure the crop decreases as plants get larger. However, their pitting of older roots may provide entryways for pathogens. They also cause quality and yield loss. Janet Czarnecki's farm and community supported agriculture (CSA or subscription farm) program, was the site of on-farm research in Humboldt County. Czarnecki has very light soil, high in organic matter. As a grower, she noticed a relationship between compaction from her tractor tires and reduced problems with the Symphylan. The evaluation team was able to observe research at this site. (Figure 6).

Corn earworm, *Helicoverpa zea*, (formerly *Heliothis zea*) also called tomato fruitworm, is a full-grown larvae of the corn earworm. Corn earworms primarily cause economic damage to fresh market and processing sweet corn and hybrid dent seed corn. They also feed on field corn, tomatoes, lettuce, peppers, and snap beans. Larvae feed in the tips of the ears, devouring kernels and contaminating the ear. While even severe infestations damage fewer than 10 percent of the kernels, this amount is enough to cause serious economic losses in fresh market sweet corn and in hybrid dent seed corn. (Delahaut and Wedberg, 2001). The value of processing sweet corn suffers, as damaged tips must be removed before processing. Organically accepted methods of control include biological and cultural control including the use of the organically acceptable microbial pesticide *Bacillus thuringiensis* (Bt). Several sweet-corn growers participated in trials to control corn earworms using a new hand-held syringe pump device called the Zealator, to apply the material, Bt and oil, down the corn silk.

Soil fertility management – on farm research

Several farmers tested fish fertilizer and kelp sprays. There was no yield increase in the first year with the recommended rate of the product in strawberries, cantaloupes, and tomatoes.

Organic dairy

The main challenge concerns animal health and the use of antibiotics. Eicher hopes to work on this issue with Steve Berry, a UC Davis dairy management specialist.

- Interest in organic dairy in Humboldt County is increasing, and Eicher and colleagues received a USDA-SARE grant to support this interest. Dairy parasites are the main problem because of high humidity in the region and the fact that there are no cold winters to break the disease cycle. No parasiticide is allowed in organic farming; therefore some growers are pursuing a “grass-fed beef” label rather than “organic.”
- Outreach work – Workshops, newsletters, phone calls, on farm research are the major outreach work. Humboldt county growers do not make much use of the Internet. Workshops on organic/grass fed beef in the areas of health care, nutrition, and pasture management are planned.

Overall Assessment

Biggest positive impacts of the UC organic farming program

- Establishment of a relationship between Coordinator and clientele (telephone calls, walk-in, etc.).
- Organized workshops are well attended by interested clientele.
- New directions for the clientele have grown out of coordinator’s program, including increases in dairy and meat production operations during her tenure.
- Zealator work has been well received, and the coordinator hopes to assist small growers with a lending system if they cannot afford the cost (\$250) of the unit.

Greatest clientele needs

- Information on how to manage crops and livestock organically.
- Meat: current facilities and infrastructure needed to slaughter and manage the meat.
- Resources to survive financially.
- Markets to support the growers.

Relationship with UC SAREP

- County director described working with SAREP as “fabulous.”
- The original grant writing has opened doors; Humboldt personnel say without it, the organic program would not have existed.
- Liaison with SAREP has been great – director Sean L. Swezey, agricultural ecology analyst Robert L. Bugg, and other SAREP staff were very cooperative.
- Workgroup meetings, sharing results, connecting with new researchers was very useful.
- Without foundation support, Eicher’s USDA-SARE grant would not have happened.
- Greater collaboration with SAREP and other counties with organic programs.
- Possible joint research projects, enabling greater replication of treatments in several counties or regions, and higher likelihood of publishing results and finding larger meaning of treatments in several regions.

If additional funds were obtained, emphasis will be on

- Student intern funding to assist organic program coordinator with research.
- Additional small projects.
- Funding for grower cooperators.

- Travel funds for transportation to fields, meetings.
- Statistical analysis help.
- Coordinating similar research among several regions for replication over locations and time.
- Hiring organic animal researchers to work with Ken Anderson, new dairy person.

