Workplace Preference among Farmworkers: Piece Rate, Pesticides, and the Perspective of Fruit and Vegetable Harvesters

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Repository Citation
Workplace Preference among Farmworkers: Piece Rate, Pesticides, and the Perspective of Fruit and Vegetable Harvesters

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Abstract Farmworkers in US agriculture encounter structural vulnerability. They are economic refugees, fleeing starvation. After risking their lives to cross the border and find work, they continue to be marginalized in society, and constantly fear deportation. Although farmwork is hazardous, it is necessary to be able to support themselves and their families. Research has found that although farmworkers are aware of the health side effects that result from exposure to pesticides, they continue to labor in conventional fields because not working is viewed as a larger risk. This study adds to that literature by asking farmworkers about preference for working in organic or conventional production. Even when organic is an option, farmworkers prefer conventional production when they earn more money in conventional. Because of their extreme economic vulnerability, the possibility of earning less income to work in a safer environment is viewed as undesirable. Rather than changing wage structure to incentivize working in organic agriculture, what is needed, in addition to more political protection for farmworkers, is increased regulation of pesticides. All agricultural workplaces should be made less toxic.

Introduction

Agricultural laborers in the United States are predominately foreign-born and undocumented; they are economic refugees, escaping starvation (Holmes 2013; López 2007; Stephen 2007). According to Holmes (2013:21), “it would be riskier to stay” in their home communities in Mexico. Crossing the border, albeit dangerous, is “necessary to survive, to make life less risky.” Farmworkers are forced to migrate to survive. Yet, their lives in the U.S. are marked by political and economic marginalization. Inadequate remuneration means farmworkers barely earn enough money to get by (Holmes 2013; López 2007; Maxwell et al. 2015). They face food and housing insecurity, and many of their basic needs are not met (Maxwell et al. 2015). On top of that, fear of deportation deters workers from seeking assistance or speaking out against mistreatment (Méndez, Flores-Haro, and Zucker 2020). Farmworkers are thus incredibly “structurally vulnerable” (Guzmán and Medeiros 2020; Holmes 2013; Saxton 2015).
In this context of subordination, some scholars identify small-scale on-farm labor agency (Guthman 2017; Wells 1996). According to Wells (1996:68), shifts in the supply of labor “affect workers’ leverage in the labor market.” As labor surpluses diminish, the balance of power between growers and workers changes, and the relative leverage of workers increases (Wells 1996). Although conditions remain “grueling” and pay rates remain low, Guthman (2017:24) asserts that the current labor scarcity gives workers a “modicum of leverage.” They employ weapons of the weak by leaving one farm for another if they hear about better yields. Workers will inspect fields, looking for healthy plants and abundant output, before deciding which farm they want to work at (Guthman 2017). Growers respond to farmworker preferences in times of labor shortage by creating field conditions where workers can maximize their still limited pay (Guthman 2017; Wells 1996).

Given the current agricultural labor shortage, where growers compete to attract experienced resident workers, it is increasingly important to understand farmworker perspectives on workplace conditions. This paper examines how farmworkers justify their preference for working on conventional or organic agribusiness fields. Research took place in the central coast of California, where agricultural laborers harvest row crops. As consumer demand rises for organic fruits and vegetables, agribusiness companies convert parcels of land to certified organic production. These workplace places are less environmentally hazardous, but do not necessarily pay more, or even the same amount, as their conventional counterparts (Soper 2020).

Previous research has found that “farmworkers perceive forgoing wages as a bigger risk to their well-being than pesticide exposure” (Barbour and Guthman 2018:341). Farmworkers continue working in toxic work sites, despite knowledge of exposure, because the alternative is no work, and they must work to survive. But what if another, less toxic work site were an option? Do farmworkers continue to prioritize livelihood over health even when a safer alternative is available to them? I found that fruit and vegetable harvesters prefer to work in conventional production if they earn more money in conventional than they do in organic.

This research is based on interviews with 65 farmworkers in Oxnard, who harvest strawberries, raspberries, and leafy green vegetables. I sought out farmworkers who have experience in organic to see how organic compares to conventional from their point of view. Through asking questions about whether they prefer organic or conventional work places and why, I was able to see how economic considerations factored in much more than exposure to pesticides. I found that their preference for one type of production over the other was explained in terms of
which offered the most income. Rather than desiring to work in organic fields because of reduced exposure to toxins, they desired to work in the fields that generated the highest pay, and for most respondents, due to piece rate wage structure, that meant conventional.

During peak season, harvesters are able to earn more than the minimum hourly wage by being paid per piece. They work as fast as they can to pick as many boxes as they can, and they earn more money the more boxes they pick. Negotiating piece rate prices is a longstanding form of workplace resistance (Holmes 2013; Wells 1996). Workers prefer piece rates over hourly wages because they can make more money in less time (Guthman 2017; Soper 2020). However, scholars have critiqued piece rate wage structure for incentivizing farmworkers to push themselves to the limit, leading to injury, illness, and chronic pain (Holmes 2013; Horton 2016). Horton (2016:356) warns that “the logics of piece-rate compensation encourage workers to sacrifice their bodies and health for the modicum of greater financial stability.”

Conventional fields sprayed with agrochemicals offer higher income because harvesters can pick more boxes than in organic fields with lower yields. That farmworkers would rather earn more money than work in a safer environment highlights the extreme economic vulnerability they face. It is not a matter of working or not working, as Barbour and Guthman (2018) point out. They found that farmworkers, despite understanding the dangers of pesticide exposure, continued to work because they viewed forgoing wages as a bigger risk. In this study, rather than forgoing income altogether, the option of making less money in a safer workplace was still viewed as less desirable than making more money in a hazardous workplace.

**Farmworker Vulnerability**

Scholarship on farmworkers emphasizes the structural vulnerability that this group faces, and the resulting structural and symbolic violence. Saxton (2015:180) refers to farmworkers as an “especially structurally vulnerable group” which experiences “many forms of social and environmental suffering.” Guzmán and Medeiros (2020:131) define structural vulnerability as the interaction of various forms of social inequalities that render certain populations vulnerable to “embodied suffering.” The bodily harm that is caused by one’s position in the social hierarchy is referred to by Holmes (2013:43) as “structural violence.”

