

Survey Conducted among Migrant and Seasonal Farmworkers To Determine Compliance to Pesticide Safety Laws Background and Survey Results

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**Survey Conducted Among Migrant and Seasonal
Farmworkers to Determine Compliance to Pesticide
Safety Laws : Background and Survey Results**

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I. Introduction

El Progreso del Desierto, Inc. is a private, non-profit community and migrant rural health center serving a predominantly Mexican-American migrant farmworker population. It was incorporated 1980 to provide comprehensive medical and educational services to migrant and seasonal farmworkers and in the medically underserved areas of Coachella, Thermal, Mecca and Oasis.

The health problems experienced by migrant and seasonal farm-workers are more severe than those of the general population. Poor health is a result of inadequate medical care, poor housing, unsanitary living conditions, a disruptive life style and a lack of health education. Farmworkers are also exposed to a number of occupational hazards, including exposure to toxic agents and work-related injuries. The hazards and potential hazards presented by pesticides and pesticide residue in the agricultural workplace are a topic of concern and controversy. A summary of occupational disease rates in California shows that the highest disease rates are among agricultural workers.

As part of its continuing commitment to provide comprehensive health services to this population, El Progreso del Desierto in conjunction with Mujeres Mexicanas a grass roots empowerment organization, conducted a survey among Migrant and Seasonal farmworkers of the Coachella Valley to determine compliance to Pesticide safety laws and the level of knowledge regarding the existence of the laws and danger of pesticides. The purpose is to determine the need for pesticide-related educational and medical services by the migrant and seasonal farmworkers and the communities served by El Progreso.

A. Social Diagnosis

The migrant farmworker population of the lower Coachella Valley has the following demographic profile. U. S. Department of Commerce statistics reveal that nearly 51.5% of the Coachella census area is 200% below the national poverty level. El Progreso clinic data shows 63% of the patient population at 200% below the poverty level, 54% have no health insurance and only 20% have above a sixth grade education. Ethnicity of the clinic population is 91% Mexican American.

Due to the proximity of the Mexican border and the availability of farm labor work in Coachella and the surrounding communities, the area has a large population of amnesty applicants and undocumented workers from Mexico. The number of migrant and seasonal farmworkers has been estimated, utilizing Employment Department Division data, at 7,442 migrant and 8,309 seasonal workers per year. The migrant population is in addition to the year-round population, listed at 14,100 as of January 1, 1988. The majority of the workers are male, aged 24-35. Spanish is the primary language of the population. Approximately 75% are mono-lingual and approximately 80% practice the Catholic religion. The average income for a family of four is \$8000 annually.

While most Mexican-Americans have large, extended familial support systems, many farmworkers live in remote areas without any mode of transportation. This factor affects their access to educational and medical services. In addition, for the migrant population, the moving involved with

following the crops within the migrant stream disrupts the continuity of family life, school enrollment for children and any form of follow-up medical care.

Socio-economic stratification is prevalent in the Coachella Valley and contributes to feelings of hopelessness and resentment within the farmworker population. The schism is even more pronounced in this community, however, because of the extreme wealth of the neighboring communities, including Palm Springs, Rancho Mirage, Palm Desert, Indian Wells and La Quinta as opposed to the extreme poverty which exists in Coachella, Thermal, Mecca and Oasis.

The belief and value systems of the target population contribute to the need for increased educational and medical services related to pesticide exposure. In interviews with several farmworkers and Hispanic community leaders, the dominant prevailing attitude of the farmworker toward pesticides was revealed. Workers not born in this country have not been acculturated to or educated to regard pesticides as dangerous or to question the effects of long-term exposure to pesticides. If they are they feel powerless to impact the situation due to socio political realities.

Because of the complexity of these various social problems, any educational program planned must be culturally sensitive to the population. In this population, if workers cannot be shown the acute effects of pesticide poisoning, any long-term dangers are perceived as unpreventable or unchangeable. The full social impact of the problem is unknown and undetected, however it is obvious that it is greatly magnified due to compromised health status, socioeconomic and educational factors.

B. Epidemiological Diagnosis

A review of the literature provides information related to the farmworker population in general and also to those exposed to agricultural pesticides in Southern California. A summary of the most studies are outlined below.