B. From the Focus Group

On May 5, 2004, 12 growers, SAREP Associate Director Dr. Jenny Broome, SAREP Director Dr. Sean L. Swezey, and the 3 Humphrey Fellows, Dr. Afiavi “Rita” Agboh-Noameshie, Ms. Suzan Al-Ajjawi, and Mr. Yao Nguessan participated in the Humboldt session. The results from the focus session are summarized here:

The benefits and needs noted by the focus group include the following:

Benefits

- Access to information from Eicher, UC Davis researchers, and other experts.
- Access to technical on-farm research.
- Coordination of meetings, workshops.
- Opportunities to network among growers and experts.
- Botany background of the coordinator (scientific research methods, plant/weed identification).
- Personal attention, timely responses to requests.
- Access to educational material/contact people.
- Innovative thinking
- Pest control research/information.
- Marketing information.
- Program presence gives legitimacy to organic research/farming.

Needs

- Keep program going and expanding.
- Continue workshops with high caliber speakers.
- Consumer education/market development.
- Increase connections to educational institutions.
- Increase/improve networking opportunities.
- Internships/research.
- Access to experts.
- Annual focus group.
- Web site with question and answer format.
- Assistance with certification issues, including certification cost reduction.

C. From the Survey

We received 19 completed questionnaires back from the 124 questionnaires that were successfully delivered, resulting in a 15% response rate. Although we cannot assume that survey respondents are representative of Humboldt County organic growers as a whole, these survey results do provide insight into the management practices, interests and concerns of these organic growers. Attachment 3 includes all results from the survey. Presented in sections A and B of the attachment are results on organic practices in soil, pest and crop management that should be useful for the coordinators in continuing and fine tuning their work in the county.

Section C of attachment 3 includes the information on the survey respondents' assessment of the past 2-3 years of the Organic Farming Coordinators work in the county. In Humboldt, almost 80% of the respondents had heard of the program, quite a high number, mostly through newsletters, meetings, interactions with the coordinator, or others in cooperative extension, and through the Master Gardener program. Fewer of the respondents had actually attended a meeting, 37%, but 42% of the respondents felt that they had learned of a new practice through the program and almost 47% had actually tried a new practice, although only 31% reported adopting a new practice. Top research issues that the respondents felt should receive greater attention included certification issues, fungal diseases, and a list of additional issues in the attachment. The most important benefits from the program cited by respondents included the educational component, credibility and legitimacy of organic, workshops, information, and research. Suggested potential improvements included expanding the program in general, more staff, workshops, more funding to it, focus on larger growers in the region and their issues, and the challenges of increasing competition in the market place. Information sources felt to be the most important to the respondents included the program coordinator and other growers, in the top two slots, followed by other UCCE farm advisors, and trade magazines.

Finally, section D covered marketing issues, and E covered certification issues of the respondents, and should be useful for the program coordinators in directing their future work. Section F describes the respondents and their years of experience, role on the farm, years of education and any general comments offered.

Marin County

Marin County is one of the nine Bay Area counties linked to San Francisco by the Golden Gate Bridge and to the Richmond-San Rafael Bridge. It is bordered on the north by Sonoma County and on the west by the Pacific Ocean. The 520 square miles of Marin offer a wide variety of topography, climate, and vegetation. According to the U.S. Census Bureau, the county has a total area of 2,145 km² (828 mi²). The land area is 1,346 km² (520 mi²), while 799 km² (308 mi²) is water (37% water). Although Marin is usually thought of as a suburban residential and recreational area, ranching and dairying are major features of the county.

The combination of mountains, sea, and climate in Marin County and its 141,400 acres of federal, state, and county parkland, county open space, and water district land devoted to recreation, has made the area a Bay Area recreation destination (Marin County Assessor/Recorder 1996). Approximately 167,000 acres (50 percent) in Marin are farms or ranches. Of the more than 270 agricultural operations in Marin, 70 are considered large farms (annual gross income of \$100,000 or more), and 204 are considered small farms (annual gross income of less than \$100,000). The average size of a farm in Marin is 588 acres; the majority is third- and fourth generation family owned operations. Agriculture in Marin contributes over \$50 million annually to the local economy, with milk production dominating at 65 percent. Of the over seven million people who live in the greater Bay Area only one to two percent have jobs in agriculture, and 80 percent of agricultural jobs are off-farm.

