

Defenders Say Environment —And Especially People— Endangered Without It

A BILL has been introduced before Congress to ban the nationwide sale of DDT.

Sen. Gaylord Nelson of Wisconsin has forced upon our elected representatives the necessity of making a decision.

They must decide who shall have priority of protection—people, or certain birds and fish.

The decision should be easy.

There is even a question of whether defeat of the bill would mean defeat (much less doomsday) for the birds and fish. There is strong evidence, however, that banning DDT could eventually impose death or a life sentence of misery upon literally thousands of people around the world.

Lawmakers will be weighing the merits of the case against DDT with the findings of a recently completed 18-month study conducted at the request of the U.S. Department of Agriculture.

Fifteen scientists of the National Academy of Sciences and National Research Council heard 83 principal witnesses. These spokesmen included authorities from scientific and conservation organizations, industry, universities and government agencies.

A full report of their study may be obtained from Press Service, Office of Information, USDA, Washington, D.C. 20250. A summary of the committee's conclusions and recommendations follows:

Conclusions

1. Persistent pesticides are contributing to the health, food supply,

and comfort of mankind, but, in the absence of adequate information on their behavior in nature, prudence dictates that such long-lived chemicals should not be needlessly released into the biosphere.

2. Although persistent pesticides have been replaced in some uses and are replaceable in others, they are at present essential in certain situations.

3. No decrease in the use of pesticides is expected in the foreseeable future. On a world basis, increased use is probable.

4. Although the use of DDT has decreased substantially, there was no important change in the use of other organochlorine insecticides in the United States during the 10-year period ending June 30, 1967.

5. Available evidence does not indicate that present levels of pesticide residues in man's food and environment produce an adverse effect on his health.

6. Registration requirements for persistent pesticides appear to provide adequate safeguards for human health, but continuing attention must be given to accommodating new knowledge and insuring against subtle long-term effects.

7. Residues of certain persistent pesticides in the environment have an adverse effect on some species of wild animals and threaten the existence of others.

8. The availability and low cost of effective persistent pesticides have slowed the development and adoption of alternative methods of control.

9. Work on nonchemical meth-

ods as alternatives to persistent pesticides has been emphasized in recent years, and continued support for this work is needed.

10. Inadequate attention and support are being given to developing pesticidal chemicals and to improving techniques for using them.

11. Persistent pesticides are of special concern when their residues possess—in addition to persistence— toxicity, mobility in the environment, and a tendency for storage in the biota.

12. A few organochlorine insecticides and their metabolites have become widely distributed in the biosphere, appearing in the biota at points far from their places of application.

13. The biosphere has a large capacity for storage of persistent pesticides in the soil, water, air, and biota, but little is known concerning amounts of persistent pesticides and of their degradation products that are stored in the biosphere.

14. Knowledge is incomplete concerning the fate and degradation of persistent pesticides in the environment, their behavior in the environment, the toxicity of the degradation products, and the interaction of these products with other chemicals.

15. Present methods of regulating the marketing and use of persistent pesticides appear to accomplish the objectives of providing the user with a properly labeled product and holding the amounts of residue in man and his food at a low level. However, they do not appear to insure the prevention of environmen-

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The Case for DDT

Up With People

And Down With the Venomous Foes of Chemical Pesticides

Scientist Testifies

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- tal contamination.
- 16. Public demand for attractiveness in fruit and vegetables, and statutory limits on the presence of insect parts in processed foods, have invited excessive use of pesticides.
- 17. The National Pesticide Monitoring Program provides adequate information about residues in man and his food, but it does not provide adequate information about the environment generally, because it can detect changes in residues only in selected parts of the biosphere.
- 18. Contamination of the biosphere resulting from the use of persistent pesticides is an international problem. Changes in techniques for

using these pesticides and the substitution of alternatives here and abroad are questions of immediate concern to all mankind.

Recommendations

- The Committee recommends—
- 1. That further and more effective steps be taken to reduce the needless or inadvertent release of persistent pesticides into the environment.
- 2. That, in the public interest, action be increased at international, national, and local levels to minimize environmental contamination where the use of persistent pesticides remains advisable.
- 3. That studies of the possible long-term effects of low levels of persistent pesticides on man and

- other mammals be intensified.
- 4. That efforts to assess the behavior of persistent pesticides and their ecological implications in the environment be expanded and intensified.
- 5. That public funds for research on chemical methods of pest control be increased without sacrifice of effort on nonchemical methods.
- 6. That the present system of regulation, inspection, and monitoring to protect man and his food supply from pesticide contamination be continued.
- 7. That the objectives and procedures of the National Pesticide Monitoring Program be reviewed and that the feasibility of obtaining data on quantities of persistent pes-

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USDA Pesticide Suspension Order No 'Confession'

USDA's suspension from use of nine pesticides should not be interpreted as an "admission" that these chemicals are harmful to wildlife and people, a Department spokesman told WTT's editor shortly after the announcement was published in mid-July.