When compared with those of other occupational groups, farmers and farmworkers have the highest rate of hospital discharges and the lowest rate of physician visits (Vital and Health Statistics, 1974), suggesting that farmers and farm-workers may suffer serious illness more frequently but tend not to seek medical care for more minor ailments. (Donham, Kelley J. and Mutel, Cornelia F., 1982)

A summary of occupational disease rates in California shows that the highest disease rates are among agricultural workers (State of California Agricultural Services Agency 1974). One survey indicated that musculoskeletal problems account for 42% of agricultural workers disabilities, the highest rate when compared with other occupations. This same survey also revealed that chronic heart disorders were more frequently reported by farmers than by those in other occupations. Other surveys indicate that respiratory and mental disorders are also significant chronic disease problems resulting in disability for the farmworker (Haber, L. D., 1971).

California Pesticide Exposures

Since 1973, California has kept detailed information on pesticide illness from workers compensation claims and through mandatory reporting (Kilgore, W. W., 1980). Since this intensive surveillance effort began, the total number of reported pesticide-related illness has varied from less than 1,200 to more than 2,400 cases per year in California (Kilgore, W. W., 1980; Jackson, R.J., 1983; California Department of Food and Agriculture, 1986). In 1985, there were 1,888 cases of confirmed or suspected pesticide-related poisoning reported. Of these, 80% (1,516) resulted from occupational exposures while the remaining 20% were non-occupational and of unknown exposure. The incidence of pesticide-related illness or injury was estimated at 2.7 cases per 1,000 persons at risk for farm field workers and 60 cases per 1,000 for pesticide mixers, loaders or applicators. Among the occupational exposures, the type of illness was reported as systemic in 43% (655) of the cases while the remaining 57% (861) were limited to skin or eye symptoms. The type of pesticide was determined for 432 of those occupational cases, and over half were associated with

exposure to organophosphates or carbamates (Alexander, Charles E., et al, 1988). In California, it is estimated that the number of officially reported cases is possibly no more than one or two percent of the actual number (Kahn, E., 1976).

Riverside County Pesticide Exposures

The 1987 California Summary of Illness and Injury reported by Physicians as potentially related to pesticides indicates 9 cases in Riverside County related to agricultural use.

Coachella Valley Statistics

There were 3 reported cases of illness potentially related to pesticides in the lower Coachella Valley in 1987. This number was documented by the local Agricultural Commissioner and by the Medical Records Director at JFK Memorial Hospital in Indio. These figures reflect acute pesticide poisoning cases which resulted in in-patient hospital care.

More disturbing is a census-tract specific to Coachella mortality file obtained from the Riverside County Department of Health and Vital statistics. This file reported nine deaths with the underlying cause of death attributed to malignant neoplasms. The nine people were under the age of 30 and all listed agriculture as their occupation. While statistical significance cannot be claimed without further analysis, this is an area of concern to community leaders and may warrant the request of a state investigation.

D. Political Diagnosis

The preventable nature of chemical exposure and the public concern generated by recent media coverage of pesticide issues make this particular health problem worthy of investigation at this time. Farmworkers in California have a history of social political struggle, the intent of which has been recognition of their egalitarian rights as workers and as human beings.

Because the primary industry of the lower Coachella Valley is agriculture, its residents are intimately linked to this struggle. Although farmworkers are the target population due to their immediate exposure to pesticides, the community health is also at stake due to contaminated groundwater in the case of pesticide run-off from the fields.

Although after interviewing stakeholders within the community, an observer might conclude that there is not a problem with regard to pesticide usage in the Coachella Valley, that observation would merely reflect the denial present in the community. Any solution to a problem as politically complex as this one needs to look at factors influencing the behaviors of the stakeholders involved. **To achieve their goal safety in the fields and a steady paycheck they must have access to appropriate education about pesticides and protection against the dangers of those pesticides in a supportive workplace.**