Undocumented indigenous farmworkers are the most structurally vulnerable. Their position at the bottom of the racial ethnic hierarchy in Mexico follows them to the U.S., and is exacerbated by lack of citizenship status. In U.S. agriculture, an ethnic-citizenship power hierarchy
produces a corresponding “hierarchy of suffering” (Holmes 2013:31). As Barbour and Guthman (2018:335) assert, “the distribution of occupational harm falls heaviest on unauthorized, indigenous workers.”

There are many different occupational hazards associated with farmwork, especially harvesting row crops. Farmworkers must bend over all day, leading to back, hip, knee, and neck pain (Holmes 2013). In addition to bodily aches, moving quickly in a repetitive motion can lead to injury. They work “as hard and fast as they can, arms flying in the air as they kneel in the dirt” (Holmes 2013:73). They run through the fields to get their boxes of produce inspected and tabulated (Guthman 2017). According to Holmes (2013) and Horton’s (2016) ethnographies, many farmworkers forgo breaks, not taking the time to rest or re-hydrate, in order to pick as much as possible. This is especially dangerous in the summer, when heat stroke is a major risk (Horton 2016).

Labor abuses and masculine norms exacerbate risk of bodily harm. Farmworkers complain of foreman not letting them rest when they are visibly exhausted. Supervisors discourage water and bathroom breaks by equating them with weakness and effeminacy (Horton 2016). Yet, workers fear contacting local authorities to report labor abuses because it could result in their deportation (Horton 2016). Indigenous farmworkers are even less likely to file complaints about workplace safety because of additional language barriers (Méndez et al. 2020). This is especially troubling considering the fact that they face racial discrimination and mistreatment from mestizo co-workers (Holmes 2013; Méndez et al. 2020; Stephen 2007). Workplace concerns also include lack of sanitation and potable water, slipping, machinery-based injuries, sexual harassment, and wage theft (Farquhar et al. 2008).

Farmworkers experience many political, economic, and occupational hardships. They confront the threat of deportation, food and housing insecurity, and workplace injury. Pesticide exposure is but one of many workplace hazards, and one of many risks, alongside hunger and deportation. As Saxton (2015:167) explains, “Pesticide exposure is part of farmworkers’ overall structural vulnerability.”

**Exposure to Pesticides**

Farmworker exposure to pesticides can be either acute or chronic. Acute exposure takes place when growers spray while workers are harvesting, or when pesticides drift from neighboring fields (Harrison 2011). Chronic toxicity includes repeatedly coming into contact with low-levels of exposure, such as pesticide residues in the soil (Arcury, Quandt, and Russell 2002). For row crops, the soil is fumigated heavily before planting to get rid of insects, nematodes, pathogens, and fungi that could
cause the plant to wilt and die (Guthman 2017). When farmworkers harvest crops, their hands and clothes come into contact with the fumigated soil. Exposure to agrochemicals leads to detrimental human health side-effects, including cancer, birth defects, neurological disorders, asthma, skin rashes, nausea, dizziness, and headaches (Arcury et al. 2002; Galt 2013; Harrison 2011; López 2007; Salazar et al. 2004; Schwartz et al. 2015). Pesticide exposure is also linked to diabetes (Horton 2016; Saxton 2015).1

Not only does pesticide exposure cause bodily harm, but this structural violence is naturalized, leading to symbolic violence. Farmworkers are viewed as less worthy of protection. As Barbour and Guthman (2018:335) state, “it is not only immigration policy and the precarious legal status of farmworkers that make for their vulnerability to pesticide exposure, but the racist logics embedded in capitalism itself that renders certain bodies vulnerable and disposable.” As a result, the health risks associated with working in conventional fields are contested and denied.

Saxton (2015) refers to this as toxic ignorance. “The lifetime consequences of routine low-dose pesticide exposure are often written off as inconsequential by agribusiness companies, the state, insurance companies, health care providers, and in some cases, exposed farmworkers themselves” (13), she states. Among the farmworkers in her study, some spoke out against pesticide exposure, and some accepted it as part of the job. Scholars have found that structurally vulnerable workers encounter occupational hazards and general suffering as a fact of life (Saxton 2015).

Holmes (2013) also points to the internalization of symbolic violence, as farmworkers perceive themselves as belonging in their subordinate social position. His respondents defected blame away from farm owners through a discourse of ethnic pride. They pointed to “bodily differences along ethnoracial lines,” telling Holmes that pesticides only affect delicate and weak bodies while their indigenous bodies are strong and can endure exposure. This discourse perpetuates the perception that certain ethnic bodies belong in certain occupational positions (182).

Both Holmes (2013) and Saxton (2015) point to the fact that exposure to hazards is normalized by state and industry representatives, as well as by some farmworkers themselves. Other scholars have examined this question of farmworker perception of pesticide risk and find that, for the most part, farmworkers are aware of dangers; yet, knowledge of harm does not correspond with use of safety measures.

1This linkage between pesticides and diabetes problematizes nutrition education as a solution to high rates of diabetes among farmworkers (Minkoff-Zern 2014).
Farmworker Perception of Risk

The question of whether farmworkers are aware of the dangers of pesticide exposure has been a target of scholarly analysis. Some research has found that farmworkers understand the acute effects of exposure but not the long-term residual effects (Quandt et al. 1998). Indeed, McCauley et al. (2002) assert that workplace training materials are inadequate because they mostly warn of pesticide exposure in terms of immediate, direct contact, such as what to do if a pesticide is splashed in the eye, with little mention of pesticide residues.

