EDB Contamination Kindles Federal Action

After 7 years, the Environmental Protection Agency finally proposes a complete phaseout of the pesticide, but that upsets USDA

Florida's recent action in banning the sale of more than 70 grain products contaminated with the pesticide ethylene dibromide (EDB) has brought to the boil an issue that has been simmering on the back burners of federal regulatory agencies for 7 years. The Environmental Protection Agency (EPA) first moved to control uses of EDB in 1977, but protests from manufacturers and users and lack of attention during the first 2½ years of the Reagan Administration have so far thwarted federal action.

Florida decided to take matters into its own hands and pulled off grocer's shelves a variety of nationally marketed grain products under brand names such as Betty Crocker, Aunt Jemima, and Pillsbury. Other states have since found EDB-tainted products in their territories, which has sent EPA scrambling to determine what levels of the pesticide should be permitted in food. Farmers and food manufacturers, fearing that the agency could declare a large portion of the nation's grain supply inedible, have called on Secretary of Agriculture John Block to press their case with EPA administrator William Ruckelshaus.

EDB is a popular pesticide because it is effective and versatile. For the past 40 years, farmers have applied EDB to control insect infestation in stored grain. For 20 years, many grain companies have fumigated milling machinery with the chemical. More recently, use of the pesticide has broadened. Farmers in the Southeast and Southwest have injected EDB into soil to kill nematodes before planting crops. During the 1981 medfly crisis, California fumigated fruit grown in-state with EDB and subsequently required imported fruit—primarily that shipped from Florida and Texas—to undergo EDB fumigation. Florida and other states also fumigate citrus fruit shipped to Japan.

State and federal officials now realize that EDB's extensive use has led to a widespread problem. A significant portion of the country's processed grain products may have some contamination, according to EPA's expert on the pesticide, Richard Johnson. So far, he says, 30 percent of the packaged grain products tested by various sources show contamination. (Preliminary studies by Florida indicate that cooking may dissipate about 80 percent of the pesticide, but more experiments are being conducted.)

Florida Division of Tourism

In the late 1970's, researchers discovered that EDB doesn't dissipate in food as previously assumed. Pesticide residues can persist in fumigated citrus fruit for several days and in grain for months.

Last summer California, Florida, Hawaii, and Georgia discovered that ground water in various areas was polluted with EDB from soil fumigation. Most recently, California announced that Florida citrus shipped to the state had worrisome EDB concentrations in the pulp.

The danger to humans from low-level, long-term exposure is not yet clear because no reliable epidemiological studies are available. But according to EPA documents, animal studies demonstrate that EDB is highly toxic. Experiments show that the chemical causes cancer, gene mutations, and reproductive damage in a variety of animal species. Studies by federal agencies in the 1970's indicated that the pesticide is carcinogenic in rats and mice at 20,000 parts per billion (ppb). If EDB were a new chemical, it would never pass muster with current environmental law, according to several federal environmental officials.

Given the animal data and the recent reports of contamination in water and food, EPA officials are now trying to decide whether the agency should issue stricter regulations by declaring an immediate end to all uses of the pesticide. In September, it banned the sale and distribution of EDB as a soil fumigant and said it wants a phaseout of other uses over the next year. The phaseout, however, has been appealed by members of the agricultural community, the chemical industry, and the U.S. Department of Agriculture (USDA). This could delay full cancellation of all EDB use until 1986. EPA's task is also complicated by the fact that the Reagan Administration's Caribbean Basin initiative promotes the importation of tropical fruit from Caribbean countries. USDA import regulations cannot be met without use of the pesticide. The U.S. Agency for International Development, at the urging of USDA, is currently deciding whether it too should appeal EPA's action.

EPA officials are also working feverishly to determine what concentration of the pesticide should be allowed in food because currently there is no federal tolerance standard for EDB. Florida officials, without waiting for federal guidance, concluded that 1 ppb is unacceptable. The 76 products that were banned contained an average range of 15 to 20 ppb of the pesticide, but one food sample went as high as 755 ppb. The Grocery

Manufacturers of America, a national trade group, is fighting the ban tooth and nail but so far has been unsuccessful in obtaining a federal injunction. EPA is expected to announce a standard within the next month.

Regulatory action on EDB has been impeded by two factors. When EPA suspects that a pesticide poses an unacceptable health hazard, federal law requires it to develop regulatory proposals by weighing the risks and benefits and then seeking public comment. In the case of EDB, industry objected at every step of the way. And under former EPA administrator Anne Burford further progress came to a virtual halt.

After EPA gave notice in 1977 that it intended to regulate the pesticide on the basis of the animal data, the process from start to regulatory finish was to last 43 weeks. The procedure bogged down immediately. Industry inundated the agency with documents disputing the findings. It also insisted that there were no good alternatives to replace the pesticide. Three years later, EPA had completed only the first step of the review.

