

(This statement about the occupational health and safety of California farmworkers – especially exposure to pesticides - was written by UFW General Counsel, Jerry Cohen, for presentation to various federal, state and local legislative committees concerned about the use of pesticides in California agribusiness. – LeRoy Chatfield)

STATEMENT OF
UNITED FARM WORKERS ORGANIZING COMMITTEE, AFL-CIO

Dolores Huerta, Jerry Cohen

November 21, 1969

The issue of the health and safety of farm workers in California and throughout the United States is the single most important issue facing the United Farm Workers Organizing Committee. In California, the agricultural industry experiences the highest occupational disease rate. This rate is over 50% higher than the second-place industry. It is also three times as high as the average rate of all industry in California. Growers consistently use the wrong kinds of economic poisons in the wrong amounts in the wrong places, in reckless disregard of the health of their workers, in order to maximize profits. Advancing technological changes in agriculture have left the industry far behind in dealing with the occupational hazards of workers which arise from the use of economic poisons. This problem is further compounded by the fact that commonplace needs, such as clean drinking water and adequate toilet facilities are rarely available in the fields and are also deficient in many living quarters of farm workers, especially of those workers who live in labor camps provided by the employers.

In California, an estimated 3,000 children receive medical attention annually after having ingested pesticides. There are over 300 cases of serious non-fatal poisonings annually, most of which occur in agriculture. There are some fatal poisonings which occur annually in agriculture. In addition to this, literally thousands of workers experience daily symptoms of chemical poisoning, which include dermatitis, rashes, eye irritation, nausea, vomiting, fatigue, excess sweating, headaches, double vision, dizziness, skin irritations, difficulty in breathing, loss of fingernails, nervousness, insomnia, bleeding noses and diarrhea.

Recently the state director of public health, Dr. Thomas Milby said that there is ample evidence of many unreported poisonings in agriculture. Dr. Milby is currently conducting an investigation in an attempt to get an accurate picture of pesticide poisonings among the workers. The State of California is not releasing the data from this investigation. As an article in the Fresno BEE by Ron Taylor claims, this study is headed by Mr. Henry Anderson, who would not answer questions concerning the factual findings of the study to

date, because “the subject is too controversial.” According to Mr. Taylor’s article, an undisclosed number of farm workers are reporting symptoms of pesticide poisoning. Many of these workers do not ordinarily go to doctors, but suffer in silence what they feel is an occupational hazard. The adverse effects of chemical poisons are so pervasive that they are considered by farm workers to be part of their way of life. They are accepted. One of the interviewers who is helping the state to conduct this investigation has informed the United Farm Workers Organizing Committee that of the 774 workers who filled out questionnaires which are now in the possession of the state, 469 of these workers had worked in the grapes and 295 had not worked in the grapes. Among the 774 farm workers, the following symptoms caused by pesticide poisonings were reported:

Eye irritation	548	Itching in the ears	12
Nausea or vomiting	141	Nosebleeds	26
Unusual fatigue	145	Burning and sore throats	51
Unusual perspiration	159	Swollen hands and feet	7
Headaches	309	Loss of hair	4
Dizziness	115	Diarrhea	2
Skin irritation	249	Pain in the fingernails	52
Difficulty in breathing	188	(Some workers lost their	
Nervousness and/or insomnia	122	fingernails)	

154 of the workers reported having one of the above symptoms, 144 reported two of the symptoms, 109 reported three, 83 reported four, and 163 reported five or more symptoms. Only 121 of the 774 workers studied reported none of the above symptoms. This study was limited to a relatively small county – Tulare – which is immediately north of Delano.

Dr. Irma West, who works in the State Department of Public Health, has written many articles concerning the occupational hazards of farm workers. Some of the examples of injuries are as follows:

On a large California ranch in the fall of 1965, a group of Mexican-American workers and their families were picking berries. None could understand or read English. A 3-year-old girl and her 4-year-old brother were playing around an unattended spray rig next to where their mother was working. The 4-year-old apparently took the cap off a gallon can of 40% tetraethyl pyrophosphate (TEPP) phosphate ester cholinesterase inhibitor) pesticide left on the rig. The 3-year-old put her finger in it and sucked it. She vomited immediately, became unconscious, and was dead on arrival at the hospital to which she was promptly taken. TEPP is the most hazardous of all pesticides in common use in agriculture in California. The estimated fatal dose of pure TEPP for an adult is one drop orally and one drop dermally. This child weighed about 30 pounds.

