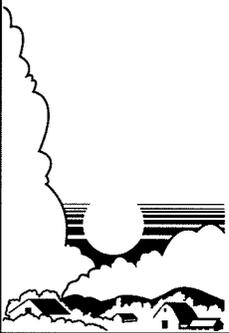


THE UC SMALL FARM PROGRAM



The First Fifteen Years

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TABLE OF CONTENTS

I	Introduction	4
II	Executive Summary	6
III	Profile of California Small Farms	7
IV	A Brief History of the Development of the Small Farm Program	9
V	UC Small Farm Center	13
VI	County Reports on Small Farm Research and Education	17

I INTRODUCTION

On behalf of the University of California Small Farm Program, I am pleased to send you this status report. It is our intent that it will be useful to you as a summary of our activities, successes and challenges in meeting the needs of small-scale and limited resource farmers and their clientele.

California is perhaps the only state that has established within its Land Grant/Cooperative Extension system a program funded specifically to address the special needs of small-scale and limited resource farmers. In 1979, when the Legislature appropriated \$100,000 to Cooperative Extension, it and the University jointly recognized the unique problems and needs of the three-fourths of California farmers who have limited resources and limited income. Since that initial annual allocation, the UC Division of Agriculture and Natural Resources has annually directed an additional \$85,000 of federal Rural Development and Part-time Farmer funds toward the Small Farm Program. Numerous county-based farm advisors and campus-based specialists also contribute to the education and research needs of small farmers.

Of the 80,000 farms in California, more than 60,000 can easily be classified as “small,” regardless of which of several possible definitions is used. While it is true that the 10 percent of our largest farms produce more than 90 percent of our food and fiber, these small farms have a tremendous impact on California’s economy in ways that might not be readily apparent. Small farms are responsible for much of the state’s renowned agricultural diversity. Much of the leadership for sustainable agriculture, environmental quality and food safety has come from the small farm community. Small farmers are a broad mix of ethnic and social groups. They enrich our communities by living where they farm, buying tractors, equipment and supplies, by linking rural and urban life, and by being a part of our schools, libraries and service organizations.

The purpose of our UC Small Farm Program is to benefit small farmers and marketers, their clientele, and the natural and renewable resources they depend upon. We do this through a variety of educational means that are linked to research-based information in numerous academic disciplines ranging from pest management to marketing to engineering. The coalition and networking of groups and individuals within and outside the University is integrated directly into the development and con-

duct of our educational programs. Much of the success of the Small Farm Program is a direct result of teamwork — in determining needs and priorities, in establishing research and education programs, and in the conduct and delivery of those programs.

Currently, priorities for the UC Small Farm Program address issues common to most small-scale farmers and marketers. Some larger operations may also have an interest in one or more of our priorities; thus our audience is not exclusive and defies narrow definition. On a statewide basis, the highest priorities are specialty crop production, direct marketing, organic and sustainable agriculture, entry-level farming and ethnic farmers. We expect these issues to require continued priority but expect land use, other rural-urban interface issues and animal production-marketing systems to become increasingly important issues.

The dollar amount budgeted for the UC Small Farm Program has increased significantly since 1976; the number of UC specialists and advisors addressing small farm issues has similarly increased. Yet the challenges and unmet needs of small farmers in California remain mountainous and the available resources seem to be minimal. Currently, one of the six positions assigned full-time “limited-scale resources” responsibility is unfilled. As I am also an Extension vegetable specialist, I serve only part-time as director of the UC Small Farm Program. Research conducted specifically to address the unique needs of small farmers is far too little, with funding by the Agricultural Experiment Station apparently a low priority.

We are, however, proud of the accomplishments of the small farm advisors and other UC staff over the past 10 to 12 years. Furthermore, we are excited about the current level of interest, activity and commitment by UC advisors and specialists and supporting organizations and clientele outside the University. We are optimistic about the future opportunities that small-scale producers and marketers have in meeting consumer and societal needs for quality food and an enhanced environment in which to live. You are encouraged to contact us with your comments regarding this report and our UC Small Farm Program.

Ronald E. Voss
Extension Vegetable Specialist
Director, UC Small Farm Program

II

EXECUTIVE SUMMARY

This report is intended to provide the reader with a glimpse of the development and current status of the University of California's Small Farm Program.

From its uncertain beginnings just over a decade ago, the program has coalesced into a vibrant statewide network of dedicated advisors, specialists, faculty and staff whose common goal is to ensure the continued viability of California's 60,000-plus small farms.

Attempting to define just who is a small farmer is about as daunting a task as trying to define the typical Californian. California's explosive population growth has brought with it a shift in the clientele base. While hispanic vegetable growers and organic farmers have always been and will continue to be a significant portion of the clientele, new groups with different needs, such as the Hmong people of Southeast Asia, have appeared on the scene. Regardless of origin and interest, however, they do share a common bond. The limited scale of their operations creates needs peculiar to their individual enterprises — whether it be eliminating an insect pest “naturally” from organic bok choy or learning how to sell produce directly to restaurants.

At the heart of this program is the Small Farm Center, located on the campus of the University of California, Davis. Its small but dedicated staff serves as a clearinghouse of information for county advisors, farmers, direct marketers, government agencies and interested members of the general public. Its publications and major activities are described in greater detail within this report.

Most of this report focuses on specific research and education in individual counties. These sections should give the reader an appreciation of the incredible diversity in the small-farm clientele — a fact that simultaneously enriches California's agricultural landscape and challenges limited University resources. Those counties with farm advisors specifically assigned to small farm clientele are treated separately in this report. To some extent most of the state's county UC Cooperative Extension offices work with small farm clientele. The final section on county reports includes a sampling of three such counties and their small farm work.

While this document does not claim to be a definitive history of the UC Small Farm Program, it is hoped by the authors and staff who worked on this project that the reader will have gained an understanding of what the program is about, some of the challenges it faces and, most important, some of the good it has accomplished for the increasingly important small-scale producers and marketers of the state.

“Small farms provide a way of life for hundreds of thousands of American families. They enable many of our citizens to live in a rural environment where they prefer to raise their families and stay in touch with this nation’s agrarian heritage.”

Former President Ronald Reagan
(Message delivered to symposium
on Research for Small Farms,
November 17, 1981)

PROFILE OF CALIFORNIA SMALL FARMS

III

One of the difficulties in providing adequate research and extension programs for small farm clientele lies in the lack of consensus over just who is and who is not included in this diverse group. The demographic make-up of small farmers is dynamic and will continue to be so in the foreseeable future, as attested by the influx of Southeast Asian immigrants into California during the 1980s.

Nonetheless, several attempts have been made to define small farmers. According to a 1977 report issued by the Small Farm Viability Project, sponsored by the Governor’s Office of Planning and Research, a “small farm” is characterized by the following:

- The farm family relies on all or a substantial portion of its livelihood from the farm;
- The farm family individually or in partnership with other farm families controls and operates the farm, contributing at least half the farm labor (except in peak season); and
- The present family income from all sources is not more than moderate, which is usually defined as limiting the total family income to the median non-metropolitan family income in the state (Although the report cited a figure of \$17,375 for 1980, more recent data show the level to have climbed to \$25,800 in 1986).

According to the 1982 Census of Agriculture, California farms with gross sales of \$2,500 to \$100,000:

- Numbered 41,000, roughly half the total number of farms in the state; another 25,000 had gross sales of \$2,500 or less.

- Produced more than \$1 billion in sales annually.
- Operated 31 percent of the state's total farmland; and
- Represented 56 percent of all fruit and nut tree farms.

Furthermore, small-scale farmers are more likely to be full owners of the farms they operate and live on their farms than large-scale farmers. Seventy-five percent of small farm operators are full owners, compared to less than 50 percent for those grossing more than \$100,000 in sales. Additionally, 65 percent of small farmers live on their farms.

Small farmers have proven themselves a resilient, innovative sector of agriculture. Many have found marketing niches for products in high demand and/or low supply, and California small farmers lead the nation by virtue of their close proximity to urban centers and tremendous marketing opportunities provided by diverse ethnic groups and trend-setting consumer demands.

A recent report published by the Small Farm Center on research and education needs concluded that small farmers are thriving in spite of obstacles. "Small farmers have shown an uncommon tenacity for survival, and significant numbers have exhibited creativity in exploiting areas where their size is not an inhibiting factor, and in some cases, even an advantage," the report states. One area in which small farmers have enjoyed tremendous success is in selling directly to consumers at certified farmers' markets, roadside stands, and U-pick operations. Another is on-farm processing of crops into value-added products — marketing apple juice with a farm's own label, for instance.