II. Medical Issues

Exposure to pesticides can result in a wide range of short and long-term health problems. Some pesticides can cause a reaction that appears soon after exposure. These "acute" effects include dizziness, nausea, headaches and other flu-like symptoms. In severe intoxication, patients may have tachycardia, pallor and an elevated blood pressure (Murphy, S. D., 1980; Namba, T., 1971). Central nervous system effects include headache, drowsiness, dizziness, and in severe cases, unconsciousness or coma. With organophosphate poisoning, the interval between exposure and chemical manifestations may be as short as five minutes after massive ingestion or up to 12 to 24 hours with lesser exposures. Pesticides can also cause health problems that may not be seen for many months or years after initial exposure. These are "chronic" effects and include long-lasting illness such as liver and kidney damage or nervous system disease. Some pesticides are known or are suspected of causing cancer, birth defects or sterility, based on animal testing or human studies (Texas Department of Agriculture, 1988).

Since Physicians cannot possibly be aware of all the pesticide products available in the marketplace today, they must be knowledgeable of the action of the classes of pesticides in order to be able to successfully diagnose and treat conditions of pesticide-related illness or injury (State of California, Department of Health Services, 1988). The possible routes of entry of pesticides into the body are through ingestion, inhalation and dermal absorption. Ingestion generally causes the most severe effects; relative inhalation and dermal absorption toxicities usually depend on other factors. The length of exposure influences the dose absorbed (U. S. Department of Health and Human Services, 1982).

Summary of California Health and Safety legislation for farmworkers.

California agriculture regulations require that employers provide medical supervision for agriculture employees who apply pesticides containing cholinesterase-inhibiting compounds. This requirement applies to employees engaged in the production of an agriculture commodity and who apply pesticides in toxicity categories one and two containing organophosphates or carbamates for seven or more days in any 30-day period. These workers include mixers, loaders, ground and aerial applicators and flaggers. The medical supervision requirement now includes the provision that the employer have a written agreement or letter signed by a physician stating that the physician will provide medical supervision. Employers must also notify workers when there is a waiting period to re-enter an area which has been treated with pesticides. Oral warning must be given in the language(s) which workers understand. In the case of intervals of seven or more days, sign posting is required around the fields

III. Problem Specification

After reviewing the Social, Epidemiological, Political and Medical issues, it was determined that a survey to assess the behaviors of farmworkers in relation to the existing pesticide laws would reveal the behaviors that needed to be targeted for educational interventions.

Behaviors that were linked to compliance of these safety laws and other health habits that would decrease the risk for pesticide exposure were targeted for the survey. They include:

- Communication of concerns about pesticides to employers
- Use of safety equipment when it is provided
- Provision of safety information, both verbal and written
- Inability to read provided safety information
- Washing pesticide contaminated clothing with family clothing
- Wearing non-protective clothing in the fields
- Washing hands after working with pesticides before eating, drinking or smoking

IV. Survey - Methods and Results

Due to the political and medical nature of the problem it was determined that a survey that could assess the level of compliance to pesticide laws and the level of education regarding pesticide safety would be the best approach to determining the educational needs of the local population.

The survey developed by El Progreso and administered by members of Mujeres Mexicanas (a local Hispanic women's group) to 67 local farmworkers. A summary of survey results follows.

- 69% of the workers had never been told by their employers how many hours to wait before re-entering a field that had just been sprayed.
- 65% had never seen a reentry sign posted warning them not to enter a field after spraying

- 78% had never been told what to do if someone gets sick from pesticides
- 48% had become ill from pesticides (subjective opinion) while working in the fields.

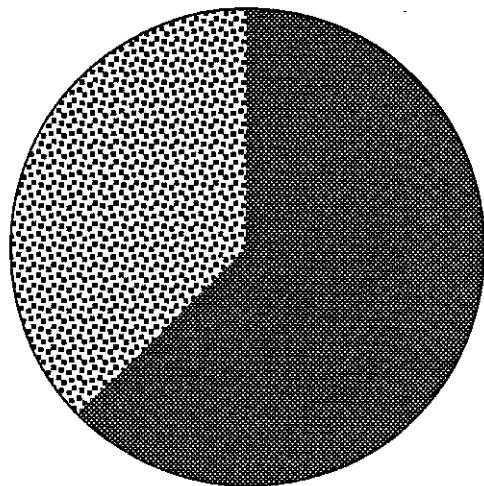
Only one of the mixer loader applicators interviewed reported being sent by employer for a blood test to monitor cholinesterase levels