Because of engine trouble, an agricultural aircraft pilot attempted a forced landing in an unplanted field. The plane rolled into a fence and turned over. The hopper of

the plane contained a dust formula of TEPP, another of the phosphate ester pesticides. The estimated fatal adult dose for TEPP concentrate is one drop orally or dermally. The pilot was not injured, but was covered with dust. He walked a distance of 50 feet to a field worker, stated he felt fine, and asked for a drink of water. After drinking the water, he began to vomit and almost immediately became unconscious. By the time the ambulance arrived the pilot was dead and the ambulance driver, the pathologist and the mortician became ill from handling the body.

During this past summer, in the grapes alone and largely in the Delano area, the following incidents have been brought to the attention of our legal department:

On May 16, 1969, Mrs. Dolores Lorta was working for labor contractor Manuel Armendariz in a table grape vineyard owned by Agri-Business investment Company. Without warning, an Agri-Business spray rig sprayed the row she was working on, and Mrs. Lorta was sprayed all over her body with an unknown mixture of chemicals. Shortly thereafter, she experienced difficulty in breathing. She told her forelady, who responded that the spraying had nothing to do with that; that she must have had that difficulty before. The next day she felt quite sick and large red blotches had appeared on her skin. She went to work that day, but was unable to continue and hasn't been well enough to work since. She has suffered from continuing sores and rashes all over her body, headaches, dizziness, loss of weight, and her condition still persists. She has received no compensation from her employer as yet, and she has had to pay for her medical care herself.

Mr. and Mrs. Abelardo de Leon and their teen-age children, Juan and Maria, worked picking grapes for labor contractor Manuel Armendariz in vineyards owned by Agri-Business Investment Company during July and August, 1969. From the start of their work there, Mr. de Leon suffered rashes all over his body which lasted until they quit work. Mrs. de Leon began to suffer extremely irritated and swollen eyes as soon as they started working there, and one eye is still somewhat swollen. The irritation ceased when she quit and has not recurred, although she has returned to work in a different crop since then. Both the de Leon children, along with their mother, suffered eye irritation while working for Armendariz, and often their eyes would water profusely throughout the working day. When this was brought to the attention of Armendariz, he laughed and called them crybabies. He did not suggest that medical attention was available for the family under the workmen's compensation program and, as a result, they had to make do with drugs and home remedies. Although the de Leons were not sprayed directly, there was a heavy white dust on the vines and grapes which they picked. They saw no signs warning of the ill effects of this chemical spray, nor did they receive any warning or advice about it whatsoever. The de Leon family eventually stopped working for Armendariz because of the ill effects they were suffering from the chemical poisons on the grapevines.

Mr. Gregorio Sisneros was engaged in spraying a vineyard in the Selma area in 1968. According to directions which came with it, he mixed one quart of economic

poison with a large quantity of water; but his employer directed him to add another quart of poison, and he did. After spraying this mixture for a short while, he became ill and had to be taken to a doctor immediately. After receiving medical treatment, he was confined to his home and unable to work for some days. Since then, he has been sensitive to chemical spray and has become ill several times.

While working in the vineyards of George A. Lucas & Sons this summer, Mrs. Beatrice Roman developed trouble breathing, some throat, difficulty in speaking and stomach pain. Each day her condition would improve as she left the vineyards, and it would improve as she left the vineyards and it would worsen as she began to work the following morning. There was a heavy white powder on the vines among which she was working. Mrs. Roman has worked in other crops without experiencing such illness. She has been informed by her physician that it is due to the spray residues on the vines. She stopped working for Lucas because of the illness caused by the sprays on August 4, 1969, and she has been unable to work more than very little since then because of the continuing effects of the illness.

Mr. Mauro Roman (Beatrice's husband), along with his son, Jose, and a neighboring family, all worked picking grapes in the vineyards of Lamanuzzi and Pantaleo in August, 1969. All suffered severe skin rashes over their bodies, with cracked and peeling skin. All left this work after several weeks, and improved sharply as soon as they left. There was a very heavy white powder on the vines and grapes they were picking there.

After working in the vineyards of D. M. Steele for several days, Mr. Juan Q. Lopez developed trouble breathing, rashes on his neck and face, numbness in his left arm and upper left chest, headache and irritated eyes. There was a white powder on the vines. Mr. Lopez' condition began to improve when he stopped working in these fields.

While working picking grapes in Caric vineyard about ten days ago, Mr. Abelardo Hernandez ate some grapes from the vine. Shortly thereafter, he began to vomit and to bleed from the nose. His foreman refused to take him to a doctor until other workers finally convinced him to do so. The doctor who treated him said his illness was due to the grapes and the chemicals on them. He has suffered from this illness on and off since then.

During this season, Mrs. Dominga F. Medina has worked in vineyards near Richgrove. She has been spray rigs spraying liquid preparations on the vineyards only a short distance from where she and other members of her crew were working. She has suffered from bloody nose, eye irritation and headache while working in these vineyards.