The literature finds that existing pesticide training is inadequate (Arcury et al. 2002; Farquhar et al. 2008; Holmes 2013; McCauley et al. 2002; Salazar et al. 2004; Saxton 2015). Holmes explains that the only education about pesticides they received “came from a short warning cassette tape in monotone Spanish played inaudibly in one corner of a huge warehouse full of over one hundred workers and their children during one of the picker orientations” (2013:173). Not surprisingly, language barriers have been found to be key obstacles to effective training (Arcury, Quandt, and McCauley 2000). During focus groups, Spanish-speakers mentioned difficulty understanding training videos and pamphlets that were provided only in English (Farquhar et al. 2008), and indigenous farmworkers reported that occupational safety information is rarely provided in indigenous languages (Farquhar et al. 2008; McCauley et al. 2002).

Studies that use a pesticide knowledge test have found that indigenous language farmworkers score lower than Spanish-speaking farmworkers (McCauley et al. 2002). According to survey results in McCauley et al. (2002:402), while only 45 percent of farmworker respondents reported that they have become sick from being around pesticides, 79 percent of farmworkers reported a belief that pesticides cause health problems. Similarly, Arcury et al. (2002:236) found that only 20–30 percent of the farmworkers did not perceive pesticides to be “enough of a risk to themselves, other farmworkers, or their children to cause concern.”

While McCauley et al. (2002) and Arcury et al. (2002) found overall knowledge of risk, Farquhar et al. (2008) and Cabrera and Leckie (2009) found that farmworker respondents understood many of the short-term and long-term health consequences of exposure. Farquhar et al. (2008) found that fear over acute and chronic effects of pesticides on the body was expressed in every focus group; not only did workers discuss suffering from headaches, stomach aches, swollen and achy joints, runny noses, and fevers, they also expressed concerns about developing cancer from chronic pesticide exposure over time.
The scholarship on farmworker awareness of pesticide risk emphasizes that knowledge of harm does not correspond with use of protective measures. Arcury et al. (1999) found inadequate knowledge among farmworkers about ways in which they could be exposed to pesticides, and correspondingly found that farmworkers were not taking steps to protect themselves from pesticide exposure. Elmore and Arcury (2001) found that while most farmworkers knew pesticides could be harmful, they varied in degree of knowledge regarding ways to reduce exposure through the use of safety practices. Arcury et al. (2002) found that perception of health risk is not associated with actual safety behaviors. They conclude, “Thus, knowing one is exposed to a health hazard is important for the perception of risk, but it is not sufficient for changing behavior” (Arcury et al. 2002:238).

In this literature, self-protective behavior among farmworkers is measured as: wearing a long sleeve shirt and hat to work, washing hands while at work before eating and before going to the bathroom, changing clothes before coming home from work, bathing as soon as they get home, washing work clothes separate from other clothes, and wearing clean clothes to work every day (Arcury et al. 2002; McCauley et al. 2002; Cabrera and Leckie 2009). Cabrera and Leckie (2009) also assert that awareness of risk does not translate into self-protective behaviors. They explain: “Even though the farmworkers interviewed had high perceptions of pesticide exposure risk and understood potential health consequences, they still participated in risky pesticide-related activities” (Cabrera and Leckie 2009:267) by wearing their work clothes home from the fields, not washing their clothes after every use, and not washing them separate from non-work clothes.

In this body of literature, the only study that contextualizes risky behavior is Salazar et al. (2004). Similar to other studies, Salazar et al. (2004) found that although there was much awareness of the dangers of pesticides, farmworkers were still not taking self-protective measures. Yet, they also explain respondents eat lunch in the fields where they work without washing hands first, because “you are so hungry, you don’t have time to wash your hands first”; plus, “the boss gets mad if he sees you leave the field to wash hands”; and additionally, there is not enough clean water (Salazar et al. 2004). Knowledge about the importance of washing hands before eating is futile if they are not provided with a sink station in the field or time to wash hands before lunch.

Galt (2013) also highlights the wide gap between knowledge of pesticide risk and use of protective measures. During his fieldwork in Costa Rica, he found that although his respondents were concerned with the impact of pesticides, it was common to fumigate without gloves or
protective gear. They knew the bodily harms that pesticides caused, but also knew that wearing protective gear slowed them down.

Similarly, strawberry harvesters do not wear gloves if it slows them down (Barbour and Guthman 2018). According to Holmes’ observations, “Strawberry pickers worked everyday without gloves as the visible pesticide residue dissolved in the mixture of strawberry juice that stained their hands dark maroon” (2013:172). Many would refrain from eating or drinking before work to avoid taking the time to go to the bathroom. “If they ate anything, they ate it in the fields while picking, without washing their hands so as not to take time away from work,” explains Holmes (2013:172).

Farquhar et al. (2008) also found that farmworker respondents were aware of the risks of exposure, but felt powerless to walk away because of the necessity to work. One respondent noted: “With time when one works that much with pesticides or fertilizer, it affects us...[but] it’s hard to object because of the need that one has to work and be able to earn a little money. I’m not sure what type of sickness may come in the future...it’s just the need is what makes us work and earn money” (276). The authors therefore conclude that “the need to earn money forces them to work in dangerous conditions, and this imperative frequently supersedes health concerns” (Farquhar et al. 2008:276).

Barbour and Guthman (2018) also found that farmworkers recognize the potential dangers of coming into contact with agrochemicals, yet perceive not working “as a greater threat to life than the daily injustice of pesticide exposure” (340). Respondents in their study asserted that “although we know the risks, we have to work” and “we all know we are being exposed, but there’s nothing we can do about it” (340). Without income, explain Barbour and Guthman (2018:340), “it is impossible to maintain a life in which one may cultivate ‘health.’” Therefore, rather than prioritizing livelihood over health, they really have no choice. Farmworkers must work to be able to live.