In personal interviews with two applicators from local companies (one was employed by a unionized management company which sends him to several different ranches) several problems were identified:

1. Neither one had participated in an educational program to inform them of the dangers associated with pesticide use, symptoms of pesticide poisoning or what to do if they or someone they worked with became sick while working with pesticides.
2. Neither one had ever been given brochures or crop sheets specific to the chemicals they were applying. The union employees received instructions on the proper usage of the equipment.
3. During the season, both were applying chemicals for 2-3 consecutive weeks working 9-10 hours daily.
4. The non-union employee was not issued a respirator, gloves or a uniform while he was applying chemicals. The union employee received a respirator, gloves and disposable uniforms and goggles when using the tractor. The respirator filters had not been changed in the year he had used it. He said he would take the respirator off and use paper masks. The uniforms were disposable but they were only allowed to throw them away after 2-3 days use. Because of heat stress, the applicator would take the gloves and respirator off and roll the uniform down to his waist.
5. The non-union employee had never been sent for a blood test. The union employee was sent for one test before a 3-4 week spraying interval and not sent for another test until before the next spraying interval. Proper baseline establishment requires two tests 3-14 days apart. He works with three different chemicals, all in the highly toxic category.

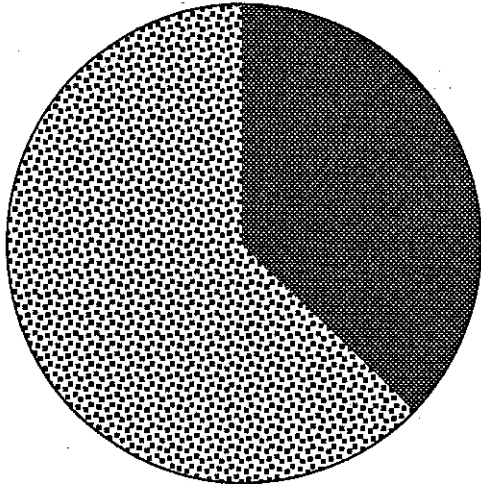
In addition to the information learned from the farmworkers survey, interviews with local and state officials and experts on pesticides revealed that the majority of farmworkers never report their symptoms to physicians or to their employers. They seek folk and over-the-counter remedies and only complain to their supervisors if a number of workers become ill at the same time in the same field. A number of workers stated that if they did report symptoms to a physician, they were told they had the flu and that no occupational history was taken at the time of the visit.