Aurelio de la Cruz worked with Giumarra Vineyards in the spring of 1969. On more than one occasion he saw spray rigs spraying right ahead of the crew he was working in; his crew was told to work in the sprayed areas shortly after spraying was concluded. He suffered eye irritation and skin rashes on these occasions.

Mr. Claro Runtal suffered very severe rashes and dermatitis on his legs and neck while working in the vineyards of Richard Bagdasarian from December 1968 to June 1969. Many of the other men in the crew suffered skin irritations during the same period from the chemical dusts which had been applied to the vines.

Juanita Chavera was working in the Elmco vineyards in the spring of 1969 when she developed, as a result of the spray residue on the vines, skin rash, eye irritation and hands swollen so badly that her ring had to be cut off. Other women in the crew, including Mrs. Chavera's sister, Linda Ortiz, suffered similar symptoms.

Maria Serna, also working in the Elmco vineyards in May, 1969, developed irritated eyes, headaches, and severe dizziness. Her daughter, Alicia Ramona, suffered rashes and eye irritation.

Virginia Thomas worked in the Elmco vineyards at the same time. While working there, she suffered from severe difficulty in breathing, rashes and eye irritation. Her doctor told her that she shouldn't work in grapes because of the ill effects of the pesticides.

Frances Barajas also worked in Elmco vineyards this spring. While working there, a tractor spraying a liquid economic poison came through the vineyard in which she was located. She ran out of the field because she didn't want to get sprayed, but a foreman ordered her to go back in and get back to work. She later talked to the tractor driver, who said he had been ordered to spray there by one of the Elmco supervisors. While working there, she developed skin rashes and eye irritations that led to a serious eye infection. She has been afraid to complain about the poisons for fear of being fired.

Rafaela Ayala worked in the same crew at Elmco as Mrs. Barajas. When the tractor sprayed the field they were working in, she immediately began to vomit and her eyes became very irritated; they are still sore. She stopped working for Elmco as a result.

Mrs. Celestina Pereaes was working in the Elmco vineyards in May, 1968, when a tractor spray rig approached the row in which her crew was working. Her supervisor told them to hunch down under the vines while the spray rig sprayed them. Not knowing better at the time, she did so. Her eyes became red and watery at once, and became persistently irritated, and she has had eye trouble ever since.

Mrs. Josefina C. Moreno was working in a crew leafing vines in Elmco vineyards this spring. A spray rig came through the vineyard one row away from where the crew was working, and she and other women got sprayed soaking wet, but were put back to work after five minutes.

Petra Sisneros was working in Elmco vineyards, tipping grape bunches in May, 1969, when four tractor-driven spray rigs came into the field. Without any warning, one of them came right over the spot she was working in, spraying her soaking wet and blinding her to the point that she almost fell under the rig. Other women workers dragged her away from the danger of the spray rig. Her supervisor did not take her to a doctor until she became visibly sick; until then, she had merely been told to sit in the shade under a vine. By this time she was vomiting a great deal, and after she was taken to a doctor, who gave her an injection and bathed her eye, she was returned to the vineyards where she had to wait for a ride home when her co-workers finished for the day. She was extremely ill for the next ten days, with vomiting, nausea, trembling, dizziness, headache, difficulty in breathing, tightness of chest and difficulty in sleeping. To date, she has received no compensation from her employer. When she asked her supervisor and foreman what kind of chemical she had been sprayed with, they claimed they didn't know and said it was not their fault she had been sprayed.

Alfonso Pedraza was also sprayed by an Elmco rig while working in its vineyards in the summer of 1969. The spray hit him on the back, and when he saw a doctor three days later, his back was very red and the skin was cracked. The rash spread all over his body and he developed muscle stiffness and eye irritation as well.

The carelessness with which economic poisons are applied in this area is such that farm workers are endangered outside the fields, as well as within. About a month ago, while Petra Ojeda was working in a Tulare County orchard, the grower's tractor-driven spray rigs sprayed her car and the cars of other workers which were parked alongside the road. Mrs. Ojeda's young child was in the car asleep, and the lunches for the entire family were also in the car. The child was covered with a blanket, but her bottle was covered with spray. The entire car was white with the chemical spray.

The James Morning family didn't even have to leave their home to be sprayed with economic poison. In May, 1969, their country home was sprayed by an airplane which was applying poison to a nearby field. All six members of the family were hit with the spray, causing rashes, cracked skin and irritated eyes.