The upshot of the survey is that the future of California's small farms is not so bleak. On the contrary, many of them seem to be surviving quite well.

“It is important for people to recognize that more than 65,000 farms in California gross less than \$100,000 a year. The strength you have in the public and political debate in our state is much greater than most people realize. You are very much on the cutting edge of agricultural influence in this state.”

Kenneth R. Farrell
UC Vice President
Agriculture and Natural
Resources

(welcoming remarks to the
National Direct Marketing
Conference and Farm Con-
ference '89)

A BRIEF HISTORY OF THE DEVELOPMENT OF THE SMALL FARM PROGRAM

IV

An estimated 60 to 80 percent of California farmers are classified as “small.” Most often that means their operations are characterized by limited acreage and/or limited income (less than \$100,000 gross per year). These farmers may also be limited in other ways — by cultural and language barriers, as was the case with Hispanic growers who were the primary beneficiaries of the Small Farm Program when it began and is more recently the case with many of the Southeast Asian immigrants. Or, small farmers may be hindered by a lack of knowledge, as is the case with many entry level and part-time farmers. Thus the term “limited-resource agriculture” applies to a number of continually evolving and inter-related situations and people.

Until 1975, the University of California had no program to address the special problems and needs of this diversified clientele. But a number of societal trends and concerns converged in the early 1970s to bring the needs of small farmers to the attention of UC faculty and administration, particularly to Clair Christensen, a Rural Development Specialist. First, the total number of U.S. farms began to decline and many observers were concerned that the family farm was on the road to extinction. One of the main reasons for this phenomenon was the fact that more sophisticated production practices, especially in the area of mechanization, enabled farmers to “manage” larger acre-

ages. Easily obtained credit and falling commodity prices exacerbated this trend as one neighbor swallowed up another's farm in a rush to consolidate. Historically, Cooperative Extension had always focused its efforts on the more efficient, and therefore larger, farmers. Simultaneously, public awareness and concern was growing for farm workers and minorities in agriculture.



Institutionally, these concerns manifested themselves at the federal level in 1970 when funds from the “War on Poverty Program” began to trickle down through state agencies to private non-profit groups, but not to “established” institutions, such as Cooperative Extension. In 1972 the Governor’s Office of Economic Opportunity (OEO) funded a number of unsuccessful community-based efforts to train people how to become farmers. Extension tapped into a grant from OEO to pay for five Spanish-speaking bilingual interns in five counties — Yolo, San Benito, Sacramento, Ventura and Riverside. Their

work was not exclusively with agriculture; some were placed with 4-H. Their purpose was to build a rapport with the Hispanic community.

Thus, the precursor of the Small Farm Program established a beachhead, however tenuous, within the University. But the program didn’t really start to take shape until 1973, when funds from the Rural Development Act were channeled by Clair Christensen into a research and education project for small producer cooperatives. One of the first actions was to hire two staff research associates — Alfonso Durazo in Imperial County and Pedro Ilic in Fresno County to help Hispanic cooperatives. (Ilic remains today as the small farm advisor for Fresno County.)

A number of other noteworthy events helped to accelerate the momentum toward establishment of a bona fide University of California program to address the needs of small farmers. In 1973, for instance, the U.S. Department of Agriculture held a number of regional conferences around the country to hear the concerns of small farmers. These farmers were selected by the California Farm Bureau and county Cooperative Extension offices. Several of those who participated in the conference eventually became active in the Small Farm Program and, most

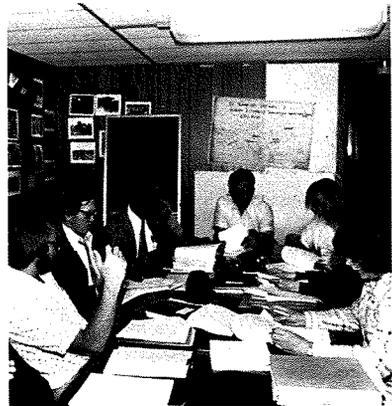
importantly, are still farming.

Between 1974 and 1976 a series of workshops and meetings in Fresno, Imperial and Monterey counties helped to breakdown some of the cultural and language barriers disenfranchising Hispanic growers from the "mainstream." Observers of the Small Farm Program also point to a 1977 study of the family farm as another significant milestone in the development of the program. A committee comprised of representatives of the state Employee Development Department, the non-profit Central Coast Counties Development Corporation and Cooperative Extension recommended in its report "The Family Farm Viability Study" that the state of California adopt a number of interrelated policies to promote the family farm "as indispensable to a sound agriculture and a prosperous rural society." In regards to the role of the University of California, the report stated:

"In operating his farm, the small farmer will find the university to be a more valuable resource. Its research activities will focus on developing innovations to improve the productivity and profitability of his family size operation. He will be able to call upon Extension Service farm advisors to help him establish sound systems and practices on his farm as a whole, as well as to deal with technical problems pertaining to specific crops."

The turning point in the early development of the Small Farm Program was the creation of the Information Access Council, an organization of all groups, agencies and institutions involved with the program. Pedro Ilic chaired the 22-member council, which served as a forum for all those with an interest in small farms. One of the more noteworthy joint activities taken by the council was the coordination of a small farm center at UC Davis, resource centers at Hartnell and Kings River colleges and a project at Yuba College.

While the Small Farm Program had somewhat of an amorphous beginning, it became an official University of California Cooperative Extension program after the Legislature appropriated \$100,000 for "limited-resource farmers" in 1979. The 1988-89 fiscal year funding level of \$275,000 is the result of cost-of-living adjustments, inflation and merit increases. Six farm advisors with specifically designated responsibility to



Clair Christensen leading May '77 workshop.

small farm clientele were hired. Their geographic areas of responsibility are spelled out later in this report. A conference with the council, other farm organizations and farmers in 1980 resulted in the creation of the California Association of Family Farmers, still one of the dominant voices on the small farm scene. Furthermore, this conference resulted in Farm Conference, an annual event held in various locations throughout the state. It now attracts hundreds of attendees each year with an interest in family farming, sustainable agriculture, direct marketing and other topics of interest to small farmers.

In 1980 federal funds were used to establish the Small Farm Center at UC Davis. The Center serves as clearinghouse for a wide variety of publications on topics ranging from specialty crops to direct marketing, participates in and coordinates conferences and other extension activities, and acts as liaison among and statewide program coordinator for advisors, specialists, researchers, farmers and public and private organizations. Greater details of the Center's activities are provided later in this report.

As stated in its long-range program plan, the mission of the UC Small Farm Program is to develop, extend, and bring about through educational means, the use of research-based knowledge for the benefit of small farmers, their consumer clientele and the natural and renewable resources they use.

It seeks to accomplish that goal by integrating knowledge and expertise from numerous disciplines — pest management, soils and water, economics, sociology, engineering, marketing, and crop production; by providing linkages among various programs throughout the Division and clientele groups; and by developing, collecting and disseminating information through the Small Farm Center.

“The California Association of Family Farmers has been unanimous in its support of the UC Small Farm Program and has urged not only its continuation but an increase in both administrative and budgeting support. This backing is based on the firmly held belief that without such a program, the specific problems of the smaller producer would not receive the focus and attention they require.

“The Small Farm Advisors have served an important function to identify constituent needs, reorganize and deliver existing farming information and undertake valuable applied research. The Small Farm Center has been particularly valuable in assisting with state work and regional conferences, as well as being available to track down specific information.”

Tom Haller, executive secretary
California Association of Family
Farmers

UC DAVIS SMALL FARM CENTER

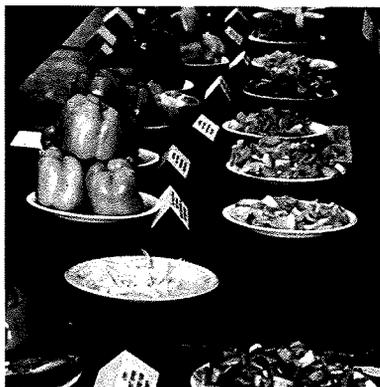


The nucleus of the UC Small Farm Program is the Small Farm Center, headquartered at the Davis campus. Since federal funds established the Center in 1980, its significance as a focal point for activities of interest to limited resource clientele has grown dramatically. For the specialty crop and ethnic growers, direct marketers, organic farmers, and entry-level agriculturists, as well as the UC personnel who serve them, the Center has become an indispensable resource.