Marin's topography is one of rolling hills, coastal bluffs and flat interior valleys. While the hilly topography, prevalence of nonprime soils and lack of reliable water supplies are deterrents to intensive agriculture like row crops, some areas in Marin that are rich in alluvial soils support diverse vegetable and specialty crops. The coastal agriculture of Marin is well known for its quality grasslands that make them well-suited for grazing dairy beef cattle and sheep most of the year. About 20 percent of the Bay Area's milk comes from Marin dairies. Milk and milk products have dominated agricultural sales in Marin for over 125 years.

Livestock production is the second largest agriculture industry in the county, with more than 150 beef cattle, cow/calf, and sheep grazing operations producing livestock, replacement heifers for dairies and breeding stock. While milk and livestock products dominate Marin's agricultural activities, a growing number of small truck farm operations produce organic vegetables on approximately 140 acres for Bay Area restaurants and farmers markets valued at about \$800,000. Several innovative operations have strong reputations for producing a high-quality product including Star Route Farms vegetables and greens in Bolinas, Niman natural beef, and Green Gulch Farms in Muir Beach. Since 1983, the Marin Farmers Market has helped connect consumers directly to farmers and their produce.

Marin County is also well known for "farming the sea." Oyster culture is the oldest aquaculture industry in California, dating back to the 1850s; a half-dozen Marin County oyster farmers produce 20 percent of the state's commercial oyster crop.

In the midst of this natural/agricultural/urban setting, a coalition of farmers, ranchers, regulatory officials and citizens has organized to revitalize Marin County agriculture. Many believe 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 Organic Farming Program

In January 2002, SAREP awarded a three-year grant to support research and extension related to organic systems to Marin County, working with County Director Ellie Rilla. The funding supported the creation of a full time organic coordinator position, and after advertising the position, and interviewing several high caliber candidates, the County Director hired Steve Quirt. The Clarence E. Heller Charitable Foundation provided the funds to SAREP.

Impacts of Marin organic farming program

B. From the Interview and Farm Visits

On May 18, 2004 UCCE county Director Ellie Rilla and the Coordinator Steve Quirt met with the evaluation team. Later in the day Steve took the evaluation team to visit several cooperators including organic farmer Warren Weber and Marin Organic Director Helge Hellberg. The next afternoon, members of the team met with the Anita Stauber of the Marin County Agricultural Commissioner's office who is in charge of the organic program and obtained mapping data.

Marin County agricultural producers are in transition (Table 4). The "Grown in Marin" program was designed to assist growers with information, field assistance and collaborative action to help in the transition to diversified organic practices. The majority of agricultural production in Marin comes from large-acreage family farms specialized in animal agriculture (dairy, beef, sheep). Many of these operations are at risk and looking for ways to diversify. The program assists entry-level farmers and established organic farmers, and provides help to "Marin Organic," the regional marketing label. It collaborates with a third-party organic certification program, "Marin Organic Certified Agriculture," a part of the Agricultural Commissioners Office.

Table 4. The number of Marin organic operations is increasing.

Current # of Organic Producers in Marin	29
Amount of Acreage	1,560 acres
Additional acreage certification applied for	1,400 pending
Acreage total in 2003	1,560 w/ 1,400 acres pending
Acreage total in 2000	357 acres
Acreage total in 1995	24 acres
3 Top Organic Crops in Marin	Milk, cool weather greens, olives

Farmers and ranchers are interested in making the transition to organic. According to "The Status of Marin County Agriculture" survey conducted in 2002 at the start of the project, of 83 respondents, 27% (22) said that they farmed all of their operation organically and 19% (17) farmed part of their operation organically. The remaining 54% (44) do not use organic farming methods. When asked about their interest in making the transition to organic operations, 33% said that they were interested and 28% said "maybe." Thirty-nine percent said that they were not interested. Of those interested in transitioning to organic, respondents asked for:

- assistance with certification (37%),

- help with organic methods (31%),
- more information on various crop or variety opportunities (22%),
- and 9% asked for assistance with animal health, antibiotics, and financing.

According to the coordinator, there are three kinds of Marin Farmers: traditional farmers (third- and fourth-generation ranchers), new progressive farmers (mostly urban background), and estate farmers (wealthy ranchers using their resources to improve agriculture).

One of the important impacts of the UCCE Marin organic program coordinator is to bring the three groups of farmers together, especially the traditional and new progressive farmers. This is done by “cross-pollinating” them through workshops and creating business opportunities. For example, one traditional dairyman had a 150-cow dairy, which he would not be able to work and survive economically. So he sold the animals and leased the land, but kept two to three acres where he is doing well farming organic strawberries and netting \$25,000/acre.

