

FARM LABOR CONDITIONS ON ORGANIC FARMS IN CALIFORNIA

**RON STROCHLIC
CATHY WIRTH
ANA FERNANDEZ BESADA
CHRISTY GETZ**

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TABLE OF CONTENTS

Table of Figures	iii
Acknowledgements.....	iv
Executive Summary	v
Introduction.....	1
Background: Farm Labor Conditions in Organic Agriculture.....	2
Research Methods.....	4
Survey Findings	6
Farm and Farmer Characteristics	6
Wages.....	10
Benefits	12
Supervision And Management.....	17
Occupational Health and Safety.....	18
Recruitment And Retention	19
Attitudes.....	21
Comparisons with Conventional Agriculture	25
Farm Labor Conditions and Farm Level Benefits	26
Conclusions.....	29
References Cited.....	30

TABLE OF FIGURES

Exhibit 1. Survey Respondents by Commodity	5
Exhibit 2. Percent of Land in Organic or Transitional Production	7
Exhibit 3. Annual Farm Revenue.....	7
Exhibit 4. Use of Farm Labor Contractors by Farm Size and Percent of Land in Organic	9
Exhibit 5. Mean Entry Level Wage by Annual Revenue and Percent of Land in Organic/Transitional Production.....	10
Exhibit 6. Mean Entry Level Wages by Annual Revenue and Percent of Land in Organic/Transitional Production.....	11
Exhibit 7. Mean Senior Fieldworker Wages by Annual Revenue and Percent of Land in Organic/Transitional Production.....	11
Exhibit 8. High and low Supervisor Salaries by Annual Revenue and Percent of Land in Organic/Transitional Production.....	11
Exhibit 9. Provision of Health Insurance by Annual Revenue	13
Exhibit 10. Types of Housing Assistance	14
Exhibit 11. Mean Days Paid Time Off by Annual Revenue and Percent of Land in Organic/Transitional Production.....	14
Exhibit 12. Provision of Retirement Benefits by Annual Revenue	15
Exhibit 13. Non-Traditional Benefits	15
Exhibit 14. Strategies for Providing Year-Round Employment	16
Exhibit 15. Traditional and Non-Traditional Benefits.....	17
Exhibit 16. Supervision and Management	17
Exhibit 17. Respectful Treatment Training and Guidelines by Farm Size	18
Exhibit 18. Occupational Safety and Health Practices by Farm Size	19
Exhibit 19. Five and Ten-Year Retention Rates by Farm Size.....	19
Exhibit 20. Labor Shortages by Farm Size and Percent of Land in Organic/Transitional Production	20
Exhibit 21. Interest in Farm Labor Management Information by Farm Size	21
Exhibit 22. Farm Labor Management Information or Training Needs.....	22
Exhibit 23. Interest in Fair Labor Certification: Percent Responding “Very Interested” by Farm Size and Percent of Land in Organic/Transitional Production	23
Exhibit 24. Willingness to Pay for Fair Labor Certification.....	23
Exhibit 25. Attitudes Regarding Farm Labor Management.....	24
Exhibit 26. Comparison of FELS Respondents and Organic Growers: All Respondents	25
Exhibit 27. Correlations: Farm Labor Conditions “Score” and Five- and Ten-Year Retention Rates.....	26
Exhibit 28. Individual Farm Labor Conditions and Five-Year Retention Rates	27
Exhibit 29. Health Insurance and Five-Year Retention Rates	27
Exhibit 30. Health Insurance Coverage for Permanent Employees and Five-Year Retention Rates	28
Exhibit 31. Lost Days per Direct-Hire Employee by Occupational Safety and Health (OSH) Practice.....	28

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EXECUTIVE SUMMARY

Efforts to promote a more sustainable food system have increased interest in a farming system that is environmentally balanced and economically viable. At the same time, however, recent years have witnessed growing awareness of the need for a food system that is socially equitable, offering greater access to healthy food for low-income consumers and improved farm labor conditions.

This study represents an effort to identify farm labor conditions on sustainable farms in California. The research is based on a telephone survey of 300 organic farms throughout the state. The respondents represent a broad range of organic farms in California, ranging in size from 0.25 to 16,800 acres and with between one and one hundred percent of their land in organic production.

The findings provide an overview of the state of farm labor conditions on organic farms in California, including wages, benefits and other workplace conditions. The findings also provide insights regarding differences between farms with greater and lesser percentages of land in organic production, and differences between different sized farms, in terms of acreage and revenue. The data also point to a number of farm-level benefits of positive farm labor conditions, and ways in which good labor conditions are also good for business.

KEY FINDINGS

Wages

The survey respondents reported a mean wage of \$8.20 per hour for entry level field workers in 2006, ranging from \$6.75 to \$15 per hour. About one-fifth (22%) reported a starting wage of minimum wage. Farms with more land in organic/transitional production report higher entry level wages. Farms with 50% or more of their land in organic production report mean entry-level farmworker wages of \$8.54 per hour, compared with \$7.37 per hour among farms with less than half their land in organic/transitional production.

Benefits

Slightly over one third of respondents (36%) offer health insurance to some or all of their permanent and/or seasonal direct-hire employees. Half (49%) offer health insurance to all permanent field workers, while the remainder offer it to only a portion, generally staff with more seniority. Seventeen percent of farms offer health insurance to seasonal employees as well. Larger farms are significantly more likely to offer health insurance than smaller ones.

Approximately two in five respondents offer some type of housing assistance, with larger employers more likely to do so. The most commonly offered forms of housing assistance are free housing and assistance paying for utilities. Other forms of housing assistance include subsidized housing, farm rental housing, assistance finding housing and assistance providing a down payment or deposit on a house or rental unit.

The majority (71%) of respondents offer some form of bonuses and/or profit-sharing to employees.

The majority (59%) of respondents offer paid time off (PTO) as a benefit, with large farms almost twice as likely to offer that (75%) than small ones (38%). The mean number of paid days off is 9.7, with a range of 2 to 30 days. Farms with more land in organic/transitional production report offering significantly more days off than their counterparts, regardless of size.

Nearly one in five (19%) respondents offers retirement benefits.

The survey also elicited information about non-traditional benefits. The most commonly offered benefits include free food from the farm, personal loans and opportunities for professional development.

Nearly three-fourths (73%) of respondents report engaging in efforts to provide more year-round employment for farmworkers through a range of activities, including hiring farmworkers to paint and repair during slow seasons, producing winter crops, labor-sharing arrangements, value-added activities and cross-training.

Recruitment and Retention

The respondents report five-year retention rates of 45% among direct-hire employees, with ten-year retention rates of 26%. Retention rates do not vary significantly by farm size, with slightly higher five-year retention rates among large farms and virtually identical ten-year rates.

Despite relatively high retention rates, 32% of respondents reported that they did not have access to sufficient labor at some point during 2006. Large farms (40%) were somewhat more likely to report labor shortages than small farms (29%). Small farms with over 50% of their land in organic/transitional production were least likely to report labor shortages, while small farms with less than 50% of their land in organic/transitional production were most likely to report that as a problem.

Interest in Fair Labor Certification

Almost two-thirds (59%) of respondents expressed an interest in “fair labor” certification or labeling programs that would provide price premiums and market differentiation for growers offering good farm labor conditions. Twenty-seven percent of respondents were “very interested” in this type of certification while 32% were “somewhat interested.” There were virtually no differences with respect to farm size.

Comparison with Conventional Farms

The survey findings were compared with results from the annual Farm Employers Labor Service (FELS) wage and benefit survey, which was used as a rough proxy for conventional farms. The findings indicate that organic growers appear to offer better wages than FELS respondents, and are more likely to offer profit-sharing/bonuses and food from the farm. In contrast, FELS respondents are more likely to offer health insurance, paid time off, retirement plans and employee manuals.

Farm Labor Conditions and Farm Level Benefits

The data indicate associations between positive farm labor conditions and increased five and ten-year retention rates. Benefits most closely associated with retention include bonuses/profit-sharing, housing assistance, personal loans, food from the farm and paid time off. The provision of health insurance is also associated with increased retention, although less strongly than other benefits.

The findings also indicate lower reported rates of accidents and injuries on farms implementing certain occupational safety and health (OSH) practices. Lowering trees results in the largest reduction in accidents and injuries (on farms with tree crops), followed by bonuses for remaining accident-free and hourly pay to reduce speed-related accidents and injuries. No associations were found between positive farm labor conditions and reduced supervision costs or increased access to labor.

INTRODUCTION

The movement toward a more sustainable food system has grown dramatically in recent years. Organic food sales have increased at double-digit rates and efforts to promote the economic viability of sustainable farming through direct sales, farmers' markets, farm-to-institution sales, and other mechanisms have been on the rise, with some sustainable growers attaining near-celebrity status. Terms such as "local food" and "food miles" are becoming increasingly commonplace in our daily lexicons, while "locavore" was recently named Word of the Year by the New Oxford American Dictionary.

Recent years have also witnessed increased interest in a more socially just food system, particularly in terms of access to food among low-income consumers. Community food security efforts have sprung up across the country, with the goal of increasing access to healthy, nutritious and culturally appropriate food for all consumers, regardless of socioeconomic status, place of residence, and/or ethnicity.

Although less commonly addressed, improved conditions for agricultural and other food system workers is a fundamental aspect of a more socially just food system as well, with growing consensus that food produced under inequitable conditions cannot be considered "sustainable." Nonetheless, interest in promoting improved farmworker conditions as part of a more sustainable food system is growing. Certification schemes addressing farm labor conditions have been cropping up, including Food Alliance, the Agricultural Justice Project and a draft National Sustainable Agriculture Standard. Groups such as the Domestic Fair Trade Association and the Local Fair Trade Network have been working to develop a fair trade model in the U.S., with the promise of equitable conditions for farmers and farmworkers. At the same time, the Coalition of Immokalee Workers has been waging a successful campaign to convince corporations to pay an extra penny per pound of tomatoes, an amount that would go directly to workers.