One of the Center's most important functions is to serve as liaison among and statewide program coordinator for University advisors, specialists, researchers, farmers, and public and private organizations. Ron Voss, who also maintains responsibilities as a vegetable specialist for Cooperative Extension, provides leadership for the Center and monitors the program's overall progress toward its goals. The day-to-day operation of the Center is the responsibility of Claudia Myers, associate director, Shirley Humphrey and David Visher, program representatives, and Linda Vieira, secretary.

The Center is a vital linkage with other small farm groups, most notably the California Association of Family Farmers, the California Department of Food and Agriculture's Direct Marketing Program, the Southland Farmer's Market Association, the California Direct Marketing Association, California Certified Organic Farmers, the Committee for Sustainable Agriculture and the U.S. Department of Agriculture's Office for Small-Scale Agriculture.

The most conspicuous examples of this liaison function are Farm Conference and the Tasting of Summer Produce, two annual events the Center cosponsors and helps organize. Farm Conference deals with production and marketing techniques for small-scale growers or marketers. It is held in a



Tasting of Summer Produce

different statewide location each year, drawing hundreds of farmers, university researchers, market managers and organizational representatives. Workshops cover a wide range of topics, including farmers' markets, cooperatives, specialty crops, organic farming, on-farm processing, soil fertility, sustainable agriculture, roadside stands, U-pick and direct-to-retail marketing. In addition to the workshops, usually one or two days of farm and market tours are held.

When the Farm Conference started in 1982, it had an attendance of 260. In 1984 it combined with the state Direct Marketing Conference. Attendance has grown from 550 to 750 during the past four years. In 1989 the Farm Conference was held jointly with the National Direct Marketing Conference. This enabled small California growers to meet successful growers and marketers from throughout the country. More than 1,000 people attended.

The Tasting of Summer Produce, heralded as one of the most important food events in the country, brings together farmers, restaurateurs, wholesalers, consumers and retailers in a day-long food tasting event in the San Francisco Bay Area. More than 3,000 people participate in this gourmet food extravaganza. Its statewide and national influence can be seen in the increased

interest in regionally produced organic and specialty foods.

The Center also maintains a library of books, scientific journals, reports, directories, and magazines on crop production, marketing, farm management, soil and water, energy, integrated pest management, agricultural engineering, rural sociology, specialty crops, organic farming, and sustainable agriculture.

Free publications are available on a wide variety of subjects, such as specialty crop production and farm management. A California Small Farm Profile, Sources of Help for Organic Farmers, Growing and Marketing Vegetables on Small Acreages, Tips for Irrigating Vegetables, Should I Sell at the Farmers' Market?, and How to Determine Your Cost of Production — to name a few. In 1989 the Small Farm Center distributed over 2500 Family Farm Series publications each month for much of the year. Almost all were specifically requested by individuals or county Extension staff.

The Center also prints a free bimonthly newsletter "Small Farm News," which reports on University research of interest to small farm clientele. It profiles small farms and advisors, reviews newly published books, identifies resources and publications and includes a calendar of state, national and international events.

Another integral feature of the Center is the help it offers University of California farm advisors in developing local and regional programs for small-scale growers and marketers. The Center's small staff can help county advisors identify grants, organize and coordinate conferences, conduct information searches, edit publications and refer them to other appropriate sources of information.

“Why shouldn’t government have some responsibility to afford credit and provide research, things which can’t be done individually? Should not the government have a responsibility to stabilize family farming? A basic moral responsibility?”

Congressman Kika de la Garza
Chair OFHouse Agriculture
Committee

COUNTY REPORTS ON SMALL FARM RESEARCH & EDUCATION

VI

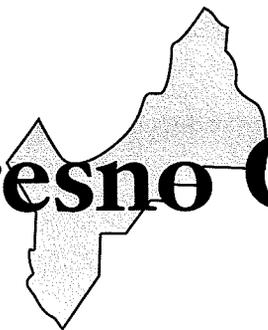
At the close of fiscal year 1988-89, the UC Division of Agriculture and Natural Resources had five advisors assigned to work specifically with small farms. As previously noted in this report, small farmers are far from a homogenous group. They span as diverse a spectrum as exists anywhere in agriculture — from veteran organic farmers to neophyte urban refugees with little more than a vague notion of what life on the land will bring them, from Caucasian fruit growers on the North Coast to Hispanic vegetable farmers in the Coachella Valley, from San Joaquin Valley producers who market through traditional channels to San Francisco Bay Area producers who market directly to gourmet restaurants and farmers’ markets.

They face a mountain of obstacles — from undercapitalization, a problem faced by individuals in all small farm clientele groups, to cultural and language barriers, a problem historically more prevalent among Hispanic growers and currently most pressing among Southeast Asian immigrants.

Their need for information is essentially the same as other “mainstream” growers — they need to know how to raise crops and livestock efficiently, how to maintain quality in the post-harvest phase of their operations, and how to market the fruits of their labor. But the specifics needed by small farmers is fundamentally different. Their commodities tend to be more specialized and grown in closer proximity to one another and therefore have a unique set of pest management problems. Farm

equipment needs are on a scale of magnitude frequently quite different from larger scale producers. Often times commodities produced on small farms require specialized marketing. Baby vegetables headed to a Bay Area gourmet restaurant, for instance, must not only taste good but must be handled with extra care to meet the exacting standards of this increasingly significant marketing outlet. Marketing channels for small growers are more often than not entirely separate from mainstream growers. Rather than ship large quantities of produce to store in wholesale warehouses, many small farmers deal directly with their customers from on-site roadside stands, to restaurants, at farmers' markets and even through mail order businesses.

This section of the report is a synopsis of some of the University's research and extension activities with the small farm clientele. Included are those counties with designated small farm advisors, as well as examples from three counties — Humboldt, Sonoma and Contra Costa — that don't have designated small farm advisors but do a great deal of work with small farmers nonetheless. The information was provided by the advisors themselves and therefore reflects their individual concerns and perceptions.



Fresno County

(Pedro Ilic, 1976 - present)

Of all the counties with a designated small farm advisor, Fresno County has probably undergone the greatest clientele change. When the program was established in 1976, one of its primary objectives was to break down the cultural barriers that inhibited the largely Hispanic small farm growers from tapping into the resources of Cooperative Extension. The need was obviously there.

“The number of small farmers was large in 1976, and has continued to increase,” notes Pedro Ilic, the first and only small farm advisor in Fresno County. “Ever since its inception, workshops, field days and other extension activities have always been well attended by small farmers of all ethnic backgrounds.” Ilic’s primary clientele has been, and continues to be, small vegetable growers.

In the beginning, those served were almost exclusively Hispanic, with a small percentage of the clientele described as Anglo American and organic growers. As of 1988, however, the percentage of Hispanic growers has decreased to about 25 percent and the largest group served now is Southeast Asians — Cambodians, Thai, Laotians, Hmong — who fled political unrest in their native lands and resettled in the Central Valley to pursue their agricultural way of life. They now comprise 40 percent of the small farm clientele. The Southeast Asians, as the Hispanics before them, must overcome their own and our U.S. cultural barriers. Ilic must use a translator to communicate with the Southeast Asians. Of the remaining clientele, roughly 25 percent are Anglo, 2 1/2 percent are black and the remainder Ilic described as “other.” About 1 percent of his clientele are organic farmers.

While the ethnically diverse Fresno County clientele presents its own cultural challenges, their production and marketing needs also differ greatly from “mainstream” growers.

Most of the Fresno County small farmers produce specialty crops; cherry tomatoes, strawberries, cucurbits, Chinese beans and sugar peas, to name a few. Their specialized production needs include learning proper trellis spacing, fertilizer management, crop selection, strip fumigation, biological control of tomato pinworm, and proper pesticide application techniques. Some production techniques provide essential marketing benefits, as well. Plastic tunnels, for instance, are used to increase yields and promote greater earliness. Ten years ago, Ilic noted, growers used hot caps to accomplish the same objectives at a cost of \$1,000 per acre. The tunnels now in widespread use, cost about \$500 per acre, a significant savings to any grower but particularly to those operating on such thin margins. "My goal is to keep farmers operating at a profit," Ilic says. "You must find ways to keep costs down."