In December 1980, just before the Carter Administration exited, the agency issued a comprehensive report that rejected almost all the criticisms raised by the chemical companies and the agricultural community and went on to propose greater restrictions on EDB's use. The report, written by Johnson, proposed severe limits on EDB's use as a soil fumigant. At that point, EPA did not call for an outright ban because it lacked firm evidence of ground water pollution. It also recommended a gradual elimination of EDB as a fumigant of stored grain, milling machinery, and citrus fruit, arguing that the potential economic losses would be negligible to farmers and others. It proposed a phaseout in 3 years to allow the food industry sufficient time to develop alternatives to the pesticide. In the long run, EPA contended, the health risks far outweighed the financial considerations. The agency came to this conclusion after it uncovered some startling findings.

For decades, it was generally assumed that the pesticide was volatile and left no residue in food. In the late 1970's, however, a number of researchers discovered that the pesticide does not dissipate. One study showed that EDB persisted in wheat with levels reaching 500 ppb 3 months after fumigation. EPA's own scientists confirmed the problem of contamination. From a USDA laboratory, EPA officials obtained batches of wheat flour that had been distributed across the country as part of federal food subsidies, including the School Lunch Program. EPA scientists reported in 1980 that all the samples contained the pesticide. (Later analyses in 1981 revealed that some of these wheat samples contained up to 4200 ppb. The samples were then made into biscuits, which registered levels averaging about 37 ppb.) Armed with the 1980 information and results from several other studies on EDB residue in grain and citrus fruit, the agency calculated that exposure to the pesticide in an average diet could increase a person's risk of cancer by a factor of 3 in 10,000. In the past, an increased cancer risk of even 1 in 1,000,000 triggered regulatory action.

The agency's recommendations were coldly received by the new Reagan appointees. Block wrote EPA, prior to Burford's arrival, that the proposed cancellation was unacceptable because alternatives could not be developed by the 3-year deadline even though EPA had concluded the industry could substitute other pest control methods for the pesticide. He said the proposal would also place financial burdens on the food industry. He did not acknowledge EPA's concern about the health risks of the pesticide through dietary exposure, except to state that he wanted more data to determine residues in food.

The pesticide issue was also stymied at EPA by John Todhunter, then head of the Office of Pesticides and Toxic Substances, who resigned in the wake of Burford's controversial departure. A hearing held in September by Representative Mike Synar (D–Okla.), chairman of a subcommittee of the Government Operations Committee, revealed that Todhunter had demanded numerous revisions of the agency's EDB report.

Florida Flip-Flops on EDB

Florida seems to want to have its cake and eat it too when it comes to the issue of ethylene dibromide. On one hand, the state's agriculture department acted aggressively and banned the sale of food products that contain minute amounts of EDB. On the other, the department is also trying to protect the state's profitable citrus and vegetable crops and has repeatedly objected to stricter regulation of the pesticide by the Environmental Protection Agency (EPA). The discrepancy between Florida's actions on the pesticide stems from the existence of two separate groups of officials within the state's department of agriculture that apparently do not see eye to eye on EDB.

One branch, the department of citrus, has consistently argued that the economic and agricultural benefits of EDB far outweigh any health hazard. It maintained this position even though studies in the late 1970's showed EDB residues persist in fumigated fruit. California, however, reported in December that recent shipments of Florida citrus were tainted with unusually high levels of EDB and expressed concern. Florida subsequently ceased shipment of all EDB-fumigated fruit to California until the federal government develops a tolerance level. This loss of market could cost the Florida citrus growers, already hard hit this winter by freezing weather, millions of dollars.

The citrus department's attitude toward EDB contrasts markedly with its bureaucratic sibling, the department of health and rehabilitative services. EDB "has no business being there [in food]," states Thomas Atkinson, chief of the state's environmental epidemiology branch. How does one account for the difference of opinion between the two departments? One possible explanation is that the ban on EDB-contaminated grain products doesn't inflict major losses on the state's own economy, while cutting off exports of EDB-fumigated fruit does.

Florida has another headache related to EDB. Farmers have used the pesticide extensively as a soil fumigant. Studies completed since last summer show that 500 wells in 12 counties have detectable levels of EDB. One well had concentrations in a range of 300 to 600 ppb, according to EPA chemist Stuart Cohen. The severity of the problem may stem from a bureaucratic snafu by the USDA and EPA. A USDA handbook contained instructions to apply the pesticide much more frequently and at higher concentrations than EPA recommends. Farmers apparently heeded the agriculture department.—**M.S.**

Synar also presented documents indicating that Todhunter and associates held private meetings with members of Florida's citrus growers and vegetable industry. Todhunter at the hearing denied he attended some of the meetings; another. he insisted, had no influence on the agency's decision-making. According to recent interviews with EPA officials, Todhunter also gutted the agency division in charge of handling these types of special pesticide reviews. Although the agency had some 90 pesticides on a roster for reexamination, Todhunter slashed the staff from 128 to about 20.