Migrant and Seasonal %



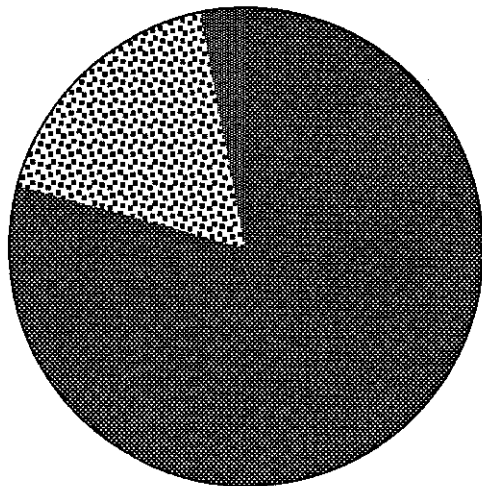
■ Migrant	62.7%
▣ Seasonal	37.3%

KNOWLEDGE OF RIGHT OF COMPLAINT



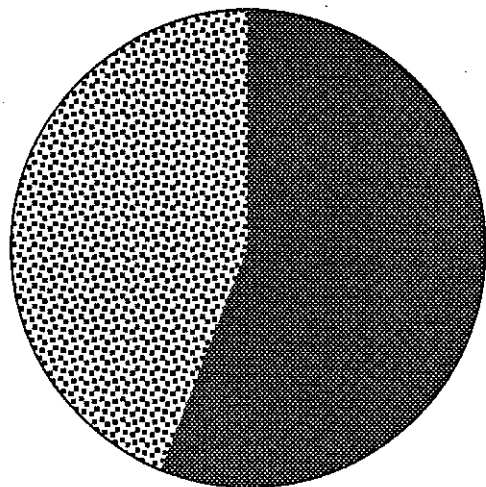
■	YES	37.3%
▣	NO	62.7%

INFORMED OF EMERGENCY MEDICAL FACILITY



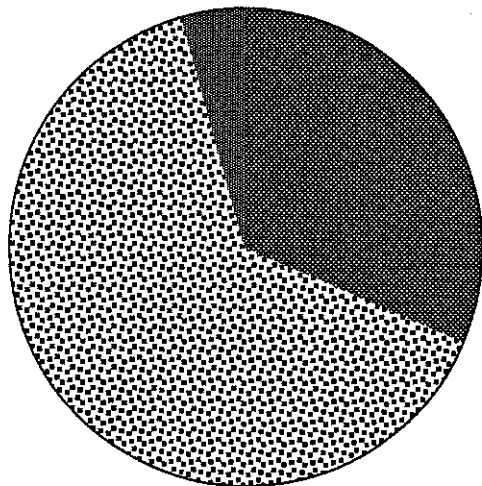
■ NO	79.1%
▨ YES	17.9%
■ Don't Know	3.0%




HAND WASHING FACILITIES USED



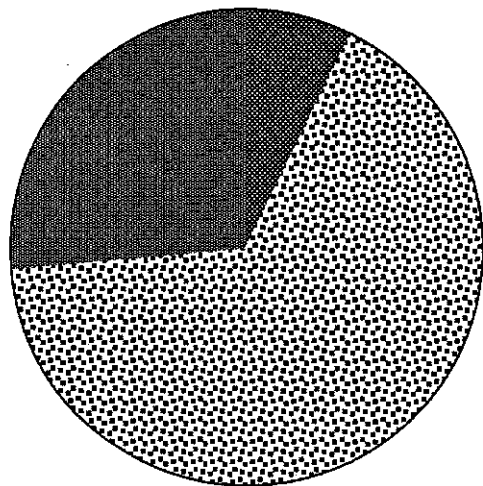
■	YES	56.1%
▣	NO	43.9%

VERBALLY INFORMED RENTRY TIME



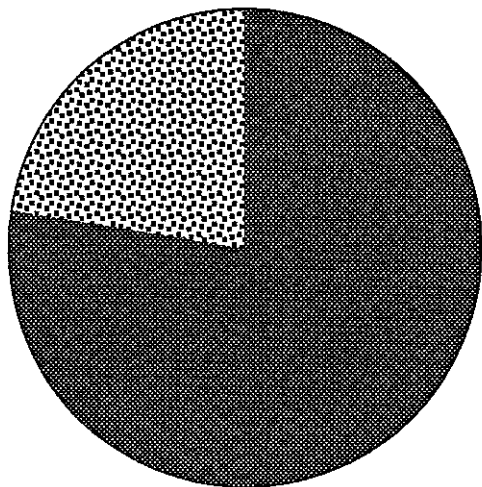
	Informed	31.3%
	Not Informed	64.2%
	Don't Know	4.5%

Union Membership



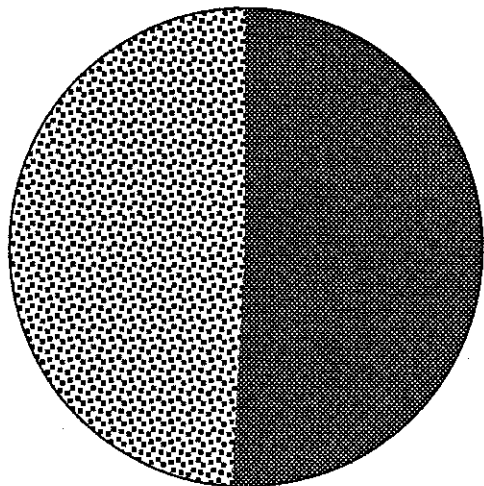
■ Union	7.4%
■ Non-Union	66.2%
■ Don't Know	26.5%

SAW RENTRY NOTIFICATION



■ NO	77.6%
▣ YES	22.4%

KNOWLEDGE OF RIGHT OF PROTECTION



■	YES	50.7%
▨	NO	49.3%