In addition to workshops and field days, Ilic's other noteworthy extension efforts include a bilingual newsletter, "Noticero Agricola," popular with "conventional" growers, as well as small farm clientele. An increasingly popular



program is the annual Vegetable Training Conference, which in 1987 included topics such as drip irrigation scheduling, maintenance and fertilization; tunnels and mulches for zucchini squash; weed control with and without herbicides; low level application of fumigants and nematicides through drip lines (chemigation); and marketing strategies for the medium to small vegetable grower. Ilic says the conference attracts people statewide.

Research goals change, Ilic notes, and there are more problem areas than resources available — an obstacle not unique to small farm research but particularly acute because of the few people engaged in small farm research. The aforementioned plastic tunnels are a good example of how applied research developed into a widely used, money-saving technology. Another success is in the area of fumigation. Ilic is teaching small growers how to save significantly by adapting strip fumigation

technology. It requires specialized equipment and, therefore, special training, but will result in significant savings over the \$1,200 per acre it costs for conventional techniques.

Ilic also collaborated with Manuel Jiminez, Tulare County small farm advisor, in a research project to control pinworms, a pest to cherry tomatoes, with a pheromone. Historically, cherry tomato growers had to abandon their crop by late August or early September because the pinworm population was out of control. Growers sometimes exacerbated the pinworm problem, and the leafminer population as well, by treating with the wrong substances (sevin or *Bacillus thurengensis*, for instance).

Just as the Fresno County small farm clientele has evolved over the first 10 years of the program, so have growers' needs. Ilic anticipates the trend will continue. "New farmers are coming in all the time," he says, "The rate of turnover among the Southeast Asian growers is about 10 to 20 percent. There will always be a demand for startup information."

OTHER TRENDS:

- There is a direct relationship between the number of small farmers and the number of exotic crops produced.

- Interest in farming organically has "increased significantly, but information is not readily available and much of it has not been validated through applied research."

- An increase in the number of part-time "hobby" farmers who depend on farmer's markets to sell specialty crops and need labor-saving technology. "They are among the greatest users of the program and are continuously requesting new information."

- Rapidly changing markets, indicative of demographic shifts, will present opportunities to astute growers but will need research-based knowledge in order to capitalize on them.

- "All these facts make it important to continue with these programs at the local level, as well as the state level," Ilic concludes. "The Small Farm Program has served thousands of farmers in the 10 years since its inception, and all indications are that its clientele will increase further."

- High priority areas include production technology, variety research, post-harvest handling and physiology and marketing, noting premiums paid for extra fresh fruits and vegetables. "As we get more internationalized, we have to try very hard to be competitive. Labor is more expensive, so small growers must learn how to rely more on technology to lower production cost per unit."



Tulare County

(Manuel Jimenez, 1979 — present)

In contrast to neighboring Fresno County, the small farm clientele of Tulare County started out as a mix of Filipino, Japanese and Hispanic growers. Small Farm Advisor Manuel Jimenez, who began with the program in 1976, notes that most of those who started with the program are no longer farming because of the volatile vegetable market. "It's not a very stable industry," he says.

But others have moved in to fill the void. Jimenez estimates that as of 1988 there were more than 3,000 people farming 40 acres or less in Tulare County. The great majority of them are vegetable farmers, with about 10 percent tree crop growers. An unspecified but increasing number of Tulare County clientele are "hobby farmers." Jimenez says that whether they farm as a hobby or not is really insignificant because production problems are not related to scale. "A 40 acre grower has many of the same problem as one with five acres," he says.

Rather than a specialized extension effort just for small farmers, however, Jimenez says the entire staff of the Tulare County Cooperative Extension office attempts to bring his or her expertise to the scale-specific problems of the clientele. Consequently, Jimenez' work is skewed more toward applied research, which is often hindered by a funding dilemma.

"Many of the crops grown by (small farm) clientele are small acreage minor crops," Jimenez says. "Private industry traditionally does not finance research on minor crops and the University of California Cooperative Extension has few funds it can allocate."

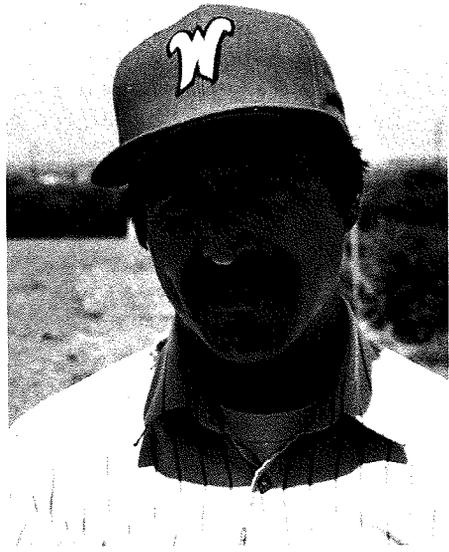
Jimenez' research focuses on cherry tomatoes and squash, because they are the predominant crops raised by small vegetable growers in Tulare County, and Integrated Pest Management for fresh market tomatoes. Following is a summary of some of that research:

Minor vegetable crop nutrition trials — For many of the minor vegetable crops, there are no established nutrition levels. In a cooperative effort with several other farm advisors, Jimenez conducted nutrition experiments and established data for cucumbers, Chinese cabbage, cherry tomato, eggplant and zucchini squash.

Cherry tomatoes — Research is under way to develop new commercially acceptable varieties with resistance to nematodes, tobacco mosaic, verticillium and fusarium wilt. In collaboration with Fresno County Farm Advisor Pedro Ilic, Jimenez conducted a three-year study of the effects of plastic mulch on yields and earliness.

Of particular note is Jimenez' work in pinworm control. Historically cherry tomato growers had made up to 12 insecticide applications to control this pest of cherry tomatoes. Not only is it expensive, but small growers expose themselves to extremely hazardous materials, especially those growers who apply insecticides with either a small garden or backpack sprayer. A private company developed a plastic wick that releases pinworm pheromone over a two to three month period, and Jimenez said preliminary study results were promising. "If this confusion principle proves effective, it would be of great value to many other crop situations," Jimenez said. "Pesticide safety, biological control and reduced pesticide use are all important objectives. If successful, it would be a great step to protect the crop, the small farmer and the environment."

Other commodities Jimenez' research has focused on includes onions, squash, sugar peas, and sweet corn. A good example of how small farm research can serve as a focal point for other Division programs is work in the Cutler-Orosi fresh market tomato district, a commodity of somewhat limited acreage but valued at approximately \$20 million. Jimenez, UC Riverside IPM specialist Nick Toscano, UC Riverside researcher Ken Kido and Tulare County entomologist Don Flaherty set out to find an effective biological control for a number of larval pests — tomato fruitworm, beet armyworm and tomato pin-



worm. Their research determined that a simple cultural adjustment, early planted tomatoes, greatly reduces larval pest problems.

Jimenez has also focused on marketing activities, including leading small-scale producers on tours of Los Angeles and San Francisco markets. He notes that growers subsequently increased use of those markets. One creative solution to a marketing dilemma that directly affected research is especially worth noting. In Jimenez' own words:

“In June of 1983 I was preparing to harvest a cherry tomato plot when I was informed by Lindcove Field Station that there was no allocation of station hours to harvest the experiment. I had two choices, either abandon the project or secure free labor. I mentioned my dilemma to Sergio Garcia, 4-H advisor, and he came up with the idea of getting a local 4-H club to harvest the plot. The local club was already involved in their own projects, so we decided to organize a new one. We approached migrant education officials, then presented our idea to a meeting of migrant parents. The idea was well accepted and some parents got involved. Together we organized a club of 15 members ranging in age from 11 to 16 years old.

“We gave them organizational instruction and formed an official club with the name Sierra 4-H Club. Later we made an agreement with them. They would help me harvest my cherry tomato plot and in return they could sell the tomatoes. I assisted with initial market contacts and arrangements. They followed by marketing directly to local retail outlets in the county. As a result, each member earned from \$110 to \$250. Later the kids wanted to continue with another venture and we assisted them in getting land and made arrangements to get free water from the city of Woodlake. The club planted about one acre of squash and sold most of it through a broker.

“This project resulted in a lot more work than I anticipated, but seeing the kids learn was well worth the effort.”