The misuse of pesticides is creating grave dangers – not only to farm workers – but to their children as well. Dr. Lee Mizrahi of the Salud Clinic in Woodville, Tulare County, has recently conducted a study of farm workers' children, relating to nutrition and pesticide levels. Dr. Mizrahi chose his samples by inviting every fifth family who came to the clinic to participate. Some 60 families have participated to date, and 170 children have been tested. Dr. Mizrahi has reported to the legal department of UFWOC that, although the results of the tests are not yet complete, based on findings already received, there are pesticide levels which can only be described as epidemic. Thus far, on 29 children tested, 32 of 84 reported values have fallen outside normal limits. Dr. Mizrahi has informed us that, as a practicing physician, he would be greatly worried if he found 10% of supposedly

normal children outside normal limits. In this case, he is frightened. These farm worker children are suffering from high levels of DDT in their blood and from low cholinesterase levels in their blood plasma.

The United Farm Workers Organizing Committee is attempting to solve this pervasive problem by the collective bargaining process. We have recently attained what is, for farm workers, an historic breakthrough in our negotiations with the Perelli-Minetti Company. We have completed negotiating a comprehensive health and safety clause which covers the subject of economic poisons. It includes the following protections:

HEALTH AND SAFETY

A. The Health and Safety Committee shall be formed consisting of equal numbers of workers' representatives selected by the bargaining unit and P-M representatives. The Health and Safety Committee shall be provided with notices on the use of pesticides, insecticides or herbicides as outlined in Section D 1, 2 and 3.

The Health and Safety Committee shall advise in the formulation of rules and practices relating to the health and safety of the workers, including but not limited to, the use of pesticides, insecticides and herbicides; the use of garments, materials, tools and equipment as they may affect the health and safety of the workers and sanitation conditions

B. The following shall not be used; DDT, Aldrin, Dieldrin, and Endrin. Other chlorinated hydrocarbons shall not be applied without the necessary precautions.

C. The Health and Safety Committee shall recommend the proper and safe use of organic phosphates including, but not limited to, parathion. The Company shall notify the Health and Safety Committee as soon as possible before the application of organic phosphate material. Said notice shall contain the information set forth in Section D below. The Health and Safety Committee shall recommend the length of time during which farm workers will not be permitted to enter the treated field following the application of organic phosphate pesticide. If P-M uses organic phosphates, it shall pay for the expense of all farm workers, applying the phosphates, of one baseline cholinesterase test and other additional such tests, if recommended by a doctor. The results of all said tests shall be immediately given by P-M to the Health and Safety Committee.

D. P-M shall keep the following records and make them available to each member of the Health and Safety Committee:

- 1) A plan showing the size and location of fields and a list of the crops or plants being grown.
- 2) Pesticides, insecticides and herbicides used, including brand names plus active ingredients, registration number on the label, and manufacturer's batch or lot number.
 - a) Dates and times applied or to be applied.

- b) Location of crops or plants treated or to be treated.
 - c) Amount of each application.
 - d) Formulation.
 - e) Method of application.
 - f) Person who applied the pesticide.
- 3) Date of harvest.

SANITATION

A. There shall be adequate toilet facilities, separate for men and women, in the field, readily accessible to workers that will be maintained in a clean and sanitary manner. These may be portable facilities and shall be maintained at the ratio of one for every 35 workers.

B. Each place where there is work being performed shall be provided with suitable, cool, potable drinking water convenient to workers. Individual paper drinking cups shall be provided.

C. Workers will have two (2) relief periods of fifteen (15) minutes which, insofar as practical, shall be in the middle of each work period.

TOOLS AND PROTECTIVE EQUIPMENT

Tools and equipment and protective garments necessary to perform the work and/or to safeguard the health of, or to prevent injury to a worker's person shall be provided, maintained and paid for by P-M.

The farm workers are relying upon themselves because of much evidence of inadequate governmental protection. Perhaps the most painful proof of the inadequacy of current governmental regulations is the one-year battle which the farm workers have waged to see public records relating to the use of economic poisons in Kern County, California.

During the summer of 1968, many farm workers came to visit the legal office of the United Farm Workers Organizing Committee and complained of symptoms varying from eye irritation and rashes to dizziness, vomiting, nausea, double vision, after having been in contact with sprays and dust, as the workers call it. In order to find out what materials are being used at which locations and at what exact time, our general counsel, Jerome Cohen, visited the Kern County Agricultural Commissioner, C. Seldon Morley, on the morning of August 22, 1968. He was told by Commissioner Morley to return to his office on the following day. He was interested in seeing two types of records: permits to use injurious materials, and the reports of commercial spray applicators on how the materials were used; i.e., under what wind and weather conditions, in what quantity and formula, at what locations, and during what time. He left the commissioner's office at approximately 11:30 A.M. At 1:30 P.M., a temporary restraining order was issued by the Kern County Superior Court preventing him from viewing the records of the commercial spray applicators. Subsequently, the United Farm Workers Organizing Committee did everything within its power to work out this problem privately without creating a public

scandal over the misuse of economic poisons in the grape vineyards. We did this believing that the fastest way of protecting the workers and consumers was not by creating public hostility, but rather, by working out the problem through private agreement between the farm workers, the grape growers and the pesticide companies. We informed the growers that, even if they did not want to enter into collective bargaining negotiations with us, at least they should sit down and talk with us about the use of pesticides.

