Critics Weigh EPA Herbicide Report, Find It Wanting

A group of scientists and consumer representatives have issued a harsh critique of a scientific report commissioned by the Environmental Protection Agency (EPA), which recommends that EPA administrator William Ruckelshaus remove existing bans on certain uses of the powerful weed killer 2,4,5-T.

For the last 2 years, 2,4,5-T has been a subject of controversy—especially after it was found that the herbicide was contaminated by an extremely potent animal teratogen, called dioxin. The herbicide was also widely used as a defoliant in Vietnam, where an AAAS study team in 1970 found evidence of a possible correlation between the spraying of 2,4,5-T and the incidence of stillbirths and birth defects (*Science*, 8 January).

Acting on this evidence, the EPA in April 1970 suspended the use of 2,4,5-T in Vietnam and banned its use on food crops, around households, and in areas near water. The EPA report, which has not been made available to the public, is intended to supply Ruckelshaus with a basis for deciding whether to sustain, expand, or abolish present restrictions. His decision may void the appeals of Dow Chemical Company and Hercules Corporation to EPA, which have permitted them to continue the sale of the product for use on rice and some corn crops, and as a nonliquid weed killer for home use.

Of the ten-member panel of scientists, selected from a list drawn up by the National Academy of Sciences and headed by James G. Wilson, professor of research pediatrics and anatomy at the University of Cincinnati, all but one recommended that the restrictions be lifted. They qualified their endorsement of the herbicide with the recommendation that no more than 0.1 part per million be permitted in drinking water and that the formula should contain no more than 0.1 part per million of dioxin.

They also recommend that formulations to be used around residences should be labeled to warn off pregnant women. Finally, they urge further study of dioxin's activity in soil and food chains, as well as continuous testing of other agricultural chemicals after they have been registered for use.

The Committee for Environmental Information (CEI), headed by Barry Commoner, and various environmentalists, notably Harrison Wellford of Ralph Nader's Center for the Study of Responsive Law and Samuel S. Epstein, chief of the Laboratories of Environmental Toxicology and Carcinogenesis of the Children's Cancer Research Foundation and executive secretary of the Environmental Mutagen Society, have criticized the secrecy surrounding the report and the procedures and findings of the committee.

The critique was written up by CEI's scientific advisers, most of them from Washington and St. Louis universities. Among scientists who have endorsed it are Arthur Galston, professor of biology at Yale University, James F. Crow of the University of Wisconsin's genetics laboratory, and Matthew Meselson, the Harvard biologist who headed the AAAS Vietnam study.

The CEI group raised these five major objections to the EPA committee report:

1) The committee has accepted the idea that low-level doses of dioxin will not affect animals, despite the fact that scientific tests have been unable to discover a "no effect" dosage.

2) The committee concludes that 2,4,5-T will quickly break down in the environment, although there remain questions as to its ability to degrade in air and water.

3) The committee dismisses the possibility that dioxin can accumulate in body fat, even though there is evidence that it can accumulate in tissues other than fat in monkeys and chicks.

4) Despite the findings implicating 2,4,5-T in Vietnamese birth defects, the committee asserts that "any attempt to relate birth defects or stillbirths to herbicide exposure is predestined to failure." In other words, say the critics, almost anything short of a thalidomide-type episode is dismissed as insufficient evidence.

5) The committee fails to evaluate the benefits of 2,4,5-T as opposed to its risks, thus offering no guidance on the economic consequences of finding alternatives to the questionable herbicide.

Epstein, who outlined the CEI group's complaints at a press conference in Washington, did not call into question the integrity or competence of the scientists involved in the study; however, he said the report relied heavily on unpublished data, ignored other relevant data, and was replete with "unwarranted assumptions." As such, it would not stand up well under scrutiny by other scientists, and "if it can't hold its own in the open scientific community"—and EPA committee members acknowledge that the report is not suitable for publication—"it clearly cannot hold its own in the decision-making process."

Most of the CEI group's concerns are voiced in the dissenting report by committee member Theodor D. Sterling, a biostatistician at Washington University, who pointed out that many of the experiments the study relied upon were simply not sophisticated enough to supply a basis for judgments.

That experts differ is not new. But Wellford, who just wrote a book about pesticides and meat,* believes that the 2,4,5-T controversy has become "a battleground of opposing philosophies about the relationship between technological risk and human safety." In his opinion, the panel is, in effect, advocating "that the public should be exposed first and the experiments done afterwards." This, he says, reflects the thinking of classical toxicologists, who look for acute, short-term causes and effects, as opposed to the long-term approach of specialists in fields such as cancer and teratology. Thus, to the former group, says Wellford, a compound like 2,4,5-T, which has proved to be an effective herbicide in land and waterway management for over 20 years, would be innocent until proven guilty.

—CONSTANCE HOLDEN

* The book, *Sowing the Wind: Pesticides, Meat and the Public Interest*, will appear next November. Bound copies of the 489-page manuscript are available for $15 ($10 for students) from the Center for the Study of Responsive Law, 1156 19th St., NW, Washington, D.C. 20036.