San Luis Obispo Santa Barbara & Ventura Counties

(Louie Valenzuela, 1981 to present)

This small farm program is regional in nature, encompassing Santa Barbara, San Luis Obispo and Ventura counties. Small Farm Advisor Louie Valenzuela says his limited-scale agriculture program has focused on four general areas: identification of small-scale producers; specialty vegetable crop research and development; farm management, marketing research and education; and servicing underrepresented ethnic groups, such as Filipinos and Hispanics.

In regards to the first objective — identifying small-scale farmers — Valenzuela developed a mailing list that identifies commodities produced by individual producers. This list facilitated a dialogue between small-scale producers and the essential resource people they needed to make their operations economically viable — pest control advisors, marketing agents, bankers and consultants.

Valenzuela organized educational farm management programs for entry-level strawberry producers and production cooperatives. It emphasized helping these new producers find financial assistance, including loan guarantees, and develop long-term strategies. Initial educational work, however, involved recordkeeping and financial statements — income statements, balance sheets, and cash flow. As a result, some producers learned how to keep adequate financial records and produce financial statements.

Marketing is another key issue in the Central Coast region. Price trend analyses for squash, cherry tomatoes, sugar peas and strawberries showed growers where the “marketing window” opportunities lie. In the foothills of Nipomo, for instance, squash is grown for the fall market, a time when most



*Babysquash with blossoms
for the Specialty Market*

of the state is out of production. Summer squash production jumped from roughly 350 acres before the analyses to 642 acres in 1988. Other noteworthy marketing activities have included a strawberry marketing outlook and analysis, published in 1984 and updated in 1986, which confirmed acreage increases from increased small-scale farm acreage plantings. Direct marketing efforts included publication of a directory of Santa Barbara County producers and a post-harvest marketing methods demonstration at the Santa Barbara Farmers' Market.

Because many of this region's specialty vegetable crop and strawberry producers are Hispanic, Valenzuela also introduced a bilingual newsletter and Spanish radio program announcements. Bilingual seminars helped to disseminate Cooperative Extension information to this client group.

Another important activity was educating the small farm clientele of this area in safe pesticide use. Coordination of farm safety programs in Santa Barbara and San Luis Obispo County offices resulted in bilingual workshops in the Santa Maria Valley and Paso Robles area.

Valenzuela says the "most notable" accomplishment in this region was in sugar pea culture research and extension. "The central coast is the major producing area for this crop," he said. "Approximately 4,500 acres are cultivated year-round. The production of sugar peas is hampered with disease and insect problems. Disease identification has resulted in cultural control practices, such as improved irrigation timing, improved land preparation and crop rotations. In addition, using the IR-4 program, specialty crop pesticide registration work has been used to obtain special insecticide registration. Sugar peas do not have a wide range of legally registered pesticides. This program has pursued the registration of acephate (Orthene) for thrips control and more recently, Ridomil MZ58 for downy mildew control. Fertilizer yield response experiment work in sugar peas has resulted in the adoption of preplant fertilization and demonstrated optimum yield responses with low nitrogen levels. In addition, planned nutrition work in sugar peas will involve evaluating rhizobium inoculum for nitrogen supplementation.

Small farm advisors refrain from relying on attendance records as a measure of the program's impact. But there are other signs — increased acreage, new cultural practices, or maybe something more symbolic. Valenzuela noted two small-scale strawberry producers from his region are now on the statewide Strawberry Advisory Board. Ten years ago the area had no representatives.



Future local priorities for the central coast include conducting a survey of strawberry growers to determine what their “real” needs are and improved communication — especially print, radio and videotapes, and attending to increased interest in sustainable agriculture issues.



Monterey County

(Steve Mendivil, 1980—1985)

After the first two successful years of the small farm program in Fresno and Imperial counties, the program expanded into four other areas, including this central coast county. One of the first problems identified by then-newly appointed farm advisor Steve Mendivil was to identify the clientele to ensure their needs were adequately serviced by research and extension activities. The other main focus of the program was to reach Spanish-speaking farmers.

While connecting Hispanic growers to University resources was a primary objective in Monterey County, as well as the other counties with designated small farm advisors, other potential clientele groups also became apparent in the initial phases of the program. “These groups included organic farmers, direct marketing groups, financial management organizations, small farm organizations and others,” Mendivil said. “Working with an expanded clientele group, I became convinced of the need to broaden the scope of the program. We needed to reach more farmers, increase program visibility and encourage more participation among other extensionists.”

To accomplish this objective, Mendivil in December 1984 took a half-time, six-month position at the Small Farm Center located at UC Davis. The staff resumed publication of the Small Farm Center newsletter and several pending printing projects. He also contacted county directors and advisors for their participation. The result was a statewide program shift to include the previously excluded groups in conferences, meetings and other extension activities. In May 1985 Mendivil left the Center to become the Cooperative Extension Director in Santa Clara County.

Research and extension activities covered a broad range of subjects, reflecting the diversified nature of the small farm clientele in this region. Examples of extension activities include:

Field demonstrations for cooperatives — This was a series of 10 meetings during 1980 and 1981 about crop cultural techniques delivered in Spanish to growers who banded together to cut production costs.

A farm management and marketing meeting held for small farmers in April 1981.

A pasture management meeting held in January 1981 to extend current information on seeding, land preparation, weed control and varieties.

A demonstration of livestock handling equipment in April 1981.

A summer squash demonstration plot in 1981 and 1982 to show improved methods of growing summer squash for small farmers, with a particular emphasis on irrigation and pest control methods.

Strawberry meetings and field days held in the period between 1982 through 1985 were intended to extend current information on strawberry technology and cultural practices.

Several banks participated in a small farm finance meeting held in October 1983. Its purpose was to address one of the major concerns of small farmers — how and where to find financing.

A rural development symposium in March 1984, held in conjunction with several local agencies, identified issues related to development of rural land and small farm operations.

Mendivil notes the Monterey County clientele was “much more responsive” to extension activities than to research.

Nonetheless, he conducted research to help the small-scale growers of the area cope with their specific production problems, including:

A chili pepper variety trial in 1981, held on the land of a local production cooperative, was designed to determine superior varieties for cool weather pepper growers.

A summer squash variety trial held during 1981 and 1982 was conducted to find superior producing varieties for coastal growers.



A weed control trial held in 1981 was designed to determine the most effective means of controlling severe annual weeds in sugar peas.

A trial to determine the most effective way to control *Zythia* leaf spot fungus in strawberries was held from 1981 through 1983.

A trial to test a nematicide in cucumbers was held in 1982.

A chemigation trial to study the application of fertilizers and pest control compounds through a drip irrigation system to sugar peas was held in 1983.

Additionally, Mendivil carried on a winegrape research program during 1983 and 1984. Perhaps one of the more noteworthy projects initiated while Mendivil was still the Monterey County small farm advisor was one that addressed the need of small farmers to obtain adequate financing.

In 1981, a rural small business development corporation called Cal Coastal RDC was formed to develop loan guarantee packages for small farm operations and their agricultural lenders. At the time of this writing, Mendivil said the organization was poised to provide direct farms loans, eliminating the need for a participating bank. As such it would be the only development corporation in the country permitted to make direct loans, a major step for farmers' to secure financing.

The position remained vacant after Mendivil's departure in 1985 until March 1989, when Richard Smith was hired. Headquartered in San Benito, Smith's area of responsibility was redefined to include small farm clientele in Monterey, San Benito, Santa Cruz and Santa Clara counties.

San Diego County

(Faustino Munoz, 1980—present)

Of the six areas with designated small farm advisors, San Diego County probably has the most diversified limited resource farmer clientele. Faustino Munoz, who started the San Diego program in 1980, breaks the clientele down into a number of groups that rely substantially on their modest income for their livelihood. They include Hispanic and Asian background small farmers who are limited in their technical agricultural knowledge, educational level, English-speaking ability or access to land and capital.

Specialty crop farmers grow certain annual crops of limited production and distribution such as gourmet, miniature, baby vegetables, Asian specialty crops and organic produce. Munoz says the limited-resource farmers traditionally had been leasing land along the coast to grow conventional vegetable crops — pole tomatoes, bell peppers, cucumbers and squash. Due to a drastic price reduction for these commodities, however, many of these farmers have switched to growing “gourmet” or miniature “baby” vegetables — baby squash, zucchini flowers, French beans, yellow wax beans, baby corn, as well as bell peppers and tomatoes of assorted colors.