Rather than take the matter to a trial in the Kern County Superior Court, which would have necessitated a factual disclosure of the misuse of economic poisons, and thus lessen the possibility of private agreement, the United Farm Workers Organizing Committee chose to appeal the temporary restraining order by challenging only the legal basis under the California statutes of the decision to withhold the records from the public. Therefore, the United Farm Workers Organizing Committee commenced an extraordinary original proceeding in the Court of Appeal for the Fifth District, seeking to prohibit the Superior Court from enforcing a temporary restraining order on strictly legal grounds. The Court of Appeal stated, in its decision of November 8, 1967, that exceptional circumstances, justifying the resolution of the legal issue before the factual issue was heard at the trial court level, were not in evidence, and they therefore denied the farm workers' writ of mandate. Subsequent to that, the United Farm Workers Organizing Committee, on December 16, 1968, intervened in the case of Atwood Aviation vs. Seldon C. Morley, the agricultural commissioner of Kern County. We commenced the discovery process in this case to examine the public need for seeing the records concerning the use of economic poisons in Kern County.

However, the farm workers made a further effort to reach a private agreement with the pesticide companies and the growers to quickly solve this problem. Therefore, on January 7, 1968, our general counsel for the farm workers wrote to Stephen Wall, who represented the pesticide companies, and proposed an agreement between the pesticide companies, the agricultural commissioner, the table grape growers and the United Farm Workers Organizing Committee. In that agreement, the farm workers proposed to obtain the following information to adequately insure that workers were protected when they worked in the fields.

1. The following information currently on record with the Commissioner of Agriculture should be turned over to the United Farm Workers Organizing Committee:

- a) A description and location of all properties treated with injurious materials.
- b) Date of treatment.
- c) Material and dosage used.
- d) Number of units treated.
- e) Type of crop involved.
- f) The identity of equipment used.
- g) If applied by airplane, name of pilot or pilots who applied the treatment.
- h) Temperature and wind conditions during the time of treatment.

- i) Name of grower or grower representative for whom treatment was applied.
2. All growers who used their own equipment to apply dangerous pesticides must deliver the following information to UFWOC:
- a) Description of properties and location of properties treated.
 - b) Date of treatment.
 - c) Material and dosage used.
 - d) Identity of equipment used.
 - e) Brief descriptions of qualifications of persons applying dangerous materials.
 - f) Statement of tolerance level for workers and consumers for each kind of injurious material.
 - g) Disclosure of amount of geybral used in vineyards and number of application geybral.
3. All growers shall inform the United Farm Workers Organizing Committee three (3) days in advance of application of poisonous materials.
4. Growers shall post written warning in fields in which injurious materials have been applied. Such warnings shall be in Spanish and in English, and shall state in letters six (6) inches high the name of the material which has been applied and the date on which the field will become safe to work in.

Mr. Wall responded, in part, as follows:

“I understand you to say also that you might now be satisfied with receiving from the subject reports that are now filed only those portions of data contained therein which could reasonably relate to the announced aim of your clinic in Delano primarily that of improving general health of agricultural workers in the area as well as the standards of safety applicable to their working conditions. I understand you to say also that your only other interest in seeing these specific reports on file now, was for your use in formulating some pertinent contract language for future use in negotiating labor contract hopefully. You definitely stated that you were not interested in seeing the subject reports for using any part of the contained data in connection with your boycott efforts or as a basis of filing any lawsuit or lawsuits, but here is what you come back with. You want the name of the grower, the name of the airplane pilot, the name of the material and dosage used, the legal description of the property treated, the exact date of the treatment, and so on. These you intend to use in connection with your Delano clinic or in negotiation of future contracts? Your actual purpose is clearly evident, and there is not even a coincidental resemblance to the one you expresses, but the ends justify the means in your league – right?”

Very truly yours,

Stephen E. Wall”

We responded to Mr. Wall by assuring him that the information for which we asked was absolutely necessary to protect and reasonably and adequately develop safeguards concerning the use of economic poisons in the vineyards. However, Mr. Wall did not respond to our subsequent letter of January 9. Therefore, on January 14, we wrote a letter to the table grape industry, which is being submitted with this statement. The letter reads as follows:

“There is one critical issue of such overriding importance that it demands immediate attention, even if other labor relations problems have to wait. I mean the harmful effects of spraying grapes with pesticides or economic poisons, as they are called. We have recently become more aware of this problem through an increasing number of cases coming into our clinic. We will not tolerate the systematic poisoning of our people...we will be damned and we should be...if we will permit human beings to sustain permanent damage to their health from economic poisons. We are willing to meet with your representatives on the sole issue of pesticides, even if you are not prepared to begin full-scale collective bargaining at present. These talks would go on even as we pursue our final aim of fair agreement.”