Recent case study research conducted by the California Institute for Rural Studies (Strochlic and Hamerschlag 2006) identified a range of positive farm labor practices on organic and sustainable farms throughout California. This study seeks to identify the extent to which those practices are being implemented on a representative sample of organic farms throughout California. As such, it offers a snapshot of "the state of social sustainability" of organic agriculture in California. It identifies where the organic sector is doing well with respect to farm labor conditions, where there is room for improvement and how organic agriculture compares to conventional agriculture with respect to farm labor conditions. In addition to providing important baseline information to measure progress over time, we hope this information will contribute to the formulation of realistic and viable social certification standards that will benefit both farmers and farmworkers.

At the same time, we hope this information will be of use to organic growers. It represents one of the few wage and benefit surveys of organic agriculture¹ and offers important insights regarding associations between improved labor conditions and farm level benefits.

¹ See Shreck et al (2006) for an additional wage and benefit survey of organic farms in California.

BACKGROUND: FARM LABOR CONDITIONS IN ORGANIC AGRICULTURE

While the literature on farm labor conditions is extensive, there are fewer studies addressing the specific context of organic agriculture (Allen et al 1991; Allen 1994; Brown 2003; California Sustainable Agriculture Working Group 2004; Guthman 2004; Henderson et al 2003; Inouye and Warner 2001; Jaffee 2000; Mascarenhas 1997; Mello 2006; Shreck et al 2006; Ulrich 2006).

Despite the fact that farm labor conditions are an integral component of organic certification internationally (IFOAM, nd),² that is not the case in the U.S. and there has been heated debate as to whether that should change. A recent survey of organic farmers in California (Shreck et al 2006) found that the majority of growers oppose the inclusion of social standards as part of USDA organic certification. Many noted that while they would like to offer improved benefits, a requirement to do so would negatively affect their economic viability.

Nevertheless, many growers are aware that a skilled, stable and satisfied workforce can contribute to increased viability of their farm operations, and have made numerous efforts to promote worker satisfaction and retention. There are numerous benefits associated with this, including access to sufficient labor and reduced costs associated with recruitment and training. Retention is particularly important on some organic farms, which require knowledge of organic production practices, often of numerous crops.

A large body of literature (Combs et al 2006; Huselid 1995; Huselid et al 1997; Koch and McGrath 1996; Pfeffer 1998; Wagar 1998) has identified many positive associations between employment conditions and firm-level benefits in the non-agricultural sector. Although similar research focusing on the agricultural sector has been more limited, several studies point to the connections between positive labor management practices, worker satisfaction and farm-level productivity and profitability.

Rosenberg et al (2005) highlight five principal risks associated with the lack of a stable, knowledgeable or satisfied farm labor force. These include: (a) not getting essential tasks completed (e.g., fields not planted, crops not harvested); (b) tasks being done poorly and/or in an untimely manner, resulting in poor productivity and/or higher labor costs per unit output, or lowered product quality and value; (c) high indirect costs associated with employee turnover, such as unemployment insurance; (d) conflicts with employees, which can result in any of the above problems, as well as legal suits against employers; and (e) fines or penalties for violation of laws and regulations, or costs associated with proving compliance with laws and regulations.

In order to address these risks, Billikopf (2003) posits that farmworkers hope that “management will (1) value their feelings and opinions; (2) provide positive feedback for work well done; (3) meet the agreed upon conditions and terms of employment; (4) be consistent and courteous; and

² IFOAM is the International Federation of Organic Agriculture Movements. IFOAM defines organics as “an agricultural system that promotes environmentally, socially, and economically sound production of food, fiber, timber, etc.” In 2003, IFOAM voted to include a new chapter on ‘Social Justice’ in its Basic Standards; however, IFOAM’s social clause does not require a concrete set of practices and, thus, remains largely symbolic.

(5) provide a work environment where they can develop their potential over time.” Billikopf emphasizes the importance of sound farm labor management practices, noting that a “fixation on productivity alone, with little concern for worker needs, may lead to a reduction in worker output.”

Bitsch and Hogberg (2005) cite the importance of good human resource management practices in agricultural settings and make the case for greater attention to this on farms. They note that although “hired labor is paramount to the success of many farms...agricultural managers often perceive their workforce as different from the general workforce [and]...doubt the applicability of management practices based on research in other industries.” Their research has identified a number of conditions impacting worker satisfaction. They note that the most frequent worker complaint has to do with the lack of regular raises or formal systems for determining raises. Conversely, motivators for satisfaction include positive relationships with supervisors; input in workplace decisions and receiving information about the farm operation; perceptions of a safe working environment; and “family-business values,” i.e., feeling that the workplace is like a family, with direct access to top management. Another contributor to employee satisfaction is regular meetings, which may include recognition of employees' contributions, general information about the company, long-term plans and developments and reviews of organizational rules and policies.

Access to information is highly valued by farmworkers. Fogelman et al (1999) measured four core dimensions of farmworker satisfaction: variety, autonomy, feedback and task identity.³ They found that feedback was the area in which employees were least satisfied. Noting the irony of this situation, the authors claim that “feedback is the dimension that employers and managers have the most control over, and yet it is the area in which their employees are least satisfied.”

Several studies have attempted to identify factors associated with farmworker retention. Gabbard and Perloff (1997) found that increased benefits are more likely to result in employee retention than wages. Their analysis of data from the National Agricultural Worker Survey (NAWS) reveals that “employees are more likely to return to employers who offer benefits, pay by the hour, provide good working conditions and hire directly.” In particular, they note that “the probability of [an employee] wanting to return rises by 19 percent if health insurance is provided, 21 percent if paid leave is offered and 9 percent if no-fee housing is provided.” The authors conclude that “an employer gets a greater increase in the probability that a worker remains or returns by spending the last dollar of compensation on benefits or improving working conditions rather than on higher wages.” Similarly, Miklavcic (2004) found that “non-economic, management related changes are as likely as a rise in wages to attract additional labor to where it is needed.”

Bitsch (2002) found that growers offering benefits but lower wages often complained of losing skilled employees to neighbors offering higher wages. She suggests making the cash value of the benefits offered more explicit to workers, who may be unaware of their actual value. Fogelman et al (1999) concur, noting that this concern can be addressed “by good communication between employers and employees about all aspects of the job, including the total value of compensation packages.”

³ “Task identity” refers to employee perceptions that their work contributes to the farm operation.

RESEARCH METHODS

Sample Selection

The intention of this survey was to further refine our understanding of farm labor conditions on sustainable farms in California. Given the absence of a standardized definition of “sustainable agriculture” and the subsequent lack of a database of “sustainable farms,” we focused our research on organic farms as a proxy.⁴ The sample of farms to be included in this survey was drawn from a list of all organic farms in California (n=2,176). That list was obtained from the California Department of Food and Agriculture (CDFA) Organic Program, which maintains a publicly accessible database of all organic farms in California.

We assigned each farm to a commodity category based on predominant crop grown (or “mixed” in the case of the case of highly diversified farms). We utilized the following commodity categories: berries, cattle, citrus, citrus-avocado, dairy, field, fruit, grapes, herbs, miscellaneous, mixed, nursery, nuts, pasture, poultry, raisin, stone fruit, tree, vegetables and winegrapes.

We identified a target of 350 completed interviews in order to obtain a large enough sample to conduct statistically significant analysis. A target number of interviews was identified for each sector based on the number of farms growing each commodity and the labor intensiveness of the specific crops. Higher targets were set for commodities representing larger portions of the organic sector and for commodities that are more labor intensive in nature. The number of target interviews for each sector was as follows: berries (15); cattle (3); citrus (26); citrus/avocado (9); dairy (13); field crops (22); fruit (15); table grapes (5); herbs (6); miscellaneous (1); mixed (68); nursery (23); nuts (22); pasture (2); poultry (7); raisin (9); stone fruit (9); tree crops (40); vegetables (28); and winegrapes (32). (See Exhibit 1 for a detailed breakdown of respondents by commodity).

We then drew random samples from the universe of farms in each commodity category. An initial sample was drawn for each commodity with the target number of growers to be interviewed. Backup samples were created for each commodity, in the event that the target number of interviews could not be completed based on the initial sample.

Survey Administration

In order to reduce the “self-selection bias” often associated with mail surveys⁵ and to obtain more detailed information about labor practices, we conducted the survey via telephone. A team of graduate students from the University of California, Davis administered the survey during the period January-July 2007. Each interviewer worked with a particular commodity list. Each grower was contacted up to three times at different times of the day. If a grower could not be reached after three attempts they were classified as “unable to contact.” For each list, growers

⁴ See Shreck et al. (2006) for a discussion of the pros and cons of using the organic agriculture as a proxy for “sustainable” agriculture.

⁵ In this case, the need to reduce self-selection bias is based on the possibility that growers with better labor practices would be more likely to respond to this survey, thereby skewing the results.

from the initial random sample were contacted first. If a grower was rendered ineligible because they could not be contacted, had no workers or did not wish to participate in the survey, an additional grower was contacted from a back-up list. In many cases, interviewers had to go through a number of back-up lists to complete the target number of surveys for each commodity. Even then, some interviewers ran out of farmers to contact before they could complete the target number of surveys for their commodity. Of the 2,176 organic growers in California, we contacted 1,801 (67%) to obtain 300 interviews.

Exhibit 1. Survey Respondents by Commodity

Commodity	All CA Organic Growers	Target Sample	Surveys completed	Percent of All Growers Represented in Survey
Berries	46	15	9	20%
Cattle	11	3	0	0%
Citrus	248	26	27	11%
Dairy	66	13	6	9%
Field	177	22	22	12%
Grape	23	5	3	13%
Herbs	16	6	0	0%
Mixed/Diversified	495	69	55	11%
Mixed Tree	455	64	65	14%
Nursery	66	23	15	23%
Nuts	202	22	26	13%
Pasture	11	2	2	18%
Poultry	19	7	1	5%
Raisin	50	9	10	20%
Stone fruit	49	9	9	18%
Vegetable	87	28	12	14%
Winegrape	155	32	38	25%
TOTAL	2176	355	300	14%

All respondents were screened with regard to their use of hired labor. Respondents with no hired labor were not surveyed. Since previous research (Shreck et al 2006) found that approximately half of organic growers in California have six or fewer employees at peak time, we did not set a minimum threshold regarding the number of employees required for participation in the survey. All growers with one or more hired employees were therefore eligible to participate.