Although limited-resource farmers certainly have the ability to produce these high-demand specialty crops, there is some question about their ability to adjust to urban expansion and other economic pressures peculiar to the area — high water prices, high labor and input costs and unstable markets. Munoz noted that these factors have combined to increase competition for coastal land and has reduced the number of large-parcel commercial agricultural operations



growing traditional commodities through conventional markets. In effect, these changes have created a greater number of small-scale, high-value cash crop agricultural operations with more crop diversity and greater emphasis on local and/or direct marketing channels.

These same economic factors affect other segments of the San Diego County small farm clientele. In response to growing public concern for the environment, cost of synthetic chemicals, consumer preference and the potential for economic profits, many new-entry and conventional farmers have directed their farming operations to the growing and marketing of organic produce.

Organic farmers are individuals who practice established "organic" farming techniques pursuant to state law. "It is important to note," says Munoz, "that unlike conventional cropping methods, where a farmer grows two to three crops a year in a given area, organic cropping cycles may require several annual crops in the same area."

A third segment of the small farm clientele consists of those new entry farmers brought in, somewhat ironically, by urban expansion of the South Coast region. Munoz characterizes them as being of diverse economic levels, ethnic backgrounds, farming objectives and experience. They include:

- New residents who have purchased one to five acres and want to grow something to help cover land costs. They may be professional people or retirees who view farming as a part-time hobby; they may grow rare fruits or fuel crops and are "particularly concerned" about the tax implications of their endeavors.
- Land investors who want to begin to develop their property through an agricultural venture until they can subdivide.
- Southeast Asian immigrants who have brought with them an interest in raising food crops in home and community gardens. They are particularly interested in growing Oriental specialty crops. A 12-family cooperative organized especially for this reason.

Program accomplishments include:

- A mailing list networking more than 1,200 small farmers, agricultural-related suppliers, agencies and associations.
- Incorporation of Integrated Pest Management techniques into the operations of limited resource farmers, especially those lacking English language skills, resulted in a safer, more profitable and more effective method of pest control.

Prior to its introduction, small-scale farmers were “routinely” treating crops on a weekly basis, rather than when the situation demanded.

• The Southeast Asian Project — A cooperative effort between county social service agencies and Cooperative Extension to address the needs of recent emigres from Southeast Asia. The project resulted in the development of an agricultural curriculum that included essential information every farmer would need to be successful in small-scale farming. It was translated into the four languages — Vietnamese, Cambodian, Laotian and Hmong — and made available to other counties. “As a direct result of this project,” Munoz says, “an agricultural cooperative and two community gardens formed.” In addition, the 4-H and EFNEP programs have developed educational programs with these groups.

• Contributing to the development of a local chapter of the California Certified Organic Farmers (CCOF). It resulted in an increase in the number of certified organic farmers from two to more than 25 in the last three years, although Munoz believes there may be as many as 70 organic farms in the county. According to Munoz, involvement with this group has been in “making an effort to understand their needs, cooperating with them in educational and research programs and informing conventional farmers, as well as the general public of organic farming methods and certification procedures.”

• Another effort that has aided the organic segment of Munoz’ clientele was the local organic produce market survey to identify local organic farmers, as well as related market and information channels.

• The 1986 Sustainable/Organic Agricultural Conference organized by the San Diego Small Farms program was the first UC Cooperative Extension educational event of its type conducted in California. It drew more than 120 farmers, ranchers and others interested in developing alternative low-input farming.



• Introduccion A La Agricultura Organica, a course taught in Spanish addressing the marketing potential for organic produce. Sparsely attended initially,

it holds promise as more Hispanic farmers become interested in organic produce.

- **Certified Farmers' Markets** — Five farmers' markets have been established in the county, and Munoz says there is the potential for more of these markets to link with large urban populations in Southern California. "We plan to continue our involvement by facilitating the formation of a coordinating committee to oversee the activities of the farmers' markets already established."

- **"Starting a Small Farm in San Diego County"** — In the fall of 1988, Munoz coordinated a seminar to provide basic information on the production, marketing and management of small-scale vegetable, fruit, livestock, small animal and fish operations. The course is designed to meet the needs of individuals starting a small farm operation in San Diego County.

- **Publications completed** include "The Use of Legumes in vegetable, orchard and cereal cropping systems," "Converting to sustainable farming systems in California" and "San Diego small farms newsletter." Publications in progress include "Starting a small farm in San Diego County," and a Spanish translation of the legume publication listed above.

- **Use of legumes in California cropping systems** — As part of a comprehensive sustainable agriculture conversion research demonstration and education project, Munoz and fellow farm advisor Walter Graves have been evaluating the use of different cover crops, green manures and living mulches to improve soil and weed management, improve fertility and reduce dependence on conventional fertilizers. They note that these benefits, as well as energy and cost savings, will help small farmers adapt low-input technology.

Recent initiatives by Munoz include the Low-input/Sustainable Agriculture seminar series, with Extension programs in weed management, food safety and soil fertility. "These seminars have received excellent reviews and have averaged more than 50 participants," Munoz said.

Munoz also began an applied research and demonstration project in the Carlsbad coastal area. The three-year project will document conversion from conventional to sustainable/organic vegetable production. The crops in the study, depending upon market demand and fertility requirements, are French bush snap beans in the spring, baby zucchini in the summer, and Lana vetch as legume green manure in the fall.

Riverside & Imperial Counties



(Alfonso “Butch” Durazo, 1976-1986)

The Small Farm Program got under way in Imperial and Riverside counties in the summer of 1975. It was designed to reach several hundred small farmers in the Coachella and Imperial valleys, many of whom were former farmworkers who spoke no English. As a result of this language barrier, many were effectively barred from tapping into the services of Cooperative Extension, other government agencies and private agricultural businesses.

Of the 200 small farmers in the Coachella Valley, approximately 40 are white, 150 are Hispanic, 15 are Asian; there is one woman farmer. In the Imperial Valley, there are approximately 80 white farmers, 10 Hispanics and five Asians; two from this group are women farmers. The focus of the program initially was to establish a working relationship with Hispanic growers. Most of these growers have been identified, and are now aware of the resources of Cooperative Extension. The program is now geared toward all small farmers, regardless of ethnic origin, with a strong emphasis on specialty crop producers.

The basic raw materials of land and water are relatively inexpensive, compared with other agricultural regions of the state. Coupled with a climate enabling early season production of vegetables with a high market value, the Imperial and Coachella valleys see a continually changing group of farmers. As former small farm advisor Alfonso Durazo put it:

“The clientele is dynamic and varies from year to year, but all have the same scale-specific problems associated with the particular type of vegetables they produce, or the type of technology they utilize in the production of these crops.”

Crops produced by these growers in the Coachella Valley include approximately 250 acres of green beans, 225 acres of eggplant, 100 acres of okra, 100 acres of parsley, 500 acres of bell peppers, 150 acres of chili peppers, 500 acres of radishes, 70

acres of spinach, 400 acres of squash, 60 acres of tomatoes, 160 acres of turnips, 100 acres of pickling cucumbers and various herbs and oriental vegetables.

In the Imperial Valley, Agricultural Commissioner reports don't list most of these crops separately, except for squash, which is produced on roughly 1,000 acres. Other crops



produced under the heading of mixed vegetables include eggplant, okra, cucumber, peppers and oriental vegetables.

Durazo says acreages have remained fairly constant over the past 10 years, with the exception of fall squash, which has dropped in acreage due to virus problems over the past five years. However, there may be significant changes in the way these crops are produced, with an in-

creased use of drip irrigation and plastic covers and trenches. Whereas five years ago there were no growers using this type of technology, there are now more than a dozen, raising crops on more than 1,500 acres.

In the mid-1970s, one of the main problems facing growers in this region was watermelon mosaic virus of spring-planted cucurbits, primarily zucchini squash. There was no chemical means of controlling these viruses. Durazo began an intensive variety study to find a zucchini cultivar with tolerance to the virus. From field studies conducted between 1977 and 1983 — at both the Imperial Valley Agricultural Center and in the fields of cooperating growers — two varieties were found with greater tolerance to the virus, enabling producers to grow squash that was 65 percent marketable, compared to the traditional variety that had been only 22 percent marketable.

In 1976 a new problem developed for squash producers — Squash Leaf Curl virus, which is spread by the sweetpotato whitefly, *Bemisia tabaci*. Again in the fall of 1981, another virus problem developed — lettuce infectious yellows. This virus is also spread by the sweetpotato whitefly. Both these viruses devastated fall plantings.