These important studies explain why farmworkers continue to work in agriculture despite the risks of pesticide exposure. The alternative of not working is seen as a bigger risk. Yet these studies present the only alternative to working in conventional agriculture as forgoing work altogether. My study adds organic production to the equation. I asked farmworkers who have experience working in both organic and conventional production which one they prefer. Despite having the option to work in organic, most of my respondents stated a preference for conventional because they earn more money in conventional. Therefore, it is not just that the economic and political vulnerabilities that farmworkers face force them to work in toxic environments because otherwise they would have no
income. When the opportunity to work for less income in a safer environment is available, harvesters would rather maximize income even if that means sacrificing health. They are so marginalized that they cannot afford to earn less by working in organic.

Methods
Data was collected for this study through face-to-face audio-recorded interviews with 65 farmworkers in Oxnard, California. These interviews took place in residential neighborhoods, not on farms, so that workers would feel more comfortable talking about exposure and remuneration. I sampled five neighborhoods in Oxnard known to house farmworkers and approached people walking down the street, asking if they work in agriculture and if they have experience harvesting both organic and conventional.

While organic production tends to be associated with small-scale, diversified, direct-to-consumer, “movement farmers,” supermarket organic is increasingly grown by large agribusiness firms who otherwise specialize in conventional production (Obach 2017). This creates a landscape in which one firm hires a workforce to harvest both organic and conventional fields, creating a pool of farmworkers who have experience in both types of production. As I approached farmworkers, asking if they had experience in both, I passed up many with experience in conventional but not organic, and did not come across any farmworkers with experience in organic but not conventional.

Other studies on farmworkers in this journal have focused on citizen immigrant farmworkers and temporary migrant guest workers (Preibisch and Otero 2014), along with undocumented male farmworkers away from their families (Sexsmith 2019). Research on farmworkers also tends to spotlight those living on-farm at labor camps (Holmes 2013; Mares 2019; Guzmán and Medeiros 2020) and the migratory nature of seasonal work. The farmworkers in this study differ from previous groups because they are unauthorized long-term residents who live in town with their families. Rather than following the harvest up the California coast, most remain stationary in Oxnard, where their children go to school.

Between September 2017 and April 2019, I interviewed 65 berry and leafy green harvesters. During the first phase of this study, I sought out strawberry harvesters. During the second phase, I expanded to raspberries and leafy green vegetables. In total, 42 percent of respondents were strawberry harvesters, 31 percent were raspberry harvesters, and

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2Because of documentation status, data were anonymous from the start. I did not ask for identifiable information, such as address, employer, or name.
27 percent were vegetable harvesters. While celery, bell pepper, and cabbage are also grown in the area, by vegetable harvester, I am referring to leafy green vegetables such as kale, chard, cilantro, parsley, and bok choy. These are often grown together in the same fields, while celery, bell pepper, and cabbage are grown as a monocrop with a more specialized workforce of older, more established, mestizo men. On the other hand, berry and leafy green production is more populated with female and indigenous recent arrivals (Guthman 2017). These delicate crops are especially labor-intensive and chemical-intensive, involving the “heavy use of organophosphate pesticides” (McCauley et al. 2002:399).

Overall, my sample consisted of 55 percent men and 45 percent women. Ages ranged from 21 to 65 years old. Most respondents (45 percent) were in their 30s, while 24 percent were in their 40s, 15 percent were in their 50s, 14 percent were in their 20s, and 2 percent were in their 60s. Most respondents (47 percent) were from the state of Oaxaca, Mexico,3 followed by 23 percent from Michoacán, and 16 percent from Guerrero. The remaining respondents were from Puebla (3 percent), Hidalgo (3 percent), Jalisco (3 percent), and Guanajuato, Mexico (3 percent), with one respondent (2 percent) from Guatemala. Even though many respondents were bilingual Mixteco speakers, all interviews were conducted in Spanish.

I followed a semi-structured interview guide, asking how working in organic compares to working in conventional, which one they prefer and why, if they ever get sick after working in conventional, and if they think pesticides are harmful.4 Interviews were the appropriate method to use for this study because they allowed me to uncover farmworker rationale behind workplace preference. Through asking open-ended questions, respondents were able to explain, in their own terms, what considerations matter to them. Oral questionnaires would have allowed me to generalize more broadly regarding preference, but would not have been able to uncover why. This research is not meant to be representative of all strawberry, raspberry, or vegetable harvesters in Oxnard; however, among the 65 farmworkers in this sample, interesting patterns did emerge.

3This coincides with estimates that 46 percent of farmworkers on the central coast of California are indigenous (Médnez et al. 2020).

4While I asked broadly about concern over pesticide exposure, and perception of the health risks associated with working in conventional fields, I did not distinguish between short-term and long-term effects. Although this study did not ask about the difference between acute and chronic exposure, or how they protect themselves through safety behaviors, those would be interesting questions for future research.
While preference for one type of production over another varied by crop, the reasoning was consistent: farmworkers prefer the one in which they make the most money. For strawberry and raspberry harvesters, they earn more money working in conventional than in organic farms. Under the piece rate system, harvesters are paid a price per box. Strawberry and raspberry harvesters pick more boxes in conventional compared to organic, and thus make more money in conventional. For vegetable harvesters, the price per piece for organic is high enough that most harvesters earn more in organic even though they pick fewer boxes overall. Other considerations, such as exposure to toxins, did not come to the forefront as much during workers’ explanations of preferable workplace conditions. When prompted to discuss pesticides, similar views can be found across all three crops. Some farmworkers trust re-entry intervals, and others point to the health side effects, but perception of risk did not correspond with workplace preference, as those who perceive pesticide exposure to be dangerous still prefer conventional if they make more money in conventional, and those who perceive pesticides to be safe still prefer organic if they make more money in organic.

Findings

Workplace Preference

In responding to whether they prefer to work in organic fields or conventional ones, farmworker reasoning is consistent: they prefer to work in the one where they make the most money. Most vegetable harvesters who prefer organic say they prefer organic because they get paid more. Alvina is an older indigenous woman with a long braid and traditional clothing. We chatted in her front yard while it sprinkled on us lightly. I asked Alvina whether she prefers to work in organic or conventional production, and she responded “Orgánica, porque es más bien pagada que el convencional. Organic, because it pays better than conventional.” Facundo is a 38-year-old from the Mixteca baja region of Oaxaca. After asking Facundo about the difference between organic and conventional, I asked which is better. “Organic, because it pays more,” he responded.