The growers did not respond to this letter in any way, and so the farm workers had no alternative but to take the matter of the use of economic poisons to a public trial, which took place on January 29 and 31, and was finished on February 5, 6, and 27. At that hearing, the farm workers introduced vast amounts of evidence which was overwhelming regarding the peril to farm workers' health of pesticide poisoning. An official report of occupational disease compiled by the State Department of Public Health for Kern County for the year 1967 alone contained over 95 pesticide-related injuries. Below are excerpts of testimony from various witnesses.

Thomas Milby, who is the chief of the Bureau of Occupational Health in the State Health Department, testified in part as follows:

Q. Now, you mentioned organic phosphate compounds. Could you give us examples of those in economic poisonings?

A. There is a long series of them. Parathion, TEPP, Diazion, Azodrin, and others.

Q. And others? A. Many others.

Q. These different pesticides, you say, actually destroy the cholinesterase?

A. They inhibit. They unite chemically with the cholinesterase and inhibit its action in the destruction of this material Acetylcholine; and therefore, a nerve which is under the effect of the organic phosphate compound. This compound, which allows the impulse to go across, is not destroyed; and, therefore, you have a short circuit and a continuous nerve action.

Q. Can you explain the effect on the human body by that short circuit?

A. Yes. This setup – this particular physiological setup is in only certain parts of the body; that is, there are a number of several kinds of – several nervous systems involved, and I

won't go into a technical description of these. But the upshot is this – that in the certain systems such as certain glands are involved here, as well as certain of the voluntary muscle systems; therefore, in an individual who's under the influence of the organic phosphates, who has – will have such things as muscle twitching, muscle paralysis, salivation. They will have difficulty breathing because of secretions which are built up because of this action. They will have papillary constriction, which we call myosis. And you will have excessive sweating. You will have nausea and vomiting. You will have headache because of the central nervous system effect of this thing, and you will have several other symptoms.

Q. Can this be lethal?

A. Yes.

Q. Has it been lethal?

A. It has been lethal.

Q. Do you know if it has been lethal to farm workers?

A. It has been.

Q. Do you know, for instance, which kind of pesticides have caused fatalities to farm workers?

A. Yes, I know from personal experience that Phosdrin, TEPP, which we spoke of before, Parathion, for three examples. All have been.

Q. Dr. Milby, you talked about – excuse me if I misstate this – papillary constriction, and headache. In your experience, do people who have been poisoned by Parathion, for example – do they lose their sense of judgment?

A. Well, they could, yes but primarily because they are ill – because they are exceedingly ill. And the usual picture of Parathion poisoning is headache, nausea, vomiting, and the other things I spoke of – heavy sweating and difficulty in breathing. And, of course, under those circumstances, one could lose their judgment, but the compound itself would not primarily affect judgment.

Q. I understand, but can it, because of the illness involved, cause a dizziness?

A. Yes.

Q. Do you have any idea as to the long-term effects of acute poisoning by Parathion, assuming the person lives?

A. It is very difficult problem. There is not much known about it, but in my clinical judgment, in my experience, individuals who are poisoned by the organic phosphates, primarily Parathion, take a long time to recover. It may take months. And during this recovery phase, they have loss of appetite. They have lassitude, and they have symptoms which are difficult to evaluate. But they certainly have symptoms for many months, but in terms of years – no, I think not.

Q. Have there been any pesticides which you feel may cause permanent never damage?

A. Yes. There have been several pesticides which have shown to have produced permanent nerve injury. These have not been used in California or elsewhere in this country to my knowledge, because the evidence that they produce permanent injury appeared during their early phase of production, and they were withdrawn. But to my knowledge there are no compounds used here which produce permanent nerve damage.

Q. Doctor, have you done any work in regards to Malathion?

A. Yes.

Q. Is that a fairly nontoxic organic phosphate?

A. Malathion is a compound which is handled very well by the warm-blooded animals; therefore, it is not very toxic to warm-blooded animals. It is quite toxic so insects.

Q. In terms of this pesticide, Malathion, what would be the kind of dosage of concentrated Malathion to kill a human being?

A. It would be several ounces.

Q. How about Parathion?

A. The toxic dose to an adult human being of Parathion would be more on the order of half a teaspoon.

Q. And what about TEPP?

MR. JORDAN: Objection, if you will. Do I gather we are talking about taking it orally?