The complete survey (“full survey”) was administered to all growers employing direct-hire workers. A significantly shorter survey (“FLC survey”) was administered to growers employing labor only via farm labor contractors (FLCs). The full survey took approximately thirty minutes to administer, and consisted of questions on farm size, crops under cultivation, number of direct-hire and contract labor employees, wages and benefits, management practices, health and safety practices, farm sales and revenue, labor costs, recruitment and retention, and grower interest in fair labor certification. The survey for growers relying exclusively on contract labor was much

shorter, consisting of the subset of questions related to farm labor contractors from the full survey.

Growers more comfortable communicating in Spanish were re-contacted by Spanish-speaking interviewers, who administered the survey using “sight translation.” A small number of growers speaking languages other than Spanish or English were contacted; however, due to a lack of interviewers fluent in those languages we were unable to include them in the survey.

Respondents not wishing to complete the survey over the telephone were offered the option of completing a paper copy or doing so online. Six respondents chose to complete a paper copy of the survey, while 20 chose to respond using an Internet-based survey program.

Data Analysis

Of the 300 completed surveys, 220 (73%) were full surveys while 80 (27%) were FLC surveys. Nearly three-fourths of the surveys (72%) were completed by growers, while 13% were completed by farm managers, 3% by human resource directors and 12% by other types of respondents, including bookkeepers, office managers, operations managers, controllers and family members.

The data were entered in Survey Monkey, an online survey administration tool and exported to the Statistical Package for the Social Sciences (SPSS) for analysis. The data were weighted for purposes of the analysis in order to reflect the target number of interviews for each commodity. Data analysis was conducted using SPSS.

SURVEY FINDINGS

FARM AND FARMER CHARACTERISTICS

The respondents have been farming for an average of 24 years, with an average of 11 years in organic production. Respondents reported a mean farm size of 706 acres and a median farm size of 86 acres,⁶ with a range of 0.25 to 16,800 acres.

Slightly over half (53%) of the responding farms are 100% organic, while the remainder consist of mixed, organic-conventional operations. When land in transition to organic is included, the percentage of farms with all their land in organic or transitional production increases to 58%. One-third (30%) of respondents report less than 50% of their land in organic or transitional production.

⁶ Median farm size signifies that half of the farms in the sample are smaller than 86 acres, while half are larger. In cases of very small or large farms that can skew the average (up or down), the median is often considered a more accurate measure than mean.

Exhibit 2. Percent of Land in Organic or Transitional Production

Percent of Land in Organic/Transitional Production	Percent of Farms
Less than 25%	21%
25-50%	9%
50-75%	6%
75-100%	64%
Total	100%

Farms with revenues of under \$250,000 (hereafter referred to as “small farms”) report greater percentages of land in organic or transitional production than farms with annual revenues of \$250,000 or more (hereafter referred to as “large farms”). Small farms report a mean of 86% of land in organic or transitional production, compared with a mean of 59% among large farms ($p < .001$). Whereas only 7% of small farms have less than 25% of their land in organic production, that is true for over one-third (35%) of larger farms ($p < .001$).

With respect to annual revenues, the farms in our sample range from very small to very large, with the majority reporting annual revenues of under \$500,000.

Exhibit 3. Annual Farm Revenue

Annual Revenue	Percent of Farms
Under \$100,000	27%
\$100,000-\$250,000	20%
\$250,000-\$500,000	11%
\$500,000-\$1 million	13%
Over \$1 million	29%
Total	100%

Crop Diversification and Marketing Channels

The respondents report a mean of 3.6 organic crops. Nonetheless, nearly half (48%) of the responding farms are completely undiversified, reporting only one organic crop. An additional 34% produce between two and five crops, while 18% report between 6 and 30 crops. Smaller farms are more diversified than their larger counterparts, with an average of 4.2 and 2.6 distinct crops respectively.

Overall, the respondents report a mean of 76% of sales through wholesale channels, with 24% in direct sales to stores, restaurants, farmers' markets, CSA, etc. Smaller farms exhibit a much higher reliance on direct marketing, with an average of 32% of organic sales to direct markets, compared with only 7% among farms over 250 acres.

Demand for Labor

The respondents report an average of 53 direct-hire field workers per farm in 2006. Of direct-hire fieldworkers, respondents report an average of 13 permanent (defined as employed for nine or more months during the year) and 40 seasonal workers per farm.

As would be expected, the number of workers varies by farm size. Small farms report an average of 6 direct-hire workers, of whom 4 are permanent and 2 are seasonal. In contrast, large farms report an average of 78 direct-hire workers, with 18 permanent and 60 seasonal hires.

The findings corroborate other research (Soil Association 2006) indicating that organic production is associated with the creation of more employment. Whereas the respondents report a mean of 0.76 workers per acre across all farms, farms with less than 50% of land in organic or transitional production report an average of 0.58 direct-hire workers per acre. In contrast, that figure jumps to 0.84 workers per acre on farms with 50% or more of land in organic or transitional production.⁷

Organic production is also associated with greater opportunities for permanent employment. Farms with less than 50% of land in organic/transitional production reported 0.34 permanent direct-hire workers per acre, compared with 0.50 permanent workers per acre on farms with 50% or more of their land in organic/transitional production.

More diversified farms also exhibit higher demand for labor. Farms with one to five crops reported 0.45 direct-hire workers per acre, whereas those with more than five different crops report 0.82 workers per acre.

Use of Farm Labor Contractors

The number of farmworkers employed through farm labor contractors (FLCs) has increased significantly in recent years. While many, particularly licensed FLCs strive to provide fair wages and decent conditions, there are numerous reports of abusive and exploitative treatment on the part of many FLCs. Efforts to improve farm labor conditions therefore often stipulate direct-hire of farmworkers when possible.

Approximately two in five respondents (44%) did not hire any farmworkers through FLCs in 2006. Nearly one third (29%) used a combination of direct-hire workers and FLCs, while a fourth (27%) of respondents hired farmworkers exclusively through FLCs.

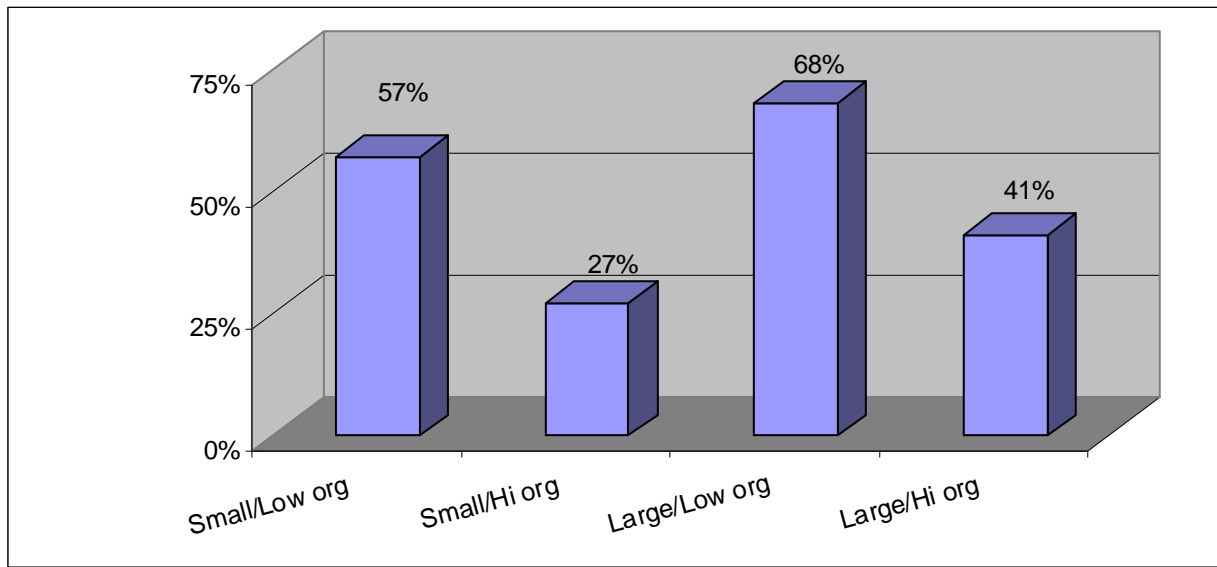
Farms with more land in organic production report lower use of FLCs. Whereas one third (30%) of farms with more than 50% of land in organic/transitional production reported contracting with FLCs in 2006, that was the case for twice as many (61%) farms with less than 50% of land in organic/transitional acreage. Overall, large farms (53%) are twice as likely to contract with FLCs than their smaller counterparts (33%) ($p < .001$).⁸

⁷ The analysis excludes plant nurseries, where high demand for labor on small acreage skews the analysis.

⁸ Nonetheless, several smaller farmers commented that they contract with farm labor contractors because they do not have insurance coverage for direct-hire workers and/or do not want to deal with the paperwork and legal requirements associated with direct-hire workers.

More land in organic/transitional production is associated with lower use of FLCs, even when controlling for farm size. For example, 57% of small farms with less than half their land in organic production contracted with FLCs, compared with only 27% of farms with more than 50% of land in organic. Similarly, 41% of large farms with more than half their land in organic production contracted with FLCs, compared with 68% of large farms with less than half their land in organic production.

Exhibit 4. Use of Farm Labor Contractors by Farm Size and Percent of Land in Organic



The survey was unable to capture reasons for lower reliance on FLCs on farms with more land in organic production. One possibility is that this may be due to the need for a more skilled workforce that is familiar with the more complex production requirements of organic agriculture. At the same time, however, Sierra et al. (2008) found that a higher percentage of land in organic production is associated with a more philosophical commitment to organic farming as better for human health and the environment, rather than as a more profitable farming system. In that sense, farms with more land in organic production may be more philosophically committed to hiring employees directly rather than via farm labor contractors.