While vegetable harvesters prefer organic because it pays more, raspberry harvesters prefer conventional because it pays more. Calixta is a 43-year-old Mixteca mother of five. We chatted on a chilly evening at a playground in South Oxnard. Which is better for you?, I asked. “The other one. Because organic doesn’t pay. It [the berry] is very small because they do not apply a lot of chemicals.” Why is bigger better? I followed up. “To make more boxes. So that we get paid. And organic no. It doesn’t pay.”
Raúl is a 25-year-old Mixteco from Guerrero. The difference between organic and conventional raspberries, he tells me, is that organic does not give much fruit. The yield is lower, and also, the berry is smaller. He prefers conventional because “saca más dinero el normal que el orgánico.” They make more money in the “normal” one than they do in organic. “I arrive on an organic field, and there is no fruit,” complains Raúl, “so it comes out to minimum wage.” Ramón is Mixteco from Guerrero. Half of his life, 26 out of 52 years, has been spent in the United States. He prefers conventional because “We don’t get anything in organic, only minimum wage. In conventional, the income is a little more because we can pick more boxes.”

Strawberry harvesters prefer conventional because they can make up to twice as much money in conventional compared with organic (Soper 2020). Ignacio is from Michoacán. He has 30 year of experience working in agriculture, and adamantly prefers conventional because: “sale más dinero en el que lleva química. You make more money in the one that has chemicals.” Hector is 29 years old from Huajuapan de León, Oaxaca. He prefers conventional “for money, to maintain my family.” “Although the chemical is bad,” he acknowledges, he would rather work in conventional “to bring a little more money into the household.” As Martina puts it, “you suffer but you earn more.”

The principal reasoning behind workplace preference is income, as it relates to piece rate pay. The difference in price per box, how much produce fills a box, how many boxes they can pick in a day, and how much money they can earn came up again and again as reasons for why harvesters prefer one type of production over the other. While vegetable harvesters are able to earn more money organic, raspberry and strawberry harvesters always earn more in conventional. Exposure to chemicals rarely came up in respondents’ reasoning.

To be sure, some vegetable harvesters prefer organic because it is better for their health. Agustín and Marisol both mentioned no chemicals in their reasoning for why they prefer organic. Agustín prefers organic because “there are not so many chemicals.” Marisol prefers organic because “it does not contain chemicals, it is healthier, it is cleaner.” But these respondents also made more money in organic than conventional. Picking parsley, Agustín can average between $12 and $13 an hour in organic, while in conventional he only earns $11 or $11.50 an hour. Marisol says her employer pays $1.80 per box of conventional cilantro and $1.95 in organic. In conventional kale, she earns $2.10 per box, while organic kale pays $2.30. No one said they prefer organic if they earn less in organic.
Piece Rate Pay

While hourly wage is always minimum wage, piece rate offers the chance to earn more. The more boxes they fill, the more income they earn. While strawberry and raspberry harvesters are able to fill more boxes in conventional than organic, for vegetable harvesters, the price per piece is much higher in organic than in conventional.

Raspberry respondents prefer conventional because the size of each berry is bigger, and there are more berries per plant. Pancho is 38 years old from the indigenous region of Puebla, but his community does not speak Mixteco. They speak, or rather they spoke before it was lost, a dialect called Popoloca. I asked him which is better to pick, organic or conventional, and he said, “Conventional is better. The plant has more fruit. It is better for the people who work harvesting it.” As Ricardo puts it, “hay más fruta en la planta y es más grande.” There are more berries total on the plant, and each conventional raspberry is bigger.

Since conventional berries are bigger, it takes fewer to fill a box. Calixta estimates that it takes 20–21 conventional raspberries and about 25 organic ones to fill a clamshell. Raul says that if the berry is big, then it takes less than 20; however, if they are small, it can make 30–40. Since organic is so small, sometimes it takes more than 40 to fill a basket. Ricardo estimates that 30–35 conventional berries fill a basket while 40–45 organic ones do. Twelve baskets fill a box, so if it takes ten additional berries to fill a basket, it takes 120 additional raspberries to fill a box in organic.

Pancho is paid $3.25 per hour and $1.25 per box for both organic and conventional. Fewer berries per box, plus more berries in the field, allows harvesters to fill more boxes. In conventional “because the fruit is big and yields more,” it is possible to pick 50–55 boxes of conventional in a day, explains Sergio; they can earn $600–700 a week. In organic, during peak season, when the berry is at its best, the most one can pick is 40 boxes. And it takes 10 hours to fill those 40 boxes.

According to Raúl the price for conventional is $2.00 and organic is $2.50. However, even though the piece rate is higher in organic, he hardly ever gets paid per piece because he never picks enough to earn more than hourly. When they are paid hourly, they make about $500 a week, according Pancho; whereas, in piece rate conventional, they can make $600 a week. This extra $100 a week is important to them.

Thus “más cajas” came up again and again as to why conventional is better. They are able to fill more boxes. Others said “da más fruta,” “más grande,” “más rápido”: it gives more fruit, it is bigger, it is faster. Overall, “hay más rendimiento en convencional,” and organic production “no rinde.”
There is more yield in conventional than organic. By yield, they are referring to both the output in the field and the money they bring home.

This same rationale is brought up by strawberry harvesters as well, only stronger. The size differential between organic and conventional raspberries is not as stark as in strawberry production. It takes twice as many organic strawberries fill the same size basket. Respondents noted that 10–15 conventional strawberries fill a one-pound clamshell, while 20–30 organic ones do. In terms of pay, strawberry harvesters also noted that they make twice as much money in conventional. Working in organic, respondents make $500 a week, while in conventional they can make up to $1000 a week (Soper 2020).