Several variety trials were conducted, but no tolerance was found. Again, chemical control of the whitefly proved to be unsuccessful, so studies of alternative methods were begun at IVAC in the fall of 1984. Reemay (registered trademark) — a spun, bonded polyester floating row crop cover — successfully provided enough insect protection to control the viruses and, therefore, produce good yields of marketable squash. This is still the only method of growing fall squash without the devastation caused by the viruses.

In the early years of the program, the only small farm advisor south of the Tehachapis was the advisor for Imperial and Riverside counties. This office established an outreach program in San Diego County to deal with one of the major problems of growers in the coastal area — financing.

Small farmers in the region were having trouble getting loans from the FmHA office. The loan committee was comprised of one citrus and two avocado growers, who would pick their own replacements when their terms expired. Thus, no small farmers or vegetable producers were represented. After lengthy negotiations with the district supervisor, the policy was changed and outgoing committee members were replaced with a Mexican-American small vegetable grower from northern San Diego County. The following year an Oriental small vegetable grower was selected. And the year after that, a drip irrigation supplier who served most of the small farm clientele, joined the committee. As a result of the change in composition of the committee, several loans were made to small vegetable producers in San Diego. More importantly, however, the outreach program identified a large small farm clientele, which eventually led to the addition of a small farm program for San Diego County.

While Durazo's position has never been refilled, the Imperial County Cooperative Extension office undertook a team effort under the leadership



of weed science advisor Carl Bell to address the needs of small farmers. The County's "limited scale agriculture program" began in fall 1988; all farm advisors have agreed to contribute some of their time and expertise.

"The objectives of our program," says Bell, "are to reach the small-scale and minority farmers not currently served by our office; to provide economic and production assistance; and to provide education and information on farm safety (including pesticides) to these farmers."

The Imperial County office began its multidisciplinary program by first publishing a Spanish-English newsletter, using a mailing list acquired from the Agricultural Commissioner's office. This approach enabled them to identify all farms with pesticide use permits, and helped determine crops and acreage as well. The first issue was mailed out in April 1989.

"Beyond the newsletter," Bell adds, "we are are planning special educational activities and field calls. Several alternative methods of crop production are being investigated at the Imperial Valley Agricultural Center."

CONTRA COSTA, HUMBOLDT & SONOMA COUNTIES

As previously noted, in its mission to bring research-based knowledge to small-scale farmers, the University must rely on all agricultural and natural resource advisors and specialists to apply their expertise to small farm clientele. The three counties included in this section are good examples of just such work. Space limitations prohibit elaboration of equally effective programs in other counties.

Contra Costa County



(Liese Greensfelder, 1984-1988)

Contra Costa County lies in the shadow of a major metropolitan area, placing it squarely in the path of urban development. Its proximity to the San Francisco Bay Area, however, also situates producers next to a market of enormous potential. The Agricultural Census in 1982 identified 425 farms here. Of these, 150 or roughly 35 percent had a total farm income of less than \$2,500; 265 farms had income less than \$10,000, 85 percent of which produced fruits and nuts.

Over the past 20 years the number of growers has declined, primarily due to urbanization, explains former county Advisor Liese Greensfelder. Many growers in the eastern portion of the county, where agriculture is now centered, are second, third, even fourth generation growers. Many are Italian-American or Portuguese-American. Less than 8 percent are Hispanic and about 4 percent are Japanese American.

Most farms are diversified, but fruit tree growers tend to stick to trees, and vegetable growers tend to stay with vegetables. It is not uncommon for a fruit tree grower to have at least four different crops (e.g. walnuts, cherries, peaches and apricots). Vegetable growers have even more diversity, commonly raising sweet corn, squashes, melons, peppers and tomatoes.

Another increasingly significant component of the clientele in Contra Costa County is the "urban refugee." These people, trying to raise crops on two to 20 acres, generally have little agricultural experience or knowledge.



One of the major problems facing these small growers has no easy solution. As Greensfelder explains, "Because Contra Costa County is on the fringe of the Bay Area, land prices continually increase. Many growers are tempted to sell out to development. The agricultural morale is low here because of the encroaching development and the decline in agricultural services from businesses and the decline in county support of agriculture."

She also reports major production problems for tree crops. Walnut production has been decimated by a disease called blackline, which eventually kills the tree. Almond production has "virtually disappeared" due to several diseases and high production

costs relative to the new area of almond production in the Central Valley. Apricot production has declined considerably because of generally poor prices for canning apricots.

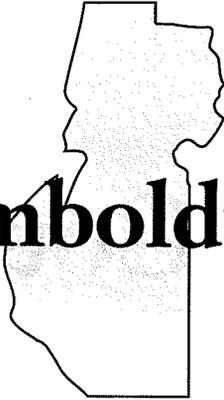
All growers are interested in diversifying their marketing options. Because of low agricultural prices, growers are looking for ways to direct market their products.

Since the majority of farms in the county are classified as small, virtually all Greensfelder's research and extension was geared to small growers. Highlights of that work include:

- Marketing — advising Harvest Time, a farm trails organization, including a customer survey at roadside stands; a grocery store survey to determine direct grower to market potential; served on the board of directors for the "Tasting of Summer Produce"; petitioning the Bureau of Alcohol, Tobacco and Firearms to designate the Oakley area for a viticultural appellation.

- Production — Dense planting of peach trees to obtain high early yields; tomato variety trial to test roadside stand and U-pick suitability; surveyed the incidence of county buckskin disease; publication of a guide for planting hedgerow walnuts.

Liese Greensfelder left Cooperative Extension in 1987. The position was filled by Janet Caprile in June, 1989.



Humboldt County

(Deborah Giraud 1984 — present).

Deborah Giraud, the plant science farm advisor for Humboldt County, works with many family farms of less than 20 acres. Most producers are mixed vegetable farmers who sell at farmer's markets, or directly to restaurants and locally owned supermarkets. Some open roadside stands during the summer months. Some market out of the area, driving to the Bay Area to sell large quantities of produce, garlic, for instance.

Giraud has organized educational sessions on marketing and farm management for the fall meetings of the North Coast Growers Association. She also sends out special packages of educational materials (e.g. row covers). She reaches most producers with a bimonthly newsletter called Plant Science Press.

There are a few fruit growers in the region — mostly apple, peaches and berry producers. Giraud conducts winter pruning workshops each year for these growers. Ornamental operations include bedding plants, herbs and cut flowers.

Research activities include work on carrot rust fly control (funded by a grant from UC's Sustainable Agriculture Research and Education Program). It tested row covers, nematodes and a trap crop to control carrot rust fly. Giraud also participates in the statewide potato variety trials.

About 400 acres of potatoes are grown for the commercial chip market by five families. Educational demonstrations have also been conducted for control of apple maggot and codling moth, as well as corn earworm.

Many Southeast Asian families have moved here recently. To help them become successful agriculturists in their adoptive country, a small farms/garden outreach program teaches them about local growing conditions.



Sonoma County

(Paul Vossen 1980 — present)

According to the 1982 Census of Agriculture, there are more than 3,000 farms in Sonoma County. About 2,500 of those are less than 100 acres, 1,000 are less than 10 acres and 2,000 had sales of less than \$10,000 a year.

Most of the large farms are livestock/range operations. There are more than 500 apple farmers, 350 with less than six acres. Sonoma County also has about 150 vegetable farmers, two-thirds of whom have one acre or less. The average-sized vegetable farm is 10 acres.

Many small-scale farmers produce specialty crops, such as blueberries, raspberries, currants, exotic cut flowers, edible flowers, gourmet vegetables, exotic mushrooms, pepinos, cape gooseberries, loquats, citrus and organic produce. Several producers have small processing operations to make gourmet items, such as pickles, jam, jelly, ice cream, and dried fruit and vegetable packs.

The small-farm clientele of Sonoma County includes older, more established farmers, who tend to be better growers, and newcomers and hobbyists, who tend to be better marketers.

Farm Advisor Paul Vossen has five main objectives in his small farm program:

1 - Preserve the agricultural lifestyle of the county by developing viable, small-scale economic operations. This also helps reduce urbanization.

2 - Improve the image of Sonoma County agricultural products through the development of an umbrella marketing organization and marketing plan. Major assistance would be for small-scale operators unable to effectively promote their products.

3 - Expand the crop options for small-scale producers

through the evaluation of specialty crops in research and demonstration orchards and gardens.