Of respondents contracting with FLCs, the majority (65%) report that they consider an FLC's reputation with respect to labor conditions when deciding with whom to contract. One third (33%) also report specifying a wage rate for farmworkers hired through FLCs, with a mean of \$7.75 per hour.⁹ A number of respondents reported per unit bonuses for FLC workers, while one respondent reported providing FLC workers with free housing and food during their stay on the farm. Conversely, a number of citrus growers noted that they have no control over FLC wages, since they contract with packing houses, who are responsible for hiring and managing harvest workers.

⁹ This is one dollar above California minimum wage of \$6.75 in 2006, the year to which all survey questions referred.

WAGES

Entry Level Wages

The respondents reported a mean wage of \$8.20 per hour for entry-level field workers in 2006, with a range of \$6.75 to \$15 per hour. About one-fifth (22%) reported a starting wage of minimum wage, 30% reported starting wages of \$7.00-\$7.75 per hour, another 30% reported starting wages of \$8.00-\$9.50 per hour, while 18% reported starting wages of \$10 or more per hour.¹⁰

Farms with more land in organic/transitional production report higher entry level wages. Farms with 50% or more of their land in organic production report mean entry-level field worker wages of \$8.54 per hour, compared with \$7.37 per hour among farms with less than half their land in organic/transitional production, a difference of \$1.17 per hour.

These differences are more pronounced when controlling for farm size. When broken down by farm size and percent of land in organic/transitional production, small farms with over 50% of land in organic production report significantly higher wage rates for entry level field workers (\$8.79/hour) than their counterparts.¹¹

Exhibit 5. Mean Entry Level Wage by Annual Revenue and Percent of Land in Organic/Transitional Production

Farm Category	Mean Wage	Standard Deviation
Small/low organic	\$7.87	\$1.19
Large/high organic	\$8.79	\$1.57
Large/low organic	\$7.28	\$0.57
Large/high organic	\$7.98	\$1.48

As Exhibit 6 reveals, with the exception of farms with annual revenues of \$50,000-\$99,000, farms with more than 50% of their land in organic production reported higher mean entry level wages than those with less land in organic production.

¹⁰ The survey was unable to obtain data regarding piece-rate equivalents, which are often higher than hourly wages.

¹¹ F=35.75, p<.001.

Exhibit 6. Mean Entry Level Wages by Annual Revenue and Percent of Land in Organic/Transitional Production

Annual Farm Revenue	Less than 50% organic	More than 50% organic	Mean per Hour Difference
\$0-\$9,999	N/A	9.33	N/A
\$10,000-\$49,999	7.75	9.75	\$ 2.00
\$50,000-\$99,999	8.97	8.61	\$ (0.36)
\$100,000-\$249,999	7.36	8.10	\$ 0.74
\$250,000-\$499,999	7.00	8.48	\$ 1.48
\$500,000-\$999,999	7.32	7.85	\$ 0.53
\$1,000,000-\$4,999,999	7.24	7.56	\$ 0.32
\$5,000,000 and over	7.34	8.66	\$ 1.32
ALL FARMS	7.40	8.37	\$ 0.97

Senior-Level Farmworker Wages

The mean hourly wage for fieldworkers with the most seniority was \$10.51 per hour, with a range of \$6.80 to \$21 per hour. The most commonly reported hourly wage for senior fieldworkers was \$10 per hour, as reported by 14% of respondents. That was followed by \$9-\$9.50 per hour (reported by 17%) and between \$11 and \$12 per hour (reported by 14%). Here too, small farms with a high percentage of land in organic/transitional production report the highest wage rates. Nonetheless, the differences are not as notable as for entry level wages.

Exhibit 7. Mean Senior Fieldworker Wages by Annual Revenue and Percent of Land in Organic/Transitional Production

Farm Category	Mean Wage
Low sales/low organic	\$9.48
Low sales/high organic	\$10.55
High sales/low organic	\$10.19
High sales/high organic	\$10.37

Supervisor Wages and Salaries

The survey respondents reported a range of compensations for supervisors, who in some cases are paid on an hourly basis and in others are salaried. In terms of annual equivalents, field supervisor salaries ranged between \$33,668 and \$42,110 per year. Large farms with a high percentage of land in organic production reported the highest salary levels for supervisors.

Exhibit 8. High and low Supervisor Salaries by Annual Revenue and Percent of Land in Organic/Transitional Production

Farm Category	Mean Minimum Salary	Mean Maximum Salary
Low sales/low organic	\$31,381	\$41,499
Low sales/high organic	\$33,394	\$40,118
High sales/low organic	\$37,773	\$43,004
High sales/high organic	\$37,720	\$47,293

Wage and Salary Adjustments

Wage adjustments are important strategies for promoting increased job satisfaction and employee retention. Over half (57%) of the respondents reported formal systems for providing salary and wage increases, through a range of systems including automatic and merit-based approaches. Automatic adjustments include annual – and in some cases seasonal – cost of living increases, generally of two to five percent, or set increases, often of 25 cents per hour, but ranging from five cents to two dollars per hour. Merit-based adjustments are based on performance reviews or the acquisition of new skills, for example “moving from hoeing to driving a tractor.”

BENEFITS

As in non-agricultural sectors, the provision of benefits is an important strategy for promoting worker satisfaction, productivity and retention. The survey elicited information about a range of traditional and non-traditional benefits. Traditional benefits include health insurance, profit-sharing and bonuses, housing assistance, paid time off, retirement plans and life insurance. Non-traditional benefits include personal loans, transportation assistance, food from the farm, access to land, professional development opportunities and allowing social service providers to conduct on-farm outreach with farmworkers.

Health Insurance

Lack of access to affordable health care is one of the more challenging issues facing farmworkers, who exhibit worse health indicators than both the general population and non-farmworker Latinos. The California Agricultural Worker Health Survey (Villarejo et al 2000) found that 70% of farmworkers lack any type of health insurance at all, with 32% of men never having been to a doctor in their lives and 50% never having received dental care.

Slightly over one third of respondents (36%) offer health insurance to some or all of their permanent and/or seasonal direct-hire employees. Half (49%) offer health insurance to all permanent field workers, while the remainder offer it to only a portion, generally staff with more seniority. Seventeen percent of farms offer health insurance to seasonal employees as well.

Given the expensive nature of health insurance, it is not surprising that the provision of that benefit increases with farm size. Farms with annual revenues of over \$1 million are in fact more than five times as likely to offer health insurance (66%) than farms with revenues of under \$100,000 (13%). Several respondents noted that while they are unable to provide health insurance, they pay all or part of their workers’ medical bills. This may be a more cost-effective strategy for providing access to health care than purchasing health insurance.¹²

¹² Nonetheless, this system would only work with employers with a strong commitment to doing so and the ability to cover high medical costs if necessary.

Exhibit 9. Provision of Health Insurance by Annual Revenue

Farm Category	Percent Providing Health Insurance
Under \$100,000	13%
\$100,000-500,000	19%
\$500,000-1 million	45%
Over \$1 million	66%

Among respondents not offering health insurance, several noted that they have offered that in the past, but could no longer afford to do so. Several also claimed that they had offered their employees health insurance, but their employees elected to receive higher pay instead.

The majority of employers offering health insurance cover the full premium (61%), while 39% cover a portion. Covering the full premium is an important means of increasing access to health care, as anecdotal evidence indicates that farmworkers are less likely to participate in health insurance plans if they must pay part of the premium out-of-pocket.

Nearly two-thirds (63%) of farms offering health insurance offer that benefit to employees and family members, while 25% offer it to employees only. An additional 12% have mixed plans, generally providing coverage for family members in the case of supervisors and senior employees, with employee-only coverage for others. Among farms providing health insurance, disparities with respect to family coverage based on farm size are fairly pronounced, with 28% of farms with revenues of under \$100,000 offering family coverage, compared with 68% of farms with revenues of \$100,000 or more.

Of employers providing health insurance coverage, 52% of the plans include dental coverage, while 42% include chiropractic care and 30% offer vision benefits.

Half (49%) of respondents reported that new workers are eligible for health insurance within three months of employment. Conversely, 26% reported that eligibility begins after six months of employment and 25% do not provide health insurance until between 8 and 24 months of employment.

Housing Assistance

Along with access to health care, housing is one of the more intractable issues facing agricultural workers, many of whom live in substandard housing and overcrowded conditions, often lacking amenities such as heat, toilets or running water.

Approximately two in five (41%) respondents offer some type of housing assistance. Here too, larger employers (50%) are more likely to offer housing assistance than their smaller counterparts (33%). As seen below, the most commonly offered forms of housing assistance are free housing and assistance paying for utilities. Other forms of housing assistance include subsidized housing, on-farm rental housing, assistance finding housing and assistance providing a down payment or deposit on a house or rental unit.

Exhibit 10. Types of Housing Assistance

Housing Assistance	Percent Providing Housing Assistance	Standard Deviation
Free housing	27%	44%
Free or subsidized utilities	16%	36%
Subsidized housing	10%	30%
On-farm rental housing	10%	28%
Help finding housing	3%	17%
Help with deposit or down payment	3%	16%

Profit-Sharing and Bonuses

Profit-sharing and bonuses can significantly supplement farmworker incomes and serve as important incentives for workers. They also represent important risk-management strategies for growers, allowing them to share profits during good years while containing costs during bad years.

The majority (71%) of respondents offer some form of bonuses and/or profit-sharing to employees. Large farms (76%) are somewhat more likely to offer this benefit than small ones (62%). The respondents cited a range of formal and informal systems for calculating profit-sharing and bonuses. These include fixed amounts once or several times a year, based on a percentage of income, profits or wages, or a set amount (generally 50 cents to one dollar) per hour worked as an incentive for staying through the end of the season. Some respondents cited more formal systems for calculating profit-sharing based on seniority. As one grower explained, his employees receive “2% of gross sales for five years of service and 4% after five years.”