In vegetable production, on the other hand, respondents are able to earn more in organic. The price per piece is higher in organic than in conventional, and they are paid per bunch rather than per basket, so the size differential between organic and conventional produce does not matter. Yield is still higher in conventional, and they can pick faster in conventional, so at the end of the day, they pick more boxes in conventional than in organic, but still get paid more in organic.

Facundo tells me it is much faster to fill a box with conventional kale than organic. Yet, even though he can pick more boxes in conventional, since the price is lower, he ultimately prefers organic: “Fewer boxes, more money.” Ernesto said the same thing. “Menos cajas, más dinero,” he explained, “you earn more in organic because it is better paid.” At the end of the day, Ernesto says he brings home $180 in organic compared to $150 in conventional.

While the vast majority of berry harvesters prefer conventional, only a small majority of vegetable harvesters prefer organic. Other vegetable harvesters say they earn more in conventional. Indeed, while the price per box is always higher in organic, some harvesters say it takes so long to fill a box in organic that they make more money in conventional because even though the box is worth less, they work so much faster they can pick enough boxes to make up the difference. For example, Santiago prefers conventional because it is faster. The plant grows more, so he can cut more product, and therefore fill more boxes. Dario prefers conventional “because it is faster and yields more.” At the end of a day harvesting in conventional, he earns about $200.

Organic vegetable production is slower not just because there is less output in the field, but also because the process of harvesting it is more tedious. “You have to put something below so the product does not get dirty,” explains Dario. “It has to be more compact and tidy. It is more delicate, more laborious; you have to be more careful.” In organic, “you have to be very careful,” agrees Santiago, “organic is more delicate to pick.
You have to be more selective.” Alviña further explains why: “because they do not use chemicals, sometimes the vegetables are bad. We have to sort between the ones that are good and the ones that are bad.”

Thus, in addition to a preference for piece rate pay over minimum hourly wage, it can also be seen that farmworkers view agrochemicals as necessary for the plant to grow properly. When asked about the difference between organic and conventional, farmworkers brought up fumigants in terms of how spraying makes the plant grow more, and therefore allows more boxes to be picked and more money to be made.

**Spraying Makes the Plant Grow**

Farmworkers justify the use of agrochemicals in their workplace as necessary to make more money. As strawberry harvester Martina states: “If I were to choose organic, one day I would work and one day I wouldn’t, because it doesn’t give much fruit, it doesn’t grow much. When they spray, we get more. If there are no berries, they spray more, and it produces more. Then we earn more too.” Hector tells me: “In organic, sometimes there are [berries] and sometimes there are not. In the other, they apply chemicals and the plant matures faster. And when there are more berries, you can fill more boxes, and they pay you better.”

Respondents attributed the difference in size and yield between organic and conventional berries to the inputs that are applied. Referring to the size of the berry, Victor says, “Since it is organic, they do not apply much and it doesn’t grow big. It grows very small.” With regard to overall yield, Valentina explains, “they put chemicals on the strawberry so that it produces faster.” “Conventional gives much more fruit than organic because they put a lot of chemicals and the chemicals make the berries grow fast and grow big,” states Paula, “If the plant grows big and has a lot of berries it is much better for us.”

“Es sprayen ellos, da más fruta, y gana más,” Martina explains, “When they spray, it gives more fruit and we earn more.” According to Carmen, conventional “produces more berries because they apply treatment.” At the start of peak season, she can pick 100 boxes a day in both conventional and organic. But then the yield drops, “baja la cantidad.” In organic, they do not do anything about it. In conventional, when the yield drops, they spray, and more berries appear: “In conventional, because they spray, more product comes,” she explains. The way farmworkers talk about applying chemicals is as though it goes into effect immediately. If the yield drops and chemicals are applied, more, bigger berries start to grow. “Boom,” Armando says as he makes a sound effect and motions with his hands, “everything matures, and in organic, no, the plant grows alone.”
Phrases that came up again and again when discussing organic were “solita” and “pura agua.” Rosa explains that the difference between organic and conventional is that “on organic strawberries, they do not put chemicals, it is pura agua,” only water. She further explains that organic berries grow “solita,” alone without any help, whereas conventional berries get the treatment they need. Saúl says: “there is more fruit because they spray, they put chemicals, they apply insecticides. And in organic, it is pura agua, only water, and for that reason, it does not give much fruit.”

This association between spraying and growing more can be found across respondents in all crops. Vegetable harvester Facundo notes that: “conventional is bigger because they apply fertilizer, they apply chemicals.” “Conventional product is better,” says Ernesto. Even though he prefers to pick in organic, he notes that spraying makes conventional produce look better. Marisol admits that “in organic it takes longer to grow, and in conventional the plant grows prettier.” In this way, even when they prefer organic, vegetable harvesters still see agrochemicals partly in a good light, because they make the plant grow better.

“Organic is not convenient for us because the fruit is so small,” explains Valentina, “If it wasn’t for how small the organic strawberries are, it would be better to work on organic farms because there isn’t a lot of chemical exposure.” I asked her how conventional strawberry production could be improved and she answered “With less chemicals it would be better.” But then she hesitated and pondered whether fewer chemicals would mean smaller fruit. Valentina does not want to be exposed to toxins, but organic does not offer a viable livelihood alternative for her.

Perception of Pesticide Risk

When I prompted farmworkers to talk about pesticide health risks, some respondents revealed illnesses and symptoms they have experienced as a result of exposure, while some assured me it is safe because their employer follows re-entry intervals. Yet, both those who think it is safe and those who think it is dangerous prefer to work in conventional fields if they make more money in conventional. Likewise, both those who think it is safe and those who think it is dangerous prefer to work in organic if they make more money in organic.

Some vegetable respondents, but not all, were concerned with the health side effects of working in conventional production. Pedro admits that working in conventional is bad for his health. He pulls up his sleeve to show me his arm and tells me about all the markings on his hands and arms from the chemicals. Agustín laments “there are many illnesses” in conventional. Marisol explains “It is better to work in organic because
in conventional sometimes they have just sprayed and they put you in it. Chemicals are harming our health." She has gotten sick after working in conventional; her symptoms include allergies, headache, nausea, and "also they say that it brings a lot of cancer," acknowledges Marisol.

