Environmentalists gear up anti-pesticide hoax

The most stringent state surveys show pesticide residues far below EPA standards, which themselves are set far above the hazardous level. Why the scare then? Dr. Thomas H. Jukes reports.

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On June 28, 1993, *Children and Pesticide Residues in the Diet,* a report by a committee of the National Research Council (NRC), was published together with a news release from the National Academy of Sciences, and an opening statement by the chairman of the report committee, Dr. Philip J. Landrigan, at a press conference in Washington, D.C.

The press conference was originally scheduled for June 29, but the date was moved up because an article by Marian Burros on the report appeared prematurely in the *New York Times* on June 27. Burros was formerly a writer on food for the *Washington Post*.

The news release and statement emphasized the vulnerability of children; indeed, Dr. Landrigan ended his statement with the remarkable prediction that "by taking the special steps we have outlined in our report the federal government could go a long way toward ensuring . . . that America's future is preserved."

The release and statement omitted all previous evaluations of the effect of pesticide residues in food. Some of these are as follows.

1) A National Cancer Institute spokesperson on Aug. 27, 1990 was "unaware of evidence that suggested that regulated and approved pesticide residues in foods contribute to the toll of cancer in the U.S."

2) Dr. Bruce Ames of the University of California, Berkeley, has pointed out that "Americans eat an estimated 1,500 milligrams of natural pesticides per person per day, which is about 10,000 times more than they consume of synthetic pesticide residues." The natural pesticides are produced by plants to protect themselves against pests. The natural pesticides, on the average, are no less toxic than the synthetic ones. Dr. Ames concluded that residues of synthetic pesticides in foods are a negligible hazard.

3) In analyses of pesticides in foods, carried out in 20 states, 1990-91, with 18,928 samples, no pesticides were detected in 70.2% of the samples. In the 1990 program by the Food and Drug Administration (FDA), samples tested were 6,602, no residues found; 58%, residues present but within guidelines; 41%, in violation: 1%.

The FDA has recently reviewed its six-year data from food analyses, 1985-91, among which are 10,000 samples of fresh apples, oranges, bananas, pears, milk, and fruit juices. There were also baked goods, infant cereals, infant formulas, and combination dinners. Less than 0.5% of sampled foods violated federally allowed limits. Raw foods tended to have the highest residues, but washing, peeling, and processing can reduce residues by as much as 99%. This was reported in the May-June 1993 *Journal of Official Analytical Chemists International*.

California has published the results of its own program. In 1988, there were 14,504 samples taken. More than 98.8% of the 9,293 samples of more than 200 different commodities were within the tolerance limits established by the Environmental Protection Agency (EPA). No residues were detected

in 76.1%. Residues less than 50% of tolerance were detected in 19.6%. Residues between 50% and 100% of tolerance were detected in 1.1%. Only 1.16% contained illegal pesticide residues. Of these, 0.94% had residues of a pesticide not authorized for use on the commodity. Only 0.23% had residues that were over the tolerance level. The small fraction (1.16%) that contained "illegal residues" were not necessarily hazardous because the tolerance level is set well below the level of actual hazard.

For the Produce Destined for Processing Program, samples are taken at or after harvest. Of the 997 samples of more than 50 different commodities, only one sample contained an illegal residue.

The results of the 1990 program were presented in the following summary (*Issues in Food Safety*, May 1992, California Department of Pesticide Regulation):

"California spends more than $41 million each year for 'the nation's most comprehensive program to regulate pesticide use.' Results from the nation's largest state residue monitoring program, reported in 'Residues in Fresh Produce—1990,' again confirm that most fresh produce contains no detectable residues and that virtually all residues that are found are well below allowable levels, according to James W. Wells, director of Cal EPA's Department of Pesticide Regulation (DPR).

"The monitoring program includes the marketplace surveillance program, in which commodity samples are taken from throughout the channels of trade—at ports and other points of entry, packing sites, and wholesale and retail outlets.

"Of the 8,278 samples taken of 167 different commodities in the marketplace surveillance program, 8 out of 10 had no detectable residues. Only a fraction of 1% (0.17%) contained residues over the allowable limits. Another 0.62% had residues of a pesticide not authorized for use on the commodity. These detections, usually at low levels, are often the result from drift of a pesticide from its intended target, and do not necessarily indicate a 'safety problem' with the produce tested.

"The report also highlighted results of the DPR's Priority Pesticide Program, in which monitoring is concentrated on pesticides of special health interest. In this program only those crops known to have been treated with a targeted pesticide are tested. Because the crops are known to have been treated, DPR obtains the most accurate data on which to base estimates of dietary exposure.

' "Of the 2,598 samples taken in this program, 92% had no detectable residues,' said Wells. 'The Priority Pesticide program is a key element of our food safety program and we feel these results clearly confirm what scientists have said for many years: The "problem" of pesticide residues in fresh produce is more one of perception, than reality.' "

In short, the surveys show that a significant problem does not exist.

As Dr. Landrigan noted, the EPA tolerance limits for pesticide residues are set by dividing the no-effect level by 100, and "EPA then divides this number again by 10 if studies have shown effects on the developing fetus."

Dr. Landrigan says, "We believe that EPA should consider using an additional factor of up to 10 when there is evidence of postnatal toxicity." This would not be applicable to samples with undetectable residues.

4) Perhaps most important of all, risk-benefit analyses have led public health authorities to the conclusion that the health benefits, including possible cancer prevention, from fruits and vegetables, far outweigh any deleterious effects of pesticide residues. This was emphasized in the case of children, by the California Department of Public Health at the time of the Alar apple scare. Indeed, Dr. Landrigan does not challenge the conclusion because he says "parents should continue to emphasize fruits and vegetables in their children's diet." So why does he call for a new program?