Paid Time Off

The majority (59%) of respondents offer paid time off (PTO) as a benefit, with large farms almost twice as likely to do so (75%) as small ones (38%). The mean number of paid days off is 9.7, with a range of 2 to 30 days. Overall, respondents offered PTO to 84% of their direct-hire employees, with 72% offering that benefit to 100% of their permanent workforce.

Farms with more land in organic/transitional production report significantly more days off than their counterparts, regardless of size. As seen below, small farms with 50% or more land in organic/transitional production offer an average of 11.2 paid days off per year, compared with 8.0 days for their less organic counterparts. Similarly, large farms with more organic land offered 11.1 paid days off per year, compared with 9.4 for their less organic counterparts.

Exhibit 11. Mean Days Paid Time Off by Annual Revenue and Percent of Land in Organic/Transitional Production

Farm Category	Mean Days
Low sales/low organic	8.0
Low sales/high organic	11.2
High sales/low organic	9.4
High sales/high organic	11.1

Retirement Benefits

Approximately one in five (19%) growers offers retirement benefits. Respondents with over \$1 million in annual sales are more than eight times as likely to do so as those reporting under \$100,000 in revenues. While information on employer matches was not solicited, a number of respondents offered that they provide matches of between three and five percent of annual wages or salary.

Exhibit 12. Provision of Retirement Benefits by Annual Revenue

Farm Category	Percent Providing Retirement Benefits
Under \$100,000	5%
\$100,000-500,000	10%
\$500,000-1 million	27%
Over \$1 million	40%

Life Insurance

Slightly over one in ten (13%) respondents offers life insurance. Farms with annual revenues of over \$250,000 are three times more likely to do so (18%) than their smaller counterparts (6%). Nonetheless, a number of respondents, all of whom had annual revenues over \$250,000, noted that life insurance is included in their health insurance plan and is not offered as a separate benefit.

Non-Traditional Benefits

The survey also elicited information about less traditional benefits. As seen in the following exhibit, the most commonly offered benefits include free food from the farm, personal loans, and opportunities for professional development.

Exhibit 13. Non-Traditional Benefits

Non-Traditional Benefits	Percent Providing
Free food from the farm	72%
Personal loans	54%
Professional development opportunities	29%
Transportation assistance	28%
Land to farm or raise animals	25%
Allowing social service providers to offer on-site outreach ¹³	15%

Almost all respondents cited a range of additional non-traditional benefits, including the following:

- Access to farm equipment and tools for personal use
- Flexible work schedules
- Free meals
- English classes

¹³ Numerous respondents noted they have never been contacted by social service providers, but would be happy to provide them with opportunities for on-farm outreach.

- Assistance paying for flights to Mexico
- Parties and celebrations
- Help establishing commercial credit and setting up bank accounts
- Help with children’s educational costs, including college-level
- Intervention with government agencies when needed

Year-Round Employment

Given the seasonal nature of agricultural production, farmworkers exhibit high rates of underemployment. Access to year-round employment is becoming increasingly important as the U.S.-Mexico border becomes more difficult and expensive to cross, and growing numbers of farmworkers remain in the U.S. during the winter when there is less work. In addition to providing farmworkers with higher incomes, providing year-round employment can also benefit growers, as they retain workers during the off-season which can reduce recruitment and training costs.

Nearly three-fourths (73%) of respondents report efforts to provide more year-round or off-season employment for farmworkers.¹⁴ The most common mechanism for doing so includes engaging farmworkers in non-agricultural work on the farm (i.e., repairs, painting, etc.) during the off-season, which was reported by over half (55%) of respondents. One third of respondents (32%) produce winter crops, which keep some or all workers employed year-round, while 20% engage in labor-sharing arrangements with other farms or businesses. An additional 11% of respondents report value-added activities that provide additional employment for farmworkers.

Exhibit 14. Strategies for Providing Year-Round Employment

Strategy	Percent Citing
On-farm repairs, etc.	55%
Winter cropping schemes	32%
Labor sharing	20%
Added value activities	11%

Other means of increasing year-round employment include cross training so that seasonal workers can increase their skill base and be hired in non-agricultural sectors off-season and offering flexible schedules so workers can have multiple jobs, providing them with employment during slow agricultural periods.

Synthesis of Benefits

The following exhibit ranks both traditional and non-traditional benefits based on the frequency of provision. As seen, the most commonly offered benefits across all farms are efforts to provide year round employment, free food from the farm, bonuses and/or profit-sharing, paid time off and personal loans.

¹⁴ The survey did not elicit the percent of workers farms were able to provide off-season employment for. Nonetheless, most farms are able to do so for only a portion of their workforce.

Exhibit 15. Traditional and Non-Traditional Benefits

Traditional and Non-Traditional Benefits	Percent Providing
Year-round employment	73%
Food from the farm	72%
Bonuses and profit-sharing	71%
Paid time off	59%
Personal loans	54%
Housing assistance	41%
Health insurance	36%
Professional development opportunities	29%
Transportation assistance	28%
Land to farm	25%
Retirement plans	19%
Social service outreach on-farm	15%
Life insurance	13%

SUPERVISION AND MANAGEMENT

Formal systems for supervision and management can help promote a mutual understanding of employers' and employees' rights and responsibilities, and can help reduce conflicts and resolve grievances in a timely manner. As seen below, employee manuals exist on nearly half of all farms, followed by policies for discipline and termination and formal grievance procedures. Over two-thirds (69%) of all farms report providing one or more of these documents in Spanish. As seen, there are significant disparities based on farm size, with larger farms having more formal systems in virtually all areas.

Exhibit 16. Supervision and Management

Supervision and Management	Small Farms (<\$250K)	Large Farms (>\$250K)	All Farms
Employee manual	23%	62%	46%
Discipline and termination policies	20%	57%	42%
Formal grievance procedures	16%	41%	34%
Formal job descriptions	15%	39%	28%
Employment contracts or letters of agreement	12%	25%	19%
Policies re: advancement and promotions	10%	21%	16%
Policies in Spanish	49%	74%	69%

Respectful Treatment

Case study research (Strochlic and Hamerschlag 2006) has identified respectful treatment as one of the most highly valued work-related conditions for farmworkers,¹⁵ something many growers are well aware of. As a respondent noted, “Respect is the whole deal, especially in Hispanic culture. It’s worth more than pay. A huge issue to the worker is having a sense that the company cares about them. They feel respected if they have a positive sense of this.”

Of farms with supervisors, 32% report formal guidelines and/or training to ensure respectful treatment of farmworkers.¹⁶ An additional 22% claim to do so informally, as the need arises, while 47% do not do so at all.

Large farms are significantly more likely to provide formal training (42%) than small ones (14%). Nonetheless, when formal and informal training are combined, the percentages are closer, with 51% of small farms addressing the issue formally or informally, compared with 56% of large farms.

Exhibit 17. Respectful Treatment Training and Guidelines by Farm Size

Type of Training or Guidelines	Small Farms (<\$250K)	Large Farms (>\$250K)	All Farms
Formal training/guidelines	37%	14%	22%
Informal training/guidelines	14%	42%	32%
No training/guidelines	49%	44%	47%
Total	100%	100%	100%

OCCUPATIONAL HEALTH AND SAFETY

Agricultural work is one of the most dangerous occupations in the U.S. While lack of exposure to synthetic pesticides is an important advantage of organic farms, numerous health hazards remain, including exposure to toxic organic pesticides, musculoskeletal injuries associated with repetitive stress, stoop labor and heavy lifting, and accidents and injuries from vehicles, heavy machinery or falls from ladders. Higher reliance on handweeding in organic agriculture can also increase the likelihood of musculoskeletal injuries associated with stoop labor.

Good occupational health and safety conditions offer improved health for farmworkers and reduced costs and increased productivity for growers. The respondents reported a range of strategies to reduce accidents and injuries, including efforts to reduce repetitive stress through diverse tasks or frequent breaks, limiting handweeding or stoop labor to a set number of hours and paying by the hour, rather than piece rate to reduce accidents and injuries associated with

¹⁵ The importance of this appears in other sources as well. Bowe (2007) cites the case of a former farmworker, who enjoys his new job. He notes that, “his bosses never tell him to run or hurry up. ‘I work like a normal person and they treat me like a normal person.’ ”

¹⁶ Respondent comments indicate that much of this training focuses on sexual harassment, which may be in response to successful lawsuits against agricultural employers in that regard.

working too quickly. With the exception of bonuses and incentives for remaining accident-free,¹⁷ smaller farms were more likely to engage in these practices than their larger counterparts.

Exhibit 18. Occupational Safety and Health Practices by Farm Size

OSH Practice	Small Farms (<\$250K)	Large Farms (>\$250K)	All Farms
Reducing repetitive motion through diverse tasks or frequent breaks	54%	51%	51%
Limiting handweeding or stoop labor to set number of hours	39%	27%	34%
Hourly pay to reduce speed-related accidents	41%	23%	33%
Bonuses and other incentives for remaining accident-free	5%	17%	13%
Lowered trees (among growers with tree crops only)	62%	41%	52%

The respondents cited a range of other strategies they employ to reduce accidents and injuries. Many stressed the importance of continuous training and proper safety equipment. Several tree-crop farmers noted that they avoid the use of ladders when possible, while some instruct workers not to pick certain fruit if it does not feel safe to do so. Other growers encourage “thoughtful and careful work, rather than speed,” stressing the importance of this in terms of product quality as much as safety. Some respondents mentioned that they allow their employees to take breaks when needed and encourage them to use their discretion and not engage in tasks that do not feel safe. On the other hand, several respondents reported that they “outsource” dangerous work, contracting with farm labor contractors for hazardous tasks.

RECRUITMENT AND RETENTION

Respondents were asked how many of their employees had been working for them for five years and for ten years. The respondents report five-year retention rates of 45% among direct-hire employees, with ten-year retention rates of 26%. As seen in the following exhibit, retention rates do not vary significantly by farm size, with slightly higher five-year retention rates among large farms and virtually identical ten-year retention rates.