Some raspberry respondents, despite their preference for conventional, were also concerned with health side effects. According to Calixta, "we hardly finish picking one side and already they come spraying fumigants so that the fruit can ripen." "The fumigants are dangerous," Calixta continued, "It clogs up my nose. My head hurts. When I get home, I don't feel well. I worked in organic for two years and I never got sick. It didn't do me any harm. And the other, yes. It gives me flu-like symptoms."

Lidia tells me that pesticides do harm to her health. Mostly, they give her allergies. Her eyes, nose, and throat all itch. "Chemicals affect one's health by giving them allergies," explains Raul, but it depends on the person: some are affected and others are not. Raul has not been personally affected yet, but he worries about the future, "Every day we work in the fields, little by little it is going to affect us."

Strawberry respondents were also concerned with the health side effects of working in conventional production. Sarita, a young pregnant woman taking care of five other kids, responded that yes, she does feel sick after work "because of the pesticides. Where I work, they don't notify us when they are going to fumigate. Sometimes we'll be working and the machine will go by. That's when someone will say "I have to vomit. I have a headache." But even if we tell the surquero or ask that they don't spray right now because we are working, they don't stop, they continue fumigating."

In response to whether she has ever felt sick while harvesting in a conventional field, Frida said, "Yes, sometimes it makes me want to vomit, because the chemical is so strong." Recently, though, she explains, they stopped fumigating when they are picking in the fields; they wait for the farmworkers to return home. But before, "We would be standing here and they would fumigate right there. And we would breath it in! That's what caused the headaches and eye pain."

The general sentiment is that things have gotten better than they were in the past, but as Ignacio admits, mistakes still happen. While Ignacio generally trusts re-entry intervals ("they don't let us enter the field when they are spraying"), he also notes that it is dangerous if a mistake is made: "it can be harmful, you can get dizzy and vomit; if they make a mistake and spray while you are picking, it's dangerous."

Another perception of pesticides that was brought up by a few respondents is that delicate and weak people are more affected by them. In
response to whether she has ever gotten sick, Carmen responded, “No. It depends on the person. Some people are very delicate, their skin is delicate, and the dust harms them.” According to Natalia, “when one is weak, sometimes they vomit or get a headache. Me no.” Marisol also says “No todos los cuerpos salen iguales; hay unos cuerpos que sí resisten, otros son mas débiles. Not all bodies are the same; there are some that resist, and others are weaker.”

Indeed, not all respondents were concerned with exposure; harvesters across all crops trust re-entry intervals. According to strawberry harvester Armando, “When the company sprays chemicals, they warn everyone. They notify whether it will be 72 hours, 24 hours, 12 hours or 5 hours [before we can enter]. They spray on that side, and we pick on the other side, 100 feet away.” So then it is safe?, I follow up. “Yes,” he responds. Valentina explains that they spray after the farmworkers are done picking the field, and the farmworkers can return after one or two days, sometimes on the third day. When I ask how it affects her, whether she gets sick afterwards, she hesitated and then responded, “well, no. They do it in the afternoons or evenings, so it is gone by the time we get back to work. The chemical isn’t there anymore.”

Raspberry harvesters also trust re-entry intervals. “I have never had a problem with it,” explains Sergio, “Where I have worked, they have always informed us about what day they spray the pesticides and what day we can enter after a certain amount of time.” Adolfo has worked in conventional agriculture for 25 years. When I asked him if he ever gets sick after work, he said “Never. I have never entered until the date that they told me to.” In response to the same question, Rafael said “No. I’ve been working 20 years, and no. Never.” Paloma assures me it is safe, that until now nothing bad has happened.

Pancho even compared fumigant application in Oxnard to his home community in Puebla, pointing out how much safer it is here than there. He worked for a neighbor in his community back home, and they fumigated with agrochemicals or líquida. “Almost everybody uses pesticides there,” he explained. “It is stronger there. There is less control over the times that you can enter the field. It is a huge problem, the management of chemicals. Strong chemicals. They are unaware, they don’t protect themselves.” But in Oxnard, the fumigants are applied by people who

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5 Holmes (2013) also found that farmworkers in his study did not necessarily see themselves as susceptible to pesticide-related illnesses because their bodies are sturdy and strong, not delicate and weak, and also because the laws are a lot stricter than they use to be (172–73).

6 See López (2007) for an account of pesticide use and illness in the rural countryside of Mexico.
wear protective gear. “The harvesters, we enter the fields after they have applied the chemicals, after a certain amount of time has passed,” he assures me, “It is safe to enter. I guess it could be dangerous, but only a little; it is not as serious.”

Similarly, vegetable harvester Alviña trusts re-entry intervals. I asked her if she ever gets sick after working in the field from coming into contact with chemicals, and she responded that she feels safe at work because of “the restrictions that the company has. The company knows how to spray liquids; they don’t let us enter until the permitted time.”

**Concern Over Exposure Does Not Correspond With Preference**

Alviña is one of the respondents who prefers organic. Not only does she explain her preference in terms of income, but when prompted to discuss pesticides, she states no concern over exposure. I followed up with, so you prefer organic just because it is well paid, or is there another reason, like health? “To this day I have never had any inconveniences or any reaction to the chemicals,” she assured me, “I’ve never felt unwell.”

Facundo is another example of a vegetable harvester who prefers organic; yet it is not for health reasons, but rather because he is paid more. Do you prefer organic because of the chemicals or because of the income? I followed up, to which he responded: “It is because of income. I get more money. In conventional, [the chemical] doesn’t affect me at all.”

On the other hand, Alma is a vegetable harvester who prefers conventional. She would rather work in conventional bok choy than organic because conventional is paid piece rate, while organic bok choy only earns an hourly wage. Yet, unlike Alviña and Facundo, she does worry about exposure; she is very concerned with health side effects. Therefore we have Alviña and Facundo who prefer organic despite being unconcerned with exposure, and Alma who prefers conventional despite being concerned with exposure. In each of these instances, their workplace preference is not about occupational harm so much as income. Livelihood outweighs health risks.