Quirt is the bridge between the different communities of farmers, and achieves this without bias. More and more Marin County acreage is being farmed organically. Grass-fed beef is increasing in the county, but not organic, as the ranchers have not been able to run their operations without parasiticides that are not allowed in organic agriculture. Quirt hopes the ranchers may be move toward organic standards eventually.

Based on the survey results and an understanding of the country and years of experience working there, Steve has been engaged in the following research and education efforts.

Field Consulting

The coordinator made 36 field consultations with growers this past year on organic crop diversification and start-up farming operations. Crops included organic strawberries, artichokes, cane berries, potatoes, garlic, cool weather row crops, organic butter and cheese and organic beef. Some of these consultations have resulted in new farms, with several enterprises planned for next year.

Workshops

The program completed ten workshops since the spring of 2002. Topics covered include Organic Strawberry Production, Organic Certification, Organic Cut Flower Production, Organic Row-Crop Farming, Direct Marketing, Small Animal Agriculture Opportunity and others. Total attendees were 473 with an overall satisfaction rate of 86%.

Workgroups

Two active workgroups, Organic Livestock and Composting exist and at least two more, “Young Farmers and Organic Small Dairy” are being prepared.

Newsletters

Nine newsletters, which reach 600 farmers, ranchers, advocates, politicians, media and decision-makers, were completed. These newsletters promote organic agriculture and offer examples of successes and resources.

Web site

The Web site *Grown in Marin* www.growninmarin.org, was created; it lists all the organic farms/operations and agricultural support groups.

New projects for 2004

- Develop organic workshops on value-added products, and small and seasonal dairying.
- Develop a Young Farmers Forum that will help young growers (with or without land), identify what they need to survive as organic farmers.
- Create a database of young farmers interested in organic farming, possibly in collaboration with other farming organizations, to facilitate networking opportunities.
- Organize grower-to-grower farm tours to connect local organic farmers.
- Initiate field trials for globe artichokes on three to four ranches, and develop a Marin rootstock supply.

Next year the coordinator hopes to be involved in more on-farm trials in artichokes, berries, pasture management practices, and rotational grazing.

Overall Assessment

Major achievements of the program so far include:

- Introduction of new crops and marketing models, bringing in new ideas. Quirt's marketing work has involved assisting clientele with direct Internet sales, and supporting the creation of a local slaughterhouse.
- Young ranchers support.
- Education program, newsletter, workshops etc.

Barriers for the coordinator and the growers:

- Lack of money.
- County permitting process; change is slow.
- Traditionalism.
- Lack of water and arable land for row crops.
- Marketing challenges.

Relationship with UC SAREP:

- Original funding has meant everything to the work. Thanks primarily to SAREP director Sean L. Swezey, and to SAREP agricultural ecology analyst Robert L. Bugg during the early grant-writing stages.
- SAREP has remained fairly "hands-off" and allowed the project the freedom to develop as county-level leaders felt was needed. Swezey has been the main contact.
- Swezey helped local growers on hiring committee to hire Quirt.
- Help redefine UC priorities in support of this kind of position.
- Closer connection with SAREP might be helpful. It is important to improve the collaboration with other county organic program to share experiences.

If additional funds were available:

- Continue position support if possible.
- Full-time assistant for coordinator.
- Hire student interns from area families to assist coordinator, this will increase community engagement.
- Funding for travel.

B. From the Focus Group

On May 19, 2004, 16 growers, SAREP Director Dr. Sean L. Swezey, and the 3 Humphrey Fellows, Dr. Afiavi “Rita” Agboh-Noameshie, Ms. Suzan Al-Ajjawi, and Mr. Yao Nguessan participated in the Marin focus session (Figure 7). The results from the focus session are summarized here:



Figure 7. Focus group members share their results.

Benefits

- Support/enhance expectations regarding the future of agriculture.
- Information on agriculture options, alternatives, income-generating ideas bring in expertise, both from inside and outside (i.e., workshops).
- Enhance generational farm succession.
- Educate new agriculture property owners.
- Help with compliance of organic certification and standards.
- Help identify available land; matching people/ land.
- Assist marketing local products/crops.
- Tours, promotions, farmers markets Web site, newsletters.
- Linking agriculture-related related organizations.
- Developing programs for farmers/ranchers.
- Helping to identify and secure funding.
- Networking, creating links (ranchers, organizations, agencies).
- Directly connecting producers with consumers (schools, farmers markets, CSAs).
- Directly responsible for increasing the number of organic farms and organic acreage in Marin.
- Strengthens collaboration.