One of the pesticides is DDT, which Sen. Gaylord Nelson of Wisconsin is seeking to ban nationwide through a bill now before a congressional subcommittee.

Questioned about the timing and effect of the USDA suspension with regard to this legislation, the spokesman spelled out USDA's position generally on chemical pesticides:

"We are categorically not in favor of any action that represents an across-the-board ban on DDT or any other pesticide. Any action that's taken should be on a case-by-case basis."

The spokesman added that he did not believe the Nelson bill would pass.

The suspension on the use of nine chemicals isn't necessarily permanent, the spokesman pointed out. Rather, it is for the duration of the review, expected to be completed within 30 days.

"Some programs may require a quick decision and be reinstated before 30 days," he said. "On other programs, the review (and suspension) may need to be extended."

The review was initiated, the spokesman explained, just to "show response to the NAS (National Academy of Sciences) study and recommendations and the request of wildlife conservationists."

A report by NAS and the National Research Council had recommended that "further and more effective steps be taken to reduce the needless or inadvertent release of persist-

ent pesticides into the environment."

The spokesman said the review is to see if in fact there are more effective steps that could be taken on those programs carried out by USDA.

"Basically, we'll be looking for effective alternatives," he said, since, repeating the words of the release, "USDA programs in the past have been carefully planned and carried out to insure maximum safety to man, animals and our natural resources."

It is the Department's intention, he said, to carry out the review so that it "won't unduly delay" critical programs.

The suspension order affects programs of the Agricultural Research Service and the Forest Service involving any planned applications of DDT, dieldrin, endrin, aldrin, chlordane, toxaphene, lindane, heptachlor, or BHC.

Bills Ask DDT Ban; Pesticide Commission

Summaries of Wisconsin Senator Gaylord Nelson's two bills affecting DDT follow.

Bill 1753 would amend the Federal Insecticide, Fungicide and Rodenticide Act by adding Sec. 17. The paragraph would make it unlawful for any person to distribute, sell, or offer to sell, DDT in the U.S. after June 30, 1970. It also would be unlawful to receive DDT from any foreign country.

Bill 1799 would establish a National Pesticide Commission. Under provisions of this bill, the President would appoint three representatives from government agencies, three from the scientific and medical professions, two each from conservation and agricultural organizations and two from private enterprises for a term of three years.

The commission would be responsible for:

1. Determining and evaluating the present usage of pesticides;
2. Reviewing existing limitations on pesticide use and



Senator
Gaylord
Nelson

current labeling requirements;

3. Recommending standards of safety for pesticides in water;

4. Developing a continuing monitoring program for pesticides in the soil, air, water, wildlife, fish and humans;

5. Fostering research in the development of less persistent, less toxic pesticides;

6. Initiating basic research into the degradability of pesticides;

7. Conducting research on the effects of pesticides on the environment, fish and wildlife and humans; and

8. Making recommendations on the elimination or limitation of use of certain pesticides to the President and Congress.

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icides in the biosphere be studied.

No Danger to Humans

The strange aspect of the DDT controversy is that the cry for a total ban on usage comes at best on the basis of questionable evidence of damage to wildlife. And this absolute position is taken without apparent regard for the consequences that people would suffer.

Evidence to the contrary is too strong for opponents to contend that DDT is a threat to human life.

The summary of a study conducted by the National Communicable Disease Center at Atlanta, Ga., states:

"A study was made of 35 men with 11 to 19 years of exposure in a plant that has produced DDT continuously and exclusively since 1947.

"Findings from medical history, physical examination, routine clinical laboratory tests, and chest X-ray

attributable to exposure to DDT. film did not reveal any ill effects. It was estimated that the average daily intake of DDT by the 20 men with high occupational exposure was 17.5 mg per man per day as compared to an average of 0.04 mg per man per day for the general population."

Dr. Thomas H. Jukes, a biochemist at the Space Sciences Laboratory at the University of California, described recently the greatest "experiment" with DDT. It took place in India with American assistance. It began in 1953 and was stepped up in 1958.

The success of the program "depended upon the fact that DDT is a residual insecticide," said Dr. Jukes.

"At the start, there were 75 million cases of malaria in India, and life expectancy for Indians was 32 years. By 1962, 147,593,270 pounds of DDT had been used, and life expectancy had jumped to 47 years. By 1967, there were fewer than 100,

000 cases of malaria in India.

"DDT is safe, and has been studied more than any other pesticide for its effects on human beings," Dr. Jukes said.

"Without pesticides, there wouldn't be enough food to go around. Most important DDT is needed by the millions of people because it is a cheap, safe residual pesticide."

At one time malaria killed two million people and left millions of others debilitated from the disease each year, another biochemist testified recently.