Exhibit 19. Five and Ten-Year Retention Rates by Farm Size

Retention Rates	Small Farms (<\$250K)	Large Farms (>\$250K)	All Farms
Five year retention rates	44%	50%	45%
Ten year retention rates	26%	26%	26%

¹⁷ The use of bonuses for remaining accident-free is controversial, since it may encourage under-reporting of accidents and injuries rather than safer behavior.

Given the importance of a skilled and stable farm labor force, it is not surprising to see a high premium on worker retention. Almost all respondents (86%) reported that worker retention is “very important” to the success of their farm operation, while an additional 12% report that it is “somewhat important.” Only 2% of respondents reported that retention is “not very important.”

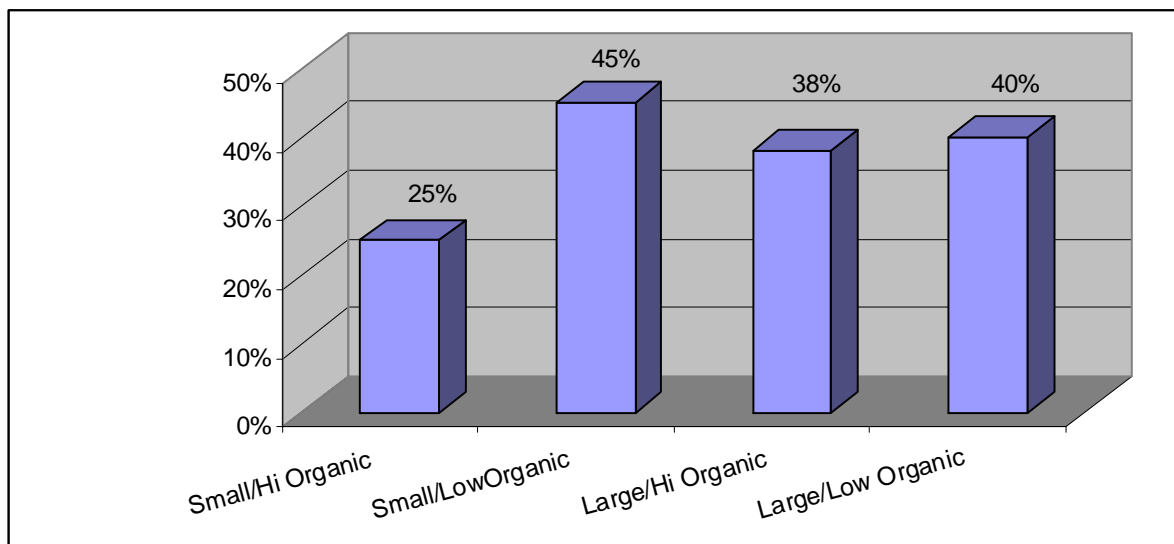
Grower comments attest to the importance of retention on some farms. Several explained that while specific tasks can be learned quickly, it takes much longer to learn about the entire farm operation. As a respondent noted, “to learn a specific task takes about two hours, but to know everything could take months or even years.” Similarly, another grower explained that “workers need to learn the whole farm process and multiple tasks, so it takes a while to get up to speed.”

Labor Shortages

Access to sufficient labor is crucial for the success of most farm operations. That is especially true for organic agriculture, which is generally more labor intensive than conventional agriculture. As a respondent noted, lack of access to sufficient labor is “a major problem. It impacts what and how much we can grow.” Nonetheless, despite relatively high retention rates, 32% of all respondents reported they did not have access to sufficient labor at some point during 2006.

Large farms (40%) were somewhat more likely to report labor shortages than small farms (29%). When viewed by annual revenues (under/over \$250K) and percent of land in organic production, small farms with over 50% of their land in organic/transitional production were least likely to report labor shortages in 2006, while small farms with less than 50% of their land in organic/transitional production were most likely to report that as a problem.

Exhibit 20. Labor Shortages by Farm Size and Percent of Land in Organic/Transitional Production



ATTITUDES

The survey elicited grower feedback about issues ranging from interest in training about farm labor management to participation in “fair labor” labeling schemes.

Information on Farm Labor Management

Over half (58%) of the respondents expressed an interest in receiving information and training about farm labor management. Of those, 22% would find this information very useful, while 36% would find it somewhat useful. Two in five respondents (44%) would not find it very useful. Large farms were nearly twice as likely as small farms to report that they would find this information very useful.

Exhibit 21. Interest in Farm Labor Management Information by Farm Size

Perceived Usefulness	Small Farms (<\$250K)	Large Farms (>\$250K)	All Farms
Very useful	15%	27%	22%
Somewhat useful	35%	34%	36%
Not very useful	50%	39%	44%
Total	100%	100%	100%

The respondents suggested specific topics on which they would find additional information or training useful, including those noted in Exhibit 22.

Exhibit 22. Farm Labor Management Information or Training Needs

Theme	Topics
Employee Relations	<ul style="list-style-type: none"> ▪ Recruiting and hiring employees ▪ How to get feedback from workers more effectively ▪ Writing employee manuals ▪ Communication, listening and decision-making skills ▪ Team management strategies ▪ Motivating employees effectively ▪ Managing cultural differences and relations amongst workers ▪ Training and promoting managers and supervisors ▪ English and Spanish for farm labor and management
Legal Issues	<ul style="list-style-type: none"> ▪ Immigration issues ▪ California labor standards ▪ How to effectively apply for the visa program ▪ Protection from lawsuits, especially false accident claims ▪ Information about changes in labor laws ▪ How to stay in compliance (e.g., making sure employee manual is up to date)
Wages and Benefits	<ul style="list-style-type: none"> ▪ Comparable salary standards ▪ Benefit packages ▪ Knowing what the baseline is for the norm ▪ What other farmers in the area are doing regarding labor management ▪ How to offer contributions to retirement plans ▪ Information regarding low-cost health insurance
Health and Safety	<ul style="list-style-type: none"> ▪ How to encourage and enforce safety standards ▪ Helping workers and their families on issues related to health, nutrition, etc. ▪ Safety information in Spanish ▪ Access websites and sources for OSHA info in one place ▪ Workers compensation and the various classifications that might apply to employees
Farm Labor Contractors	<ul style="list-style-type: none"> ▪ Information re: rankings of farm labor contractors

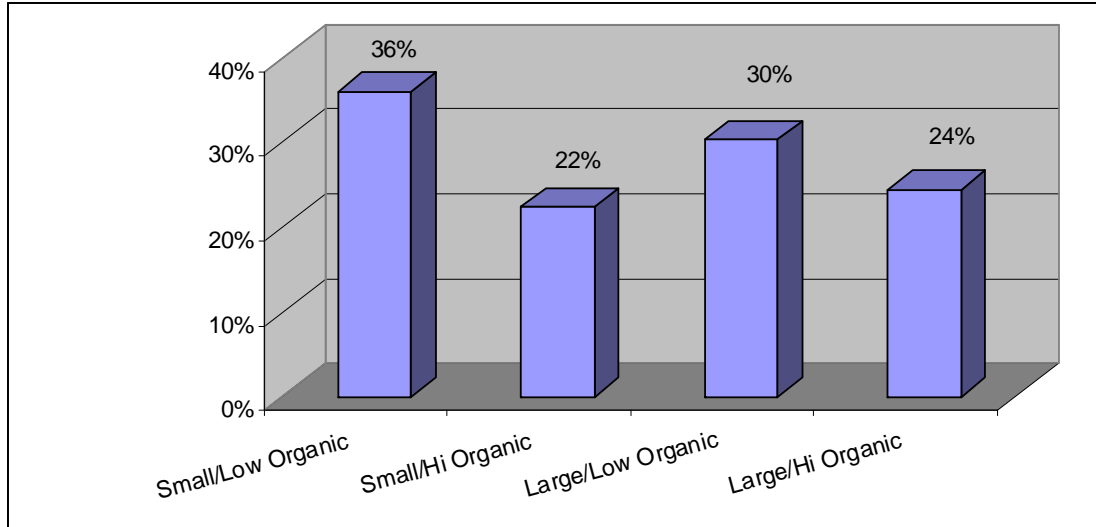
Interest in Fair Labor Certification

Almost two-thirds (59%) of respondents expressed an interest in “fair labor” certification or labeling programs that would provide price premiums and market differentiation for growers offering good farm labor conditions. Twenty-seven percent of respondents were “very interested” in this type of certification while 32% were “somewhat interested.” There were virtually no differences with respect to farm size.

When broken down by farm size and percent of land in organic certification, farms with less than 50% of their land in organic or transitional production – both small and large – were more likely to be “very interested” in this sort of certification. While the survey did not capture reasons for

this, it may be because these farms are interested in some sort of market differentiation, which farms with more land in organic production have through USDA organic certification.

Exhibit 23. Interest in Fair Labor Certification: Percent Responding “Very Interested” by Farm Size and Percent of Land in Organic/Transitional Production



Nearly 70% of respondents interested in a fair labor certification offered an estimate as to how much they might be willing to pay for process. As seen below, the results are fairly evenly spread across the different response categories, with the majority in the \$100-\$250 range.

Some respondents who were unable to cite a specific dollar amount offered that they would likely be willing to pay the equivalent of between half and the full cost of USDA organic certification. One respondent cited a “wait and see” attitude based on consumer demand, noting that the amount he would be willing to pay “depends on how successful the program is. I’d be willing to pay more if the label has more clout, like organic.” Conversely, another respondent noted that “this is important to me. I can’t put a dollar amount to it.”

Exhibit 24. Willingness to Pay for Fair Labor Certification

Amount	Percent
Less than \$50	20%
\$50-\$99	15%
\$100-\$249	28%
\$250-\$499	17%
\$500 or more	20%
Total	100%

A number of respondents expressed high levels of enthusiasm about the potential for this type of certification, from both a business and labor perspective. As one grower noted, “anything that would help business and help provide good labor conditions would be awesome.” Another commented that “it sounds like more paperwork, but if it gives me more money in the future I would consider it.”