I asked vegetable harvester Santiago if there are pesticides in conventional, why do you prefer it? And he responded, “because you cut more. It is faster. If not, how am I going to maintain my family? In organic there is no danger in picking, none. It is better for you. But, to a picker, it is not worth it.” In this case, Santiago prioritizes maintaining his family over working in a safer environment. He understands the risk of working in conventional, but views it as preferable because chemical inputs produce higher yields, which means more product to cut and more income to earn.
I began each interview by asking about the difference between conventional and organic production, and all respondents were aware that one contains chemicals and the does not. They explained how spraying makes the plant grow bigger, faster, and better. Their preference for working in one type of production over the other was related to piece rate pay, and which one generated more income. When prompted to discuss the health risks associated with exposure to pesticides, some respondents trusted re-entry intervals while others spoke of health effects they have personally experienced. Yet even those who have experienced negative side effects prefer conventional if they earn more in conventional, and even those who insist conventional fields are safe prefer organic if they earn more in organic. Concern over exposure does not outweigh income for any of the 65 farmworkers interviewed in this study.

Conclusion

According to Méndez et al. (2020:53), “Dire socioeconomic conditions and health hazards exist for many California farmworkers, particularly undocumented Indigenous immigrants.” This article sheds light on these conditions and investigates the interplay between them. My research contributes to previous studies of farmworkers that found they view loss of livelihood as a bigger risk than exposure (Barbour and Guthman 2018). Scholars have found that farmworkers perceive employment in conventional fields as worth the risk because the alternative of no work is threatening to their basic survival; but even those who have experience working in organic still prefer conventional fields if they make more money in conventional. Even when it is possible to earn income and avoid exposure in organic, because of extreme economic vulnerability, farmworkers would rather work in the field that offers marginally more income.

The harvesters in this study only prefer organic when they earn more money in organic. They do not wish to forego income to labor in a healthier work environment. Moreover, because of the piece rate system of pay, respondents view chemicals as necessary to make ends meet: the larger the yield, the more boxes they can pick, the higher their income. Even those who are concerned with the health side effects that result from exposure to toxins continue to work in these conditions, despite the fact that organic is an available workplace alternative, because it is necessary to earn enough money to get by. These findings extend the literature on farmworker structural vulnerability.

In her research, Saxton (2015:179) found that pesticides can become normalized and accepted by farmworkers because “they cannot always choose safer working conditions or life circumstances.” As such, the issue
of choice must be highlighted here. While Guthman (2017) notes that harvesters have more agency to choose employer than in the past, once a farmworker is assigned to a labor crew, they harvest on the fields that their crew is assigned. Thus, farmworkers do not necessarily get to choose whether they work in organic or conventional on any given day. That is why my interview guide asks about preference for one type over another. This research uncovers farmworker values, but not their agency. It asks if they had a choice, what would they choose. Future research should follow up on how many days harvesters work in organic, and how much income they earn annually from organic as opposed to conventional in each type of crop.

Given that the majority of farmworkers in this study make more money in conventional due to wage structure, it raises the issue of doing way with piece rate pay, so that all agricultural income is based on hourly wage. With new legislation in California that increases the minimum wage and adds overtime protections, hourly pay might rise in favor among farmworkers. As it is, for those in this study, piece rate is preferred. Agricultural laborers have long fought for the opportunity to earn more money the more output they pick (Wells 1996). If all farmwork were hourly, perhaps organic would be more favorable; if the piece rate for organic was considerably higher than conventional across all crops, perhaps organic would be more favorable; yet, rather than changing economic conditions to incentivize organic, what is needed is reduced exposure to toxins in conventional production.

Altering conditions so that farmworkers get paid more in organic than they do in conventional is not the answer. That just creates stratification among farmworkers along the lines of income and environmental justice. It would likely place undocumented female indigenous workers in the undesired fields and leave documented mestizo males at the top of the power structure. Creating an economic incentive to work in organic does not reduce the exposure faced by those who continue to labor in conventional. Rather than optional, voluntary carrots in the form of organic certification, we need more mandatory regulatory sticks to reduce agrochemicals in all production (Harrison 2011, 2017).

According to Harrison (2011) and Saxton (2015), existing pesticide regulations are ineffective. Both scholars problematize Risk Assessment laboratory experiments for focusing on acute exposures to singular chemical compounds; thus “The long-term consequences of chronic low-dose exposure to soil fumigants” as well as the “Synergistic effects of pesticide mixtures” are underexplored (Saxton 2015:177). Therefore, the air quality benchmarks set and enforced through re-entry intervals are not necessarily safe.
Saxton (2015) points to the toxic ignorance that is at play with state and industry officials' assurance that pesticides are safe under current regulations. She asserts, “The dangers and cumulative impacts of pesticides are neglected or normalized as harmless by agribusiness, some physicians, and federal and state regulators” (Saxton 2015:179).

Scholars thus critique the current pesticide regulatory framework for individualizing the responsibility for pesticide protection onto the workers themselves, though measures such as changing clothes after work before returning home. When illness occurs, blame falls on farmworkers for not protecting themselves properly (Galt 2013). As Holmes (2013:26) asserts, “When risk and blame are individualized, the solutions imagined and interventions planned focus on changing the behavior of the individual. However, attempting to intervene on individual behavior in such contexts draws attention away from the structural forces producing mortal danger and death in the first place.”

Rather than relying solely on self-protective measures, which place the burden of responsibility onto the workers themselves, industry should be held responsible for creating safer working environments. Exposure to workplace toxins must be reduced to ensure that all fields, even conventional ones, are less harmful to farmworker health. In addition, the vulnerability that farmworkers face should be addressed through political protections that remove the fear associated with seeking assistance programs or speaking out against workplace transgressions.

References