THE WITNESS: The compounds are also toxic by skin absorption, but I was referring to oral dosage.

Q. (By Mr. Averbuck) And TEPP – how much orally would that take?

A. In a rough approximation, several drops.

Q. Several drops could kill?

A. Several drops would be a lethal dose – of lethal TEPP.

Q. Now, the point has been brought out that this is the oral toxicity for lethal dosage. Is it possible for the human body to take these pesticides in any other avenues?

A. Yes. The other two avenues – routes of entry are through the skin – through the intact skin, and also through the respiratory system – through inhalation of dust or mists. They are somewhat less toxic. Some of them are somewhat less toxic if applied to the skin. Some are more toxic by skin than mouth. Respiratory toxicity is not well understood.

Mr. Thomas C. Griffin, the owner of a pesticide company, under cross-examination from David Averbuck, testified as follows concerning an injury which occurred to him personally:

Q. (By Mr. Averbuck) Would you please explain the incident of when you got ill because of TEPP?

A. I was flagging some TEPP over a very long period of time, and I did not take what were normally considered the proper precautions. AT this time I was in charge of pest control just prior to going into business for myself a long, long time ago, but briefly, that is what happened.

Q. And how did you know you became ill from TEPP?

A. I had the common symptoms that one would suspect I have. I had pinpoint pupils, vision was blurry, headache, sweating of the palms, and so on.

Q. Did you have nausea? A. Yes.

Q. And did you have trouble breathing? A. A little congestion.

Q. In other words, you were good and sick.

A. For a very short period of time.

Q. Now, finally, two points. I think this will sum it up. You talked about washing the grapes.

A. That is correct.

Q. Now, that was a little bit surprising because, am I correct in gleaning from your testimony, that you are saying that you wouldn't want this information out because you want to keep it hidden from the public?

A. Not from the public at all. Certainly not from the public. What I am trying to say is this: That over the course of time, because of the way it was done, there was a general feeling by buyers that grapes that have been somewhat destroyed, and certainly in the past this was so. So, during the course of history of washing grapes, the term "washing," making an application, at this time became very detrimental to the growers, and he was not interested in having anyone know this was done.

Q. Even the buyer?

A. Even the buyer. I am saying, however, that this kind of work can be done today and is often done today, and with the appearance of the grape being perfectly natural, because of the techniques that are used.

Seldon Morley, the Kern County Agriculture Commissioner, the official who is supposed to be responsible for taking all steps necessary to protect farm workers' and consumers' health, testified as follows:

Q. Mr. Morley, have you notified the Department of Public Health of Kern County that they should keep in contact with you if they did hear of any injuries in Kern County due to economic poisons?

A. Not so far, no sir.

Q. Had you contacted the State Department of Public Health?

A. No, sir.

Q. Have you contacted any doctors? Have you contacted anybody?

A. No, sir.

In discussing the danger to health of many of the poisons used in table grapes, Edward Lester, President of the Central California Medical Laboratories, a laboratory in Fresno which conducts cholinesterase tests, testified as follows:

THE WITNESS: The Cholinesterase test is a specific measure of nervous damage. It is run in two parts, as I said before. Plasma and red blood cells. It is essential that we determine a specific level in every individual before exposure, so that we have some basis of comparison during the coming season, or in the years to come. Now, this is called an individual worker's base line. Everything else will be compared to this base line.

Now, at the time of exposure, if this is a person's base line of red blood cells and plasma, and exposure is at this period, the plasma is the first one to go down. It is also the first one to return to normal after that worker is no longer exposed to organic phosphates. The RBC follows in this manner. It trails behind the plasma, and this is the one that we are most concerned with in that RBC is the one that reflects more precisely the status of the central nervous system. Once the RBC goes down, it will delay a long time before coming up.

Now, from an economic standpoint, this means that if we can detect early changes in the plasma, it is very easy for us to recommend that such a worker be removed immediately from further exposure, and long before the RBC starts to drop. And becomes dangerous.

This means that we are not dealing yet with clinical symptoms, acute symptomology, but rather, we are dealing with the first preliminary indication of poisoning, and that further exposures will precipitate the clinical symptoms that have been described here today.

Now, if the worker can be removed by running these tests at an early enough stage, we are speaking then of removal from the job on one day, two days, three days, or a week. But once the RBC goes down, we may be speaking of a poisoning situation which may not return to normal for perhaps a month or longer. So, it is essential that we identify poisoning long before clinical symptoms appear.