Nonetheless, most comments indicated certain levels of skepticism, with a “wait and see” attitude regarding the costs and benefits of this type of label and what it might entail for growers. In addition to concerns about lack of market demand, a number of respondents expressed dismay at the thought of more costs and paperwork. Some also thought an additional label might be confusing for consumers, while others felt their operations would be too small to benefit from this type of label. In contrast, a number of respondents indicated this type of certification would probably not benefit them, since they sell to wholesalers rather than directly to consumers.¹⁸

Attitudes Regarding Farm Labor Management

The survey elicited grower feedback regarding a number of issues related to farm labor management. As the following table indicates, virtually all respondents strongly agree or agree that the success of their farms depend on skilled and dedicated fieldworkers and that providing good condition for farmworkers will result in benefits for their farms. An additional 68% believe that consumer interest in food from farms with good labor conditions is growing. With respect to providing better conditions for fieldworkers, 57% reported that they would like to but feel they cannot afford to do so, while only 16% feel they do not know how to improve farm labor conditions. There were few differences between respondents based on farm size or percent of land in organic production.

Exhibit 25. Attitudes Regarding Farm Labor Management

	Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree
Providing good conditions for my fieldworkers will result in benefits for my farm	63%	35%	1%	1%	0%
The success of my farm depends on skilled and dedicated fieldworkers	63%	33%	1%	3%	0%
Consumer interest in food from farms with good labor conditions is growing	20%	48%	15%	15%	2%
I'd like to provide better conditions for my fieldworkers but can't afford to do so	22%	35%	2%	34%	7%
I'd like to provide better conditions for my fieldworkers but don't know how to do so	1%	15%	4%	61%	19%

¹⁸ Nonetheless, with increasing interest in “supply chain codes of conduct” including labor standards, fair labor certification could benefit growers selling to wholesalers as well.

COMPARISONS WITH CONVENTIONAL AGRICULTURE

The question of how labor conditions on organic farms compare with conventional agriculture is frequently raised. A comparison of findings from this survey with the Farm Employers Labor Service (FELS) annual wage and benefit survey offers some insights in that regard.¹⁹ As seen below, organic growers appear to offer better wages and are more likely to offer profit-sharing/bonuses and food from the farm. In contrast, FELS respondents are more likely to offer health insurance, paid time off, retirement plans and employee manuals. [Note: These comparisons should be interpreted with caution. There is no way of knowing how many FELS survey respondents use organic practices. Also, because the FELS survey is a mail survey, there may be some “self-selection” bias, with growers with better practices more likely to respond.]

Exhibit 26. Comparison of FELS Respondents and Organic Growers: All Respondents

Wages/Benefits	FELS	Organic Growers	How Does Organic Compare?
Hourly wage: Supervisor	\$15.90	\$16.18-\$20.25 ²⁰	+
Hourly wage: Entry level fieldworker ²¹	\$7.91	\$8.20	+
Hourly wage: Fieldworkers with most seniority ²²	\$8.54	\$10.55	+
Health care: Employee only ²³	46%	36%	-
Health care: Family	45%	23%	-
Paid time off	68%	57%	-
Average days PTO	6.1	9.7	+
Profit-sharing/bonus	43%	71%	+
Retirement/pension	27%	19%	-
Housing	28%	28%	↔
Utilities paid	20%	37% ²⁴	+/-
Farm products	16%	72%	+
Employee manual	62% ²⁵	46%	-

¹⁹ FELS conducts an annual wage and benefit survey of California growers in conjunction with University of California Cooperative Extension and several grower organizations, which distribute the survey to their members. The 2006 FELS findings are based on responses from 657 growers throughout California. Collaborating grower organizations include California Association of Winegrape Growers, California Grape and Tree Fruit League, Growers Harvesting Association, Northern California Growers Association, Sonoma County Grape Growers Association, Western Growers Association and Western United Dairymen.

²⁰ Minimum and maximum range. Calculated based on annual salary divided by 2,080 hours per year.

²¹ Corresponds to “General Laborer II” in FELS survey: “Performs tasks requiring only skills readily learned; typically hired seasonally.”

²² Corresponds to “General Laborer I” in FELS survey: “Performs various tasks requiring some manual or mental skill (“semi-skilled”).”

²³ FELS figures reflect benefits “received by more than half of employees without their having to co-pay more than 25% of the cost.” Organic grower survey data reflect all respondents providing this benefit.

²⁴ This figure reflects the percentage of respondents paying utilities among those offering on-farm housing. When calculated as a percentage of all respondents this figure drops to 16%.

²⁵ Based on 2002 data – not available for later years.

FARM LABOR CONDITIONS AND FARM LEVEL BENEFITS

Findings from case study research on farms with a reputation for good labor practices (Strochlic and Hamerschlag 2006) indicate a number of associations between positive farm labor conditions and farm-level benefits. In order to see whether these associations held true on a large sample of farms, we analyzed the data to see if there were any associations between farm labor conditions – in general and with respect to specific benefits – and farm-level benefits including retention, access to sufficient labor, supervision costs and occupational health and safety.

LABOR CONDITIONS AND RETENTION RATES

We examined the relationship between farm labor conditions and worker retention rates, based on an overall “labor conditions” score that was calculated for each farm. The score was calculated based on the number of benefits offered and the relative impact of each benefit on retention.²⁶ As the following exhibit reveals, good farm labor conditions are associated with higher five and ten-year retention rates.

Exhibit 27. Correlations: Farm Labor Conditions “Score” and Five- and Ten-Year Retention Rates

	5-Year Retention Rates	10-Year Retention Rates
Pearson Correlation	.349	.283
Significance (1-tailed)	p < .001	p < .001
N	187	173

As seen in Exhibit 28, the benefits most significantly correlated with improved five-year retention rates are bonuses/profit-sharing; housing assistance; personal loans; food from the farm and paid time off. Formal grievance procedures, employment manuals and job descriptions are also significantly correlated with retention, albeit less so. Of the top five, personal loans and food from the farm are low-cost benefits that can be easily implemented by most farms.²⁷ The other benefits are more costly, depending on how they are implemented. Surprisingly, wages were not at all correlated with retention rates, an area meriting further investigation.

²⁶ The “score” was calculated by identifying a regression coefficient for each benefit, based on its relative impact on five-year retention rates. Benefits with a coefficient of less than 0.1 were excluded from the model. Each benefit (coded as: 0=benefit not provided, 1=benefit provided.) was then multiplied by its respective coefficient. The sums of the products were then added to arrive at a total score for each farm.

²⁷ Some growers have expressed problems associated with personal loans. That is a benefit that should therefore be considered carefully.

Exhibit 28. Individual Farm Labor Conditions and Five-Year Retention Rates

Benefit	5-Year Retention Rates		Significance	Cost to Farm
	Benefit Provided	Benefit Not Provided		
Bonuses/profit-sharing	49%	34%	.005	Medium
Housing assistance	52%	38%	.005	Medium-High
Personal loans	50%	37%	.006	Low
Food from the farm	48%	35%	.013	Low
Paid time off	50%	37%	.016	Medium-High
Formal grievance procedures	50%	41%	.052	Low
Employment manuals	49%	40%	.073	Low
Job descriptions	51%	42%	.089	Low

While farms offering health insurance reported higher retention rates than their counterparts (48% vs. 42%), the association was not statistically significant (at $p < .10$). However, the percent of employees receiving health insurance was significantly associated with higher five-year retention rates ($r = .280$, $p < .05$).

Provision of full vs. partial health insurance was also significantly associated with retention rates. Farms paying the full premium reported retention rates of 52%, compared with 41% for farms covering only a portion of the premium ($p = .10$). There were no differences between farms providing family vs. employee-only coverage.

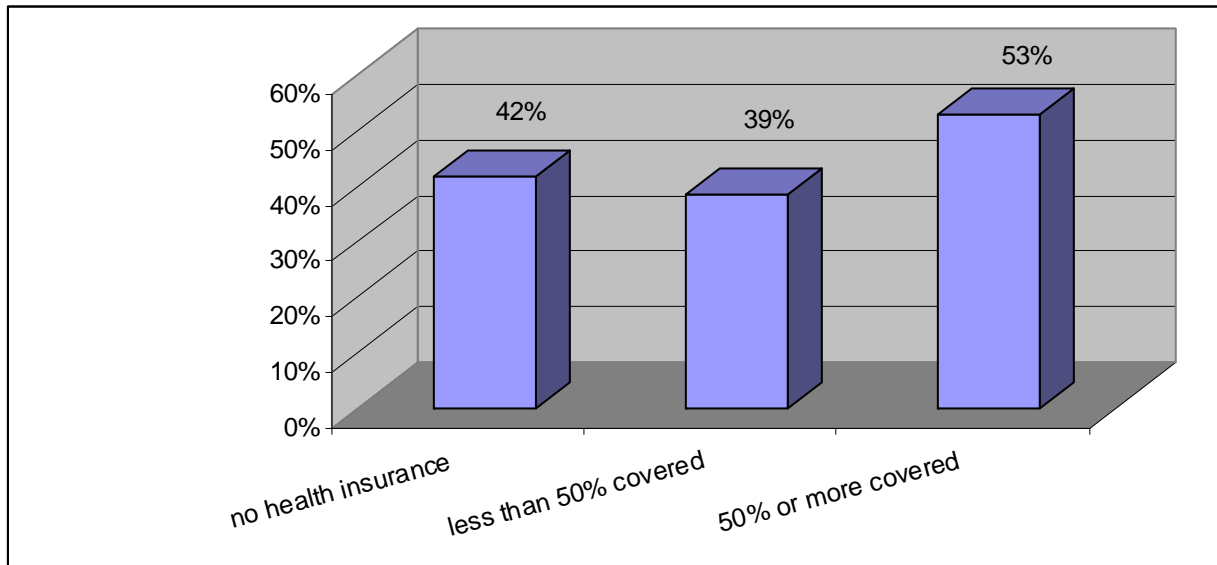
Exhibit 29. Health Insurance and Five-Year Retention Rates

Benefit	5-Year Retention Rates		Significance
	Benefit Provided	Benefit Not Provided	
Health insurance offered	48%	42%	NS
Full premium covered	52%	40%	.10
Family coverage offered	47%	48%	NS

While the provision of health insurance per se was not significantly associated with higher retention rates, disparities between the percent of permanent employees receiving health insurance were significantly associated with retention. As seen in Exhibit 30, retention rates on farms offering health insurance to less than 50% of employees are in fact *lower* than on farms with no health insurance at all.²⁸ This may be because disparities in the provision of health insurance are more demoralizing to employees than the absence of that benefit altogether.