Time trickled away until last summer when California reported ground water contamination. The discovery was "the straw that broke the camel's back," said Johnson, who is still head of the agency's EDB team. After a 3-year hiatus, the agency set to work on a new set of regulations. In 2 weeks, Johnson and colleagues produced another lengthy report and pushed even harsher rules. Based on additional information, EPA calculated that the cancer risk was an order of magnitude higher than its 1980 estimates.

Again, the citrus industry, farmers, and chemical companies objected and have formally appealed EPA's action on the grounds that there are no good alternatives to the pesticide. USDA, which recently held private meetings with industry, has also intervened. Settling the differences could take another 2 years, but the revelation of EDB-tainted food and heightened public awareness may speed up the process.

EPA has said that several methods show promise as a substitute for EDB fumigation, but they have all been poohpoohed by the agriculture department. According to EPA, citrus fruit could be treated by irradiation or another procedure that subjects fruit to cold temperatures; for stored grain, other chemicals could be applied. Florida citrus growers protest that without EDB, they will lose the $25-million grapefruit market in Japan. The Japanese government, however, has accepted citrus fruit treated by the cold storage method "for a long time," says Hisao Azuma, an agriculture official at the Japanese embassy in Washington.

Despite EPA's desire to regulate the pesticide since 1977, efforts at USDA to help farmers and citrus growers develop other methods have been meager, according to a recent study on EDB by the General Accounting Office. In a briefing submitted last spring to Representative George Brown, Jr. (D–Calif.), chairman of the Agriculture Committee's subcommittee on research, the General Accounting Office said studies by USDA have "been limited to short-term research projects. . . . This crisis-oriented research resulted in the postponement of broader-scoped, long-term research." It noted that since 1977, it has twice advised USDA to develop an agency-wide plan for research and development, but to no avail. An EPA official recently put it this way, "Without an all-out cancellation industry wouldn't consider alternatives. Now we're canceling and they're screaming there are no alternatives."

The General Accounting Office also faulted EPA's regulatory process. It cited several problems, concluding that the agency has "emphasized starting, but not completing the process, planned poorly, [and] not resolved several important policy and procedural issues. . . ."

One interesting fact in EDB's regulatory history is that the House Agriculture Committee, which has jurisdiction over pesticide use, has yet to examine the problems with the pesticide and EPA's role. Despite the strong criticisms by the General Accounting Office, Brown did not pursue the matter with his usual keen interest in pesticide problems. Some sources allege that other committee members told Brown to lay off EDB because of its wide importance to their constituents, but Brown denies this. Nevertheless, Synar and other legislators are going after the topic. Senator Dave Durenberger (R–Minn.), chairman of the oversight subcommittee of the Environment and Public Works Committee, will hold an EDB hearing on 27 January.

EPA is now pondering what to do next. On the issue of citrus fumigation, Edwin Johnson, head of EPA's Office of Pesticide Programs, says that the agency may choose a tolerance standard "at the lowest level we can set and still fumigate effectively." With grain products, Richard Johnson believes that Florida's cutoff point of 1 ppb is probably too harsh. Although he had hoped that EDB's use as a grain and citrus fumigant would have ended last summer, Johnson says 1 ppb standard would be too disruptive to the nation's economy and its food supply. "We are not dealing with a crisis [to health]," he said. Noting that the agency has already taken 7 years to achieve any substantive regulation of EDB, "Another year is not going to make that much difference." Meanwhile, the special review process at EPA has not been overhauled, its staff has not been reconstituted, and the list of pesticides slated for reevaluation continues to grow.

—MARJORIE SUN

University of California Sees Budget Turnaround

A rise in state revenues has prompted California Governor George Deukmejian to propose an increase in the public higher education budget that would bolster the sagging fortunes of the University of California (UC). With the state now running a surplus in its budget, Deukmejian is asking for a total of nearly $1.5 billion for 1984–1985 in state funding for the nine-campus university, representing a $241 million, 20 percent increase over this year. Some $113.7 million of the increase would go to raise salaries a total of 13 percent during the period.

UC President David P. Gardner warmly welcomed the governor's initiative, saying that "If approved by the legislature, the Governor's budget will be a major turning point in the University's history. The budget does more than just hold the line; it reverses a long period of deterioration that we have been experiencing."

The university has undergone a 16-year siege of tight finances under the administrations of Governors Ronald Reagan and Jerry Brown, each of whom served two 4-year terms in office; both departed from the relatively indulgent fiscal treatment of the universities practiced by earlier governors. In recent years, inflation and the effects of Proposition 13, which restricted the growth of local tax revenues, put added pressure on funding for higher education.

As a result, UC faculty salaries had declined relative to those of faculty in the leading public and private universities to which UC is generally compared. The university's building program was sharply restricted, the UC plant showed the effects of a long stretch of deferred maintenance, and the university program suffered from obsolete equipment and shortages of supplies.

The system's Berkeley campus, the UC flagship campus and a perennial among the leaders in national ratings of universities, had maintained its standing in recent surveys. However, partisans of the university had noted the departure of some able faculty for higher salaries elsewhere and warned that the university's academic distinction was threatened. The slippage in