Now, the curve I have drawn here are nice slopes. Actually, it doesn't work quite that way. Every individual has different reserves to accommodate loss Cholinesterase, as was explained to you by Dr. Milby. Now, we find that when we give an individual with exposure at this point, we find that nothing happens for a considerable length of time. These are reserves that every individual has. Further exposures – they reach various plateaus. In other words, it's not an even drop in Cholinesterase. What I am saying is that at this point, unless this worker were identified, even a small minor exposure will precipitate a fantastic drop in Cholinesterase. I personally have seen this drop from a normal level to this point in less than 30 minutes. At this point, clinical symptoms appear. The victim is prostrate, and we are talking about an emergency situation often requiring heroic measures.

Mr. Allen B. Lemmon, Assistant Director, State Department of Agriculture, who has responsibility for promulgating regulations as to when crews can enter the fields, after they have been sprayed with economic poisons, testified in part as follows:

Q. Currently, what is the time span that might elapse before a farm worker can go in the field after Parathion has been applied?

A. It depends upon the quantity that has been applied as to what can be a safe length of time that must elapse.

Q. Isn't fourteen days the recognized time?

A. There are some cases where labels specify, because of particular dosage, that it must be longer than that.

Q. And what is the longest that you know of?

A. I recall some of twenty-one, and I am not sure whether there are any twenty-eight now or not. They have varied at various times according to the best information the health people can give us.

Q. Now, do you remember in the 1952 incident, how long after application did the workers go into the fields?

A. My recollection from that article was 33 days.

Q. Thank you. I have no further questions.

Robert VanDen Bosch, a professor of entomology from the University of California testified in part as follows:

Q. And water pollution? Is this not an area that concerns you as one who is interested in the integrated control on environment?

A. Well, of course. This is one of the reasons why I am interested in integrated control, because it will bring about a rational and scientific and minimized use of these highly pollutant agricultural chemicals that we are dealing with.

Q. You don't recommend, of course, that at present time we – I will withdraw that. Are you a competitor of the plaintiff in this action?

A. No.

Q. Do you have any type of private practice or private employment?

A. No.

Q. You don't consider then that your school necessarily would conflict with the pest control operators?

A. I think it will conflict with the pest control operators, and I think it will conflict with the chemical industry, because fundamentally, pest control as it is now practiced in the State of California and in the United States of America, is essentially not an ecological matter. It is a – it is largely a matter of merchandising, and this is a fundamental problem in the whole matter of the pesticide problem that we are confronted with today. In essence, we are using the wrong kind of materials in the wrong places at the wrong times in excessive amounts, and engendering problems which increases the use of these materials, adds to the pollution problem, adds to the cost of agricultural pest control, adds to you – you might say – the concern of the general public, and in this essence I belong to a school of entomological research and pest control advocates or the agricultural chemical industry. It simply happens to be that this is one philosophy based against another. And the answer to the situation is – which will prevail. Believe me, having been in this situation for twenty years, it's a long, tough fight and it's a long, tough fight ahead.

Despite the overwhelming evidence of the harm caused by economic poisons, Judge George Brown ruled that the records were not to be seen. He ruled in part: “The importance of the agricultural chemical industry to this valley and this state is enormous, not only in terms of the employment and income which it generates, but in terms of the astronomical increase in productivity and improvement in quality of food and fiber that has accompanied widespread use of agricultural chemicals.”

Clearly, in weighing the interests of the workers against the interests of the industry, Judge Brown recognized that, at least in Kern County, the interests in making profit outweighs the interest in the health of farm workers and consumers.

We are not legislative analysis, but have the following recommendations to make. Any occupational safety and health act passed by Congress should specifically include all farm workers, and should specifically discuss and cover the problem of economic poisons. Any

section providing for effective enforcement of safety and health regulations should specifically provide for civil remedies for parties injured thereby. Before any grower uses any economic poisons, he should obtain a prescription for the use of that poison – much the same as a person being treated for a disease obtains a prescription for medicines from a doctor.

Any employer using organo-phosphates should be required by law to pay for the costs of a cholinesterase testing program designed to protect all persons who could be adversely affected by the phosphate. This would be an initial step in cutting down on the deaths and injuries caused by the economic poison. (Dr. Samuel Simmons, Director of the Division of Community Studies, Office of Produce Safety of the Food and Drug Administration testified on August 1, 1969 before Senator Mondale's Subcommittee on Migratory Labor, that economic poison causes 800-1,000 deaths, and 80,000-90,000 injuries every year in the United States.)

Finally, our history in attempting to obtain the records concerning the use of economic poisons has made us very weary of any protections relating to trade secrets. It seems to us that anyone using economic poisons should disclose fully the nature of the poison used, the nature of the formula used, the time applied, the amount applied, and any other relevant information. Trade secrets may be appropriate for companies such as the Coca Cola Company, but one drop of Coca Cola won't kill you – and one drop of Parathion will.