4 - Help develop “organic” and sustainable methods of production to exploit the market and conserve the environment.

5 - Provide technical expertise in cultural practices for fruit and vegetable producers appropriately adapted to small-scale farming.



Vossen’s activities to accomplish those objectives include work with a county-wide Marketing Task Force; development of small-scale research and demonstration orchards; work with vegetable growers on marketing and improved production practices; providing a computer model for timing of codling moth sprays; organic apple trials; cover crop trials in apples for energy conservation and erosion control; developed data on irrigation of apple orchards; taught seminars and classes for small-scale producers; meets one-on-one with clientele on a regular basis; and conducted a survey of consumers, producers and marketers about Sonoma County locally grown products.

Vossen outlines the impact of those activities and the accomplishments, though they sometimes may be difficult to quantify, as follows:

The Agricultural Task Force on Marketing is working with Cooperative Extension to develop a county-wide marketing organization and marketing plan for all Sonoma County products. Several commodities have joined together in joint marketing efforts for complementary products.

“The survey (of commodities) will have significant impact on the development of a marketing plan for Sonoma County,”

Vossen says. "For the first time I have gotten all of the county agricultural interest groups together for one main goal — to improve the marketing of our products."

More than 3,000 people have visited Vossen's research and demonstration orchards. Many conventional producers have gained valuable crop selection and cultural technique information that is now a part of their own farms. "I have producers now planting many of the crops demonstrated."

Most of the vegetable producers are using plastic mulches and some have experimented on their own with increasingly popular floating row covers.

Many small-scale vegetable producers are doing very well with specialty crops that Vossen helped them get started with and helped find a market for.

More than 75 percent of the apple growers are now using some sort of timing information for codling moth control based on a UC computer model.

Several conventional apple growers have made the transition to organic production. "We have gone from essentially zero to more than 500 acres of organic apple production the last four years," Vossen says. "That also represents some very traditional growers."

Irrigation work has caused several apple producers to develop their water resources more effectively (e.g. ponds, new wells, drip irrigation). Vossen also notes that the Santa Rosa Wastewater district is using his irrigation data to promote wastewater re-use in orchard areas. Reclaimed and treated wastewater could be used to develop several thousand acres of specialty crops in the Sebastapol area.

Major extension activities Vossen has organized or been involved with include Farm Conference '88 (more than 700 people attended), Farm Alive Seminar '87 (80 people), Small Scale Farming Short Course (400 people); and Santa Rosa Junior College (30 people).

Publications include "Fruits, nuts, berries and grapes of Sonoma County — Variety and rootstock guidebook." More than 2,000 copies sold. Also "Irrigation Management for Small Scale Producers."

Farm Advisors Who Work With Small Farms

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Delbert Farnham	Amador	Amador County Coop. Ext. 108 Court St. Jackson, CA 95642	209-223-6482
Bob Willoughby	Butte	Butte Co. Coop. Ext. 2279 Del Oro Ave., Suite B Oroville, CA 95965	916-538-7201
Ken Churches	Calaveras	Calaveras Co. Coop. Ext. P.O. Box 837 San Andreas, CA 95249	209-754-6477
Mike Murray	Colusa	Colusa Co. Coop. Ext. P.O. Box 180 Colusa, CA 95932	916-458-2105
Janet Caprile	Contra Costa	Contra Costa Co. Coop. Ext. 1700 Oak Park Blvd., Bldg. A-2 Pleasant Hill, CA 94523	415-646-6540
Richard Bethell	El Dorado	El Dorado Co. Coop. Ext. 311 Fair Lane Placerville, CA 95667	916-621-5502
Pedro Ilic	Fresno	Fresno Co. Coop. Ext., 1720 S. Maple Ave., Fresno, CA 93702	209-488-3285
Deborah Giraud	Humboldt	Humboldt Co. Coop. Ext. Agricultural Center Bldg., 5630 S. Broadway Eureka, CA 95501-6998	707-445-7351
Carl Bell Cuco Gonzales	Imperial	Imperial Co. Coop. Ext. 1050 E. Holton Road Holtville, CA 92250-9615	619-352-9474
Bob Beede	Kings Co.	Kings Co. Coop. Ext. Kings Co. Govt. Center 680 N. Campus Drive Hanford, CA. 93230	209-582-3211
Rachel Elkins Greg Giusti	Lake	Lake Co. Coop. Ext. Agricultural Center 883 Lakeport Boulevard Lakeport, CA 95453	707-263-2281
Jerry Schmeirer	Lassen	Lassen County Coop. Ext. Memorial Building Susanville, CA 96130	916-257-8311 Ext. 111
Ellen Rilla	Marin	Marin County Coop. Ext. 1450-A Lucas Valley Road San Rafael, CA 94903	415-499-6352
Glen McGourty Rod Shippey	Mendocino	Mendocino Co. Coop. Ext. Agricultural Center/Courthouse Ukiah, CA 95482	707-463-4495
Jim Farley	Merced	Merced County Coop. Ext. 2145 W. Wardrobe Avenue Merced, CA 95340	209-385-7403
John Inman	Monterey	Monterey Co. Coop. Ext. 118 Wilgart Way Salinas, CA 93901	408-758-4637
Harold Otto	Orange	Orange Co. Coop. Ext. 1000 South Harbor Blvd. Anaheim, CA 92805	714-774-7050

Garth Veerkamp	Placer/Nevada	Placer/Nevada Co. Coop. Ext. 1147 "E" Avenue Auburn, CA 95603	916-823-4581
Holly George	Plumas/ Sierra	Plumas-Sierra County Coop. Ext. 208 Fairgrounds Rd. Quincy, CA 95971	916-283-0250
Chloe Beitler	Riverside	Riverside Co. Coop. Ext. 21150 Box Springs Rd. Moreno Valley, CA 92387	714-683-6491
Richard Smith	San Benito Monterey Santa Cruz	San Benito Co. Coop. Ext. 649-A San Benito Street Hollister, CA. 95023	408-637-5346
Janet Hartin Jim Sullins	San Bernardino	San Bernardino Co. Coop. Ext. 777 E. Rialto Avenue San Bernardino, CA 92324	714-387-2170
Faustino Munoz	San Diego	San Diego Co. Coop Ext., Bldg. 4., 555 Overland Ave., San Diego, CA 92123	619-694-2846
Franz Kegel	San Joaquin	San Joaquin County Coop. Ext. 420 South Wilson Way Stockton, CA 95205	209-944-3711
Ann King	San Mateo/ San Francisco	San Mateo Co. Coop. Ext. P.O. Box 37 Half Moon Bay, CA 94019	415-726-9059
Louie Valenzuela	Santa Barbara San Luis Obispo Ventura	Santa Barbara Co. Coop. Ext. 624 West Foster Road Santa Maria, CA 93455	805-934-6240
Nancy Garrison Craig Kolodge Steve Mendivil	Santa Clara	Santa Clara Co. Coop Ext. 2175 The Alameda San Jose, CA 95126-1149	408-299-2635
Ron Tyler	Santa Cruz	Santa Cruz Co. Coop. Ext. 1432 Freedom Blvd. Watsonville, CA 95076-2796	408-761-4056
Richard Buchner	Shasta	Shasta Co. Coop. Ext. 3179 Bechelli Lane, Suite 206 Redding, CA 96002	916-224-4900
Roger Benton	Siskiyou	Siskiyou County Coop. Ext. 1655 South Main Street Yreka, CA 96097	916-842-2711
Larry Clement Dave Pratt	Solano	Solano Co. Coop. Ext. 2000 West Texas Street Fairfield, CA 94533-4498	707-429-6381
Paul Vossen	Sonoma	Sonoma Co. Coop. Ext. 2604 Ventura Ave., Rm. 100-P Santa Rosa, CA 95401-2894	707-527-2621
Charles Wilson	Sutter/Yuba	Sutter/Yuba Coop. Ext. P.O. Box 628 Yuba City, CA 95992	916-741-7515
Bill Richardson	Tehama	Tehama County Coop. Ext. P.O. Box 370 Red Bluff, CA 96080	916-527-3101
Gary Rush	Trinity	Trinity Co. Coop. Ext. P.O. Box 490 Hayfork, CA 96041	916-628-5495
Manuel Jimenez	Tulare	Tulare Co. Coop. Ext. Ag Building, Co. Civic Center Visalia, CA 93291	209-733-6363