During the week preceding the release of the report, Natural Resources Defense Council (NRDC) and Environmental Working Group (EWG) issued statements that children are at risk from pesticides, and even revived the discredited claims made against Alar. Other participants in this campaign included Consumers Union, Audubon Society, World Wildlife Fund, and Mothers and Others for a Liveable Planet. The Clinton administration (EPA, FDA, and USDA) issued a joint statement on the same day, June 25, as the EWG, saying "We expect to use the upcoming reports of the National Academy of Sciences and the EWG on children and pesticides as a basis for formulating the legislation and regulatory policies."

It is unusual for comments to be made prior to the release of the report.

Comments

Some main points of the statement and press release, together with my comments, are:

Statement: "The federal government's decision-making process for pesticides does not pay sufficient attention to the protection of human health, especially the health of infants and children. . . . Children are not just little adults."

Comment: The decision-making process is *based* on the protection of human health. The safety margins are sufficiently wide to allow for protection of consumers of all ages.

Statement: "We recommend that the government have as its clear goal the setting of tolerances that more fully protect human health."

Comment: This goal has been met. Pesticide residues in foods do not endanger human health, as noted by National Cancer Institute.

Statement: ". . . by taking the special steps we have outlined . . . the federal government could go a long way toward ensuring . . . that America's future is conserved."

Comment: This somewhat pompous prediction may be compared with the actual dangers to children. These include infectious diseases, nutritional deficiencies, parental neglect

and mistreatment, exposure to cigarette advertising, violence, and drugs.

The lack of immunization against childhood diseases is a major problem. This has been emphasized by the Centers for Disease Control, which estimate that vaccination of children is at a rate of only 60%. Immunization of many children is needed against whooping cough, measles, mumps, polio, diphtheria, tetanus, rubella, and hemophilus influenza type B. The vaccines for all these diseases are available from public clinics. However, access to them is limited, and the immunization rate for children below the age of 2 is low, especially in the inner cities (only about 10%).

Statement: "We believe that EPA should consider using an additional factor of up to 10 when there is evidence of postnatal toxicity."

Comment: EPA uses this additional factor if studies have shown an effect on the developing fetus (i.e., prenatal toxicity). This precaution would appear to be sufficient to protect against postnatal toxicity.

Summary

1) Analyses of foods show that in most cases pesticide residues were not detected, and in nearly all other cases, the residues were within tolerance limits. These findings show that the problem is a very minor one, regardless of other circumstances.

2) A National Cancer Institute spokesperson on Aug. 27, 1990, states he was "unaware of evidence that suggested that regulated and approved pesticide residues in foods contribute to the toll of human cancer in the U.S."

The National Center for Health Statistics states that age-adjusted cancer mortality rates among white children ages 0 to 14 years have decreased by 35% between 1973-74 and 1985-86.

3) Various public health authorities agree that protection against cancer by fruits and vegetables outweighs any effect of pesticide residues.

4) Pesticides kill pests. Plant protectant chemicals (pesticides) include fungicides. These make a contribution to prevention of cancer by destroying molds that produce carcinogens in food. Organic foods are not protected against molds.

5) Major problems for infants and children, outweighing pesticide residues, are immunization against childhood diseases and the need for adequate protection against traumatic injuries and nutritional deficiencies.

6) Tolerance limits for pesticides are set with a margin of safety of one-hundredth of the no-effect level. This is wide enough to protect infants, children, and adults.

7) Natural pesticides are present in food at levels approximately 10,000-fold the levels of synthetic pesticides.

8) The existing programs to analyze foods for pesticide residues are extensive and adequate. The concern about pesticide residues has been blown out of all proportion.

Conference Report

U.S. health risk testing is 'worthless'

by Mark Wilsey

The legal and heath issues arising from governmental regulations were the focus of a conference entitled "Hazardous to Your Health: Toxics, Torts, and Environmental Bureaucracy," hosted June 8-9 in Washington, D.C. by the Independent Institute. The conference highlighted government policies that the participants contend are "seriously flawed both economically and environmentally," which have helped create a situation in which an explosion of litigation threatens to cripple the "competitiveness of American business and labor." Topics ranged from Superfund cleanup to risk and liability.

Aaron Wildavsky, Professor of Political Science and Public Policy at the University of California at Berkeley, spoke before the conference on a panel on hazardous substances. He has written numerous books and papers on the subject. In his talk, Wildavsky described the nature and magnitude of the problem as it pertains to the use of animal cancer tests in determining human cancer risks. He said that due to the faulty methodology of animal cancer tests, the results will never be good enough to be considered a valid basis for predicting human cancer. The simple fact is that humans will rarely, if ever, encounter the same high dosage of suspected carcinogens that are given to laboratory animals.

Ludicrous extrapolations

To extrapolate from animal tests to humans, a number of assumptions must be made. It is assumed that the biology of the test animal is similar to that of humans, that an adjustment can be made for the huge human population compared to a limited number of test animals, and that the vast difference in dosage given to animals compared to human exposure does not render the results invalid. Depending on the assumptions made and the statistical models derived from them, the results can vary greatly.

Wildavsky observed that if at the end of this exercise all we know is that the exposure to a chemical given to rats is thousands of times greater than human exposure, then we know nothing of value. And regulations based on such results make little sense, except to provide a spectacularly large margin of safety. He notes that there are limited health benefits in eliminating tiny amounts of synthetic chemical resi-