²⁸ Differences in retention between farms with no health insurance and those offering insurance to less than 50% of permanent employees are not statistically significant. Differences between “no insurance” and “over 50%” are significant at the $p < .1$ level. Differences between farms offering health insurance to “less than 50%” and “50% or more” are significant at the $p < .05$ level.

Exhibit 30. Health Insurance Coverage for Permanent Employees and Five-Year Retention Rates



Lost Person-Days to Accidents and Injuries

As the following exhibit reveals, with the exception of limiting handweeding, the implementation of occupational safety and health practices appears to be associated with a lower rate of reported person-days lost to accidents and injuries among direct-hire workers. Lowering trees appears to result in the largest reduction in accidents and injuries (on farms with tree crops), followed by bonuses for remaining accident-free and hourly pay to reduce speed-related accidents and injuries. Nonetheless, caution should be used with respect to interpreting findings regarding bonuses for remaining accident-free, as these types of incentive systems can reduce the extent to which workers *report* accidents and injuries, rather than reducing accidents and injuries themselves.

Exhibit 31. Lost Days per Direct-Hire Employee by Occupational Safety and Health (OSH) Practice

OSH Practice	Implement Practice	Do Not Implement Practice	Difference in Lost Person-Days
Bonuses and other incentives for remaining accident-free	0.10***	0.45	-0.35
Hourly pay to reduce speed-related accidents	0.21**	0.49	-0.28
Lowered trees (farms with tree crops)	0.22*	0.75	-0.53
Reduced repetitive motion through diverse tasks or frequent breaks	0.36	0.46	-0.10
Limiting handweeding or stoop labor to set number of hours	0.49	0.38	0.11

*** p < .01
 ** p < .05
 * p < .1

Other Associations

The findings do not support hypotheses regarding associations between positive farm labor conditions lower supervisory costs or access to sufficient labor.

CONCLUSIONS

The survey provides an overview of the state of farm labor conditions in organic agriculture in California. As efforts to promote a more socially sustainable food system grow, the findings also provide important baseline information with which to measure progress over time.

The findings indicate a number of ways in which organic farms are working to provide just farm labor conditions, while identifying areas for improvement. As other research has found, the amount of land in organic production is associated with higher wages. Farms with 50% or more of land in organic production report mean entry-level farmworker wages of \$8.54 per hour, compared with \$7.37 per hour among farms with less than half their land in organic/transitional production, a difference of \$1.17 per hour. While still not a living wage, this difference can translate to an additional \$2,000 per year, or approximately 20% of a typical farmworker's annual income. The respondents also report a wide range of traditional and non-traditional benefits. As in conventional agriculture, larger farms with more resources generally offer more and more extensive benefits.

As in other industries, the provision of benefits is associated with higher retention rates. Of the five benefits most highly correlated with retention – bonuses/profit-sharing, housing assistance, personal loans, food from the farm and paid time off – food from the farm and personal loans are low cost benefits that can easily be implemented by most growers, while the others are of medium to high cost, depending on their implementation.

High levels of interest in fair labor certification indicate some potential for market-based mechanisms to promote improved farm labor conditions. These efforts can reward farmers for doing good while providing them with a fair price that will make it possible for them to do so. At the same time, however, changes in public policy are necessary to promote a truly sustainable food system. Immigration policy allowing farmworkers to live and work in the US legally is an essential first step. At the same time, public policies providing farmworkers with access to more expensive benefits, such as health insurance and housing are vital. These policies are also vital in “leveling the playing field” between small and large farms.

REFERENCES CITED

- Allen, P., D. Van Dusen, J. Lundy and S. Gliessman. (1991). "Integrating Social, Environmental, and Economic Issues in Sustainable Agriculture." *American Journal of Alternative Agriculture* 6(1): 34-39.
- Allen, P. (1994). "The Human Face of Sustainable Agriculture: Adding People to the Environmental Agenda." *Issue Paper #4*. Santa Cruz, CA: Center for Agroecology and Sustainable Food Systems. <http://zzyx.ucsc.edu/casfs/issuepapers/issuepaper4.html>.
- Billikopf, G. E. (2003). *Labor Management in Agriculture: Cultivating Personnel Productivity*. University of California – Agriculture and Natural Resources. Agricultural Issues Center. AMR Publication 3417.
- Bitsch, V. (2002). "Housing, other non-monetary benefits retain employees." *Vegetable Growers News* 36 (1):26-27.
- Bitsch, V., M. Hogberg. (2005). "Exploring Horticultural Employees' Attitudes Toward Their Jobs: A Qualitative Analysis Based on Herzberg's Theory of Job Satisfaction." *Journal of Agricultural and Applied Economics* 37:659-71.
- Brown, S. (2003). "Social Accountability in Sustainable Agriculture." Santa Cruz, CA: California Certified Organic Farmers Newsletter. <http://ccof.org/magazine/03sasa.pdf>.
- California Sustainable Agriculture Working Group. (2004). "Draft Labor Principles." Santa Cruz, CA: California Sustainable Agriculture Working Group.
- Combs, J., Y. Liu, M. Hall, A.D. Ketchen. (2006). "How much do high-performance work practices matter? A meta-analysis of their effects on organizational performance." *Personnel Psychology* 59 (3):501-528
- Farm Employers Labor Service (2006). "2006 Wage and Benefit Survey." Sacramento, CA: Farm Employers Labor Service.
- Fogleman, S.L, R.A. Milligan, T.R. Maloney, W.A. Knoblauch. (1999). "Employee Compensation and Satisfaction on Dairy Farms in the Northeast." Presented at the American Agricultural Economics Association Annual Meeting, August 8-11, Nashville, Tennessee.
- Gabbard, S., J.M. Perloff. (1997). "The Effects of Pay and Work Conditions on Farmworker Retention." *Industrial Relations* 36(4):474-488.
- Guthman, J. (2004). *Agrarian Dreams: The Paradox of Organic Farming in California*. Berkeley, California: University of California Press.

- Henderson, E., R. Mandelbaum, O. Mendieta and M. Sligh (2003). "Toward Social Justice and Economic Equity in the Food System: A Call for Social Stewardship Standards in Sustainable and Organic Agriculture." Pittsboro, NC: Rural Advancement Foundation International. http://www.rafiusa.org/pubs/SocialJustice_final.pdf.
- Huselid, M.A. (1995). "The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance." *Academy of Management Journal* 38(3):635-672.
- Huselid, M.A., S.E. Jackson, R.S. Shuler. (1997). "Technical and Strategic Human Resource Management Effectiveness as Determinants to Firm Performance." *Academy of Management Journal* 40(1):171-188.
- Inouye, J. and K.D. Warner. (2001). "Plowing Ahead: Working Social Concerns into the Sustainable Agriculture Movement." *California Sustainable Agriculture Working Group White Paper*. Santa Cruz, CA: California Sustainable Agriculture Working Group.
- International Federation of Organic Agriculture Movements. (IFOAM). "IFOAM Basic Standards for Organic Production and Processing, Chapter 8: Social Justice." http://www.ifoam.org/organic_facts/justice/pdfs/IBS_chapter_8.pdf.
- Jaffee, D. (2000). "Behind the Organic Tomato: Farm Workers and Labor Conditions on Four Northern California Organic Farms." Unpublished manuscript.
- Koch, M. J., R.G. McGrath. (1996). "Improving Labor Productivity: Human Resource Management Policies do Matter." *Strategic Management Journal* 17(5):335-354.
- Mascarenhas, M. (1997). "Just Food: Organic Farming in Santa Cruz County." Master's Thesis, University of California, Los Angeles.
- Mello, F. (2006). "Hard Labor." *The Nation*, September 11.
- Pfeffer, J. (1998). *The Human Equation: Building Profits by Putting People First*. Boston, MA: Harvard Business School Press.
- Rosenberg, H.R., R. Carkner, J.P. Hewlett, L. Owen, T. Teegerstrom, J.E. Tranel, and R.R. Weigel. (2002). *Ag Help Wanted: Guidelines for Managing Agricultural Labor*. Western Farm Management Extension Committee.
- Shreck, Amy, Christy Getz and Gail Feenstra. (2006). "Social sustainability, farm labor, and organic agriculture: Findings from an exploratory analysis." *Agriculture and Human Values* 23:4.
- Soil Association. (2006). "Organic Works: Providing More Jobs Through Organic Farming and Local Food Supply." Bristol, UK: Author.

- Sierra, Luis, Karen Klonsky, Ron Strohlic and Sonja Brodt. (2008). "Factors Associated with Deregistration Among Organic Farmers in California." Davis, CA: California Institute for Rural Studies.
- Strohlic, R. and K. Hamerschlag. (2006). "Best Farm Labor Practices on Twelve Farms: Toward a More Sustainable Food System." Davis, CA: California Institute for Rural Studies.
- Thach, L., T. Halhoul, and J. Robinson. (2005). "Wine Business Management Practices to Promote Productivity & Profitability." *International Journal of Wine Marketing* 17(1).
- Ulrich, T. (2006). "Replanting People: Immigrant Workers Earn a Piece of an Organic Farm." *Orion* November/December 2006.
- Villarejo, D., D. Lighthall, D. Williams, D. A. Souter, R. Mines, B. Bade, S. Samuels and S.A. McCurdy. (2000). "Suffering in Silence: A Report on the Health of California's Agricultural Workers." Davis, CA: California Institute for Rural Studies.
- Wagar, T. H. (1998). "Determinants of human resource management practices in Small firms: some evidence from Atlantic Canada." *Journal of Small Business Management* 36(2).