- Community building.
- Bridging gap between organic/conventional.
- Strong knowledge of crop farming
- Increased communication (Web site/newsletter/classes).

Needs

- Continue program/permanent program/support staff
- Labor pool/intern program.
- Equipment-sharing program.
- Organic food in schools/agriculture education program.
- Connecting farming/agriculture with food/consumers.
- Promoting sustainable/systems approach to local agriculture.
- Cooperative marketing/distribution.
- Identify ranchers willing to lease small parcels.
- Research/information re. organic.
 - Seed & supply sources
 - Tillage techniques, weed/pest control.
- Idea-sharing among farmers/ranchers (visits, farm tours).
- More attention to livestock, dairy, vineyards, tree crops.
- Marketing: help in developing new markets/marketing infrastructure.
- Schools, restaurants, retail.
- Increase organic certifications/completion of grass-fed standards/certifications.
- Water awareness.
- Increase general public support/understanding.
- Increase coastal commission/park service understanding.
- Work on certification gaps.

C. From the Survey

We received 31 completed questionnaires back from the 155 questionnaires that were successfully delivered, resulting in a 20% response rate. Although we cannot assume that survey respondents are representative of all Marin County organic growers, these survey results do provide insight to the management practices, interests and concerns of 20% of Marin's organic growers. Attachment 4 includes all results from the survey. Presented in sections A and B of the attachment are results on organic practices in soil, pest and crop management that should be useful for the coordinators in continuing and fine tuning their work in the county.

Section C includes the information on the survey respondents' assessment of the past 2 years of the Organic Farming Coordinators work in the county. In Marin, 93.5% of the respondents had heard of the program, mostly through interactions with the coordinator, newsletter, meetings or other friends or farmers. Fewer of the respondents had actually attended a meeting, 77%, but this was still the highest number compared to the other counties, and also 60% reported that they had learned of a new practice through the program, and 41% had actually tried the new practice, and 46% had adopted a new practice. Top research issues that the respondents felt should receive greater attention included weed management, labor supply

and cost of equipment, marketing, and seed production issues as well as many other issues listed in the attachment. Seventy-three percent of respondents felt they had benefited from the program. Most important benefits cited by respondents included communication, information, expert advice, workshops, sense of community, assistance with paperwork. Suggested potential improvements included increasing the programs, expanding the outreach, addressing challenges related to competition between family farms and corporate farming, expand crops covered and others. Information sources felt to be the most important to the respondents included other farmers, the program coordinator and UCCE publications.

Finally, section D covered marketing issues, and E covered certification issues of the respondents, and should be useful for the program coordinators in directing their future work. Section F describes the respondents and their years of experience, role on the farm, years of education and any general comments offered.

Conclusion

The Ventura, Humboldt, and Marin county directors and organic program coordinators and the growers are very enthusiastic about the organic farming programs. Through the interviews and focus sessions held and the surveys conducted in the three counties, it clearly appears that the organic farming program has benefited growers and helped them solve some of the problems they have faced either as continuing organic farmers or during the process of switching from conventional to organic farming. Growers in each county requested permanent organic coordinator positions showing the benefits already obtained and the recognition that growers still face many challenges. SAREP's continued role and contribution will have a major effect on organic farming in the three counties. They are looking at SAREP for help to:

- provide funding and expertise to continue supporting the coordinators and additional on-farm research,
- enlist appropriate speakers for workshops and seminars,
- provide more information about organic farming on SAREP's Web site for interested farmers,
- give more attention to organic livestock and dairy production, and
- facilitate collaboration among the counties.

There is a strong working relationship between the growers and the organic program coordinators. Many growers who could not attend the focus sessions wanted to show their feelings and their good will through support letters to the coordinators (Attachment 5).

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Attachments

- Attachment 1. Project Coordinator Sample Interview Questions
- Attachment 2. Grower Survey Results from Ventura County
- Attachment 3. Grower Survey Results from Humboldt County
- Attachment 4. Grower Survey Results from Marin County
- Attachment 5. Support letters from Humboldt and Marin County