Ban would Be 'Disastrous'

Dr. Wayland J. Hayes, former Chief of Toxicology for the U.S. Public Health Service and now a professor at Vanderbilt University, Nashville, Tenn., said that while malaria isn't a threat to public health any longer in the U.S., it remains a major killer of people in many parts of the world.

"DDT still remains the most important single tool for control of malaria," he said.

A ban on DDT would prove "disastrous," as undoubtedly there would be a resurgence of malaria without it.

There would be a particularly adverse effect on the control of malaria in emerging nations which look to the U.S. for leadership.

Dr. Hayes said he feared people in other countries would feel that if DDT were banned in the U.S., it would not be safe for use in their countries, and that many human lives would be needlessly lost.

Dr. Jukes, agreeing, cited an article that predicted the campaign against pesticides could cause deaths and sufferings greater than those of World War II.

DDT Does Break Down

Dr. Hayes testified at public hearings on a proposal to impose a state ban on DDT in Wisconsin. Other witnesses questioned the very basis of Dr. Wurster's position against DDT that it is permanently stored and that the buildup is now endangering certain species of wildlife.

"I know of no natural situation where DDT is not degraded," stated Dr. Paul E. Porter, an associate member and consultant to pesticide commissions of the International Union of Pure and Applied Chemistry.

In addition, Porter said DDT does

not build up in plant life, soil water, fish, or mammals, beyond a naturally reversible plateau. When this level is reached, he said, it remains balanced between intake and dissipation.

Porter said DDT is broken down by nature in soil and degraded to far less toxic compounds by the action of micro-organisms present. On vegetation, it is broken down by sunlight and is additionally dispersed by rain and evaporation.

Since DDT adheres to soil particles it is not readily moved by water, making the compound relatively stable, he advised. However, what remains of DDT and its metabolites disappears at an approximate rate of 20% per year, regardless of concentration.

In streams, lakes, and ocean waters, DDT and its metabolite DDE are absorbed on matter which is present, with a considerable portion sinking to muddy water beds.

In mammals and birds, studies reported degradation of DDT through internal chemical action and excretion. A portion of the chemical components are stored in fat, but here again a stored level is reached, Porter testified, with no additional buildup of DDT residues in the animal.

Abnormally high levels of DDT residue reportedly found in many wildlife species may have been inaccurately measured and exaggerated, said Francis B. Coon, chief of the Wisconsin Alumni Research Foundation's chemical department.

"PCBs," polychlorinated biphenyls, Coon pointed out, are compounds that produce an almost identical picture to DDT when analyzed on a gas-chromatograph, an analytical instrument which "fingerprints" chemical compounds.

Until this confusion between DDT and PCBs was recently discovered, most gas chromatographic assays overstated the amount of DDT above that actually in the sample, due to the presence of the PCBs.

Birds Not Affected

DDT-fed pheasants, testified Dr. Frank Chermis, University of Wisconsin professor of poultry science, have exhibited no changes in reproduction rates.

In other tests, turkey and quail were fed 200 parts per million of DDT. The pesticide intake, Chermis said, resulted in no changes in the thickness of egg shells.

Many other factors found in the environment, he continued, could affect differences in shell thickness of wild bird eggs. If birds are frightened, by being chased, or disturbed by cars, dogs barking, horns, or jet airplane sonic booms, thinner egg shells can be the result.

In any experiments in wild birds to ascertain causes of shell alterations, it would be necessary to negate other genetic, disease, and environmental factors before DDT could be ruled the cause of egg failures, Dr. Chermis testified.

In denying that DDT is a threat to wildlife, William F. Gusey, wildlife specialist, noted that "the mammal population on a country-wide basis is in a 'sound state,' and thrifty; big game has increased in numbers for the past 30 years; and population of small game and upland game birds has been quite favorably maintained—as well as many song birds, including robins."

Gusey is a former assistant division chief of the U.S. Department of Interior's Bureau of Sport Fisheries and wildlife.

Dr. Jukes, the California biochemist, strengthens the "sound-state" appraisal of the bird populations by citing a comparison of Audubon Society Christmas bird counts for 1941 and 1960, before and after the widespread use of DDT.

"The greatest increases are in grackles, redwing blackbirds, cowbirds, starlings and robins—up 11-fold to 131-fold.

"I think by far the greatest effect of DDT on birds is to kill mosquitoes that carry serious diseases of wild birds, including malaria, Newcastle disease, fowl pox and encephalitis."

Ban Too Drastic

Banning DDT could bring many lesser adverse effects upon people, not the least of which include predictions that food prices would rise and many more Dutch elm diseased trees would fall, because substitute chemicals are more costly and less effective.

It is vital to realize that DDT still is an essential chemical for which there is no comparable substitute for certain afflictions.

American technology inevitably will solve the problem to the satisfaction of all of us. But to impose an outright ban on DDT at this time would be far more serious than to have outlawed the horse as a mode of transportation before the automobile was invented.

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