



ROBERT RODALE

## Silent Spring – Two Years Later

**S**ILENT SPRING had an explosive impact not because it was the first warning that insecticides were dangerous. Anyone who could read the label on a can of DDT already knew that the chemicals inside were hazardous and had to be used with caution and discretion. And conservationists, organic gardeners and many enlightened scientists had warned long before Rachel Carson wrote her book that insecticides should be used with great caution or not used at all. Miss Carson blew a lot of people out of their previous complacency by pointing out in an impressive and accurate way how the "careful" use of insecticides was spreading these poisons far beyond the place where they were originally used. She also said that these small residues of persistent insecticides were causing harm to wildlife and possibly to people, and predicted that much greater harm would be caused if the general contamination of the environment with insecticides was not curbed.

While the chemical industry and its hired scientists scoffed at the warning, highly placed independent researchers and government officials set about trying to find out how much evidence existed to back up the frightening statements of the soft-spoken lady from Silver Spring, Maryland. Many seminars were held on the subject and President Kennedy appointed a panel of top experts to tell the nation what

the extent of the danger was and what could be done about it. None of these groups concluded that insecticides were absolutely safe. But on the other hand they couldn't say what the extent of the harm was that insecticides were causing because that information simply was not available. While a lot of time and money had previously been invested in testing insecticides for safety, the tests were all confined to the limited conditions under which the manufacturers recommended their products for farm, garden and forestry use. For example, the investigating panel could find out how many parts per million of DDT could be allowed on apples without causing visible harm to experimental animals fed such fruit for a few years. But almost no experimental work had been done to find out what a lifetime of exposure to a broad range of pesticide residues could mean to the general state of a person's health.

Now, two years after publication of *Silent Spring*, such a project is getting started. The U.S. Public Health Service has announced that its Office of Pesticides is beginning a broad series of investigations to probe the long-term health effects of the use of pesticides on people. Previous tests with animals have shown that fewer offspring and more still-births can result after long exposure to pesticides, the Public Health Service said. Now it



wants to see if effects like that occur in humans as well as in animals.

The project is to continue for 5 to 10 years, possibly longer. In 12 communities across the country, scientists will get to work looking for bits and pieces of information which might eventually be pieced together into a meaningful picture of pesticide damage, like parts of a jigsaw puzzle. Bodies will be autopsied in search of evidence of abnormalities, particularly in the liver, kidneys, reproductive organs and fatty tissues. People in the test areas who die from unknown causes will be the subject of careful scrutiny, to see if pesticide chemicals were possibly involved in their death. (There is a suspicion that some pesticide-related deaths are now going unreported.) In homes air will be monitored; dust in vacuum cleaner bags will be analyzed for residues, and smears from dirt on walls will be made to see what insecticides might be present. Farm animals will be checked for the level of insecticide residues in their bodies. The project's chief, Dr. Robert J. Anderson, calls the study a "pioneering venture" in environmental health research. "Many pesticides, widely used for years, have not been investigated for their impact on human beings after long environmental exposure," he said in announcing the investigation. Cost of this large-scale effort is to be \$1.2 million the first year and \$2.3 million next year. So far 9 places where the investigation will take place have been designated. Colleges will handle the project in Louisiana and Hawaii, while state or county health departments will carry out the work in Dade County, Florida, the Windsor-Greeley area of Colorado, Berrien County, Michigan, Monmouth County, New Jersey, the lower Rio Grande Valley in Texas, the Wenatchee-Quincy Basin in Washington, and an undesignated part of California. Three more test sites will be revealed later.

The undertaking of this vast and



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lengthy search for the effects of pesticide poisoning in the general population by the U.S. Public Health Service is a direct slap at those industry-oriented scientists who responded to *Silent Spring* with hasty statements that Miss Carson must be wrong because there was no evidence that insecticides had ever hurt anyone if they were used as directed. The PHS study is a slap at them for two reasons. First, it points out clearly that no project like this has ever been undertaken before. No one ever really looked for the ill effects of insecticides, so there could be no unimpeachable evidence that Rachel Carson was right. She recognized that herself. Anyone who said, therefore, that there was "no evidence" of the harm of pesticides was merely covering the fact that no one had ever looked for the evidence.

Second, the thoroughness of the methods now being used to pinpoint the effect of insecticides on people expose as either lazy or dishonest those scientists who tried to use the crude facts available previously as proof of the safety of those compounds. When a whole country is exposed to a thin fog of insecticide — as the U.S.

*Organic Gardening and Farming*



is today — you must look for different evidence of harm than if you are just checking for evidence of ill effects to one spray operator. In the past, some scientists tried to say that if a man spraying his farm with poison didn't get sick, then the small amount of residue reaching the rest of the country must be O.K. We now know that the effects of insecticide residues can be extremely subtle, and research and thinking of the most careful kind is necessary to reveal what is going on. A recent experiment conducted by a biologist supported by the Public Health Service showed, for example, that fish swimming in water containing minute residues of insecticide frightened more easily than fish swimming in pure water. Prior to that experiment, it was thought that water with such small residues in it was completely harmless to fish. Now we know differently.

Searching for the subtle effects of insecticide residues on people is made challenging, however, by the fact that it is almost impossible to find anyone who is *not* exposed to these poisons to use as a control for study. Last January, for example, government scientists found that a red cloud of

dust which was carried over the state of Ohio was made up of soil from Western dust bowl areas — and it contained appreciable amounts of insecticide residues. While residents of Cincinnati were busy washing the annoying dust off their cars, tests were being made showing that it contained insecticide which had been applied to soil and plants for several seasons previously in such states as Texas and Kansas. Even more strange is the discovery of insecticide residues in the flesh of seals in the Antarctic, thousands of miles from any place where these poisons had been used. No doubt small amounts of the poison had been carried south in the bodies of crabs, shrimp and other fish which the seals used as food.

The frightening way insecticide residues often travel across our environment and build up by the selective feeding practices of wildlife is the effect which concerned Rachel Carson most. She worried that the same thing was happening to people, but had little proof to back up her suspicions. Now, for the first time, people are starting to look for the evidence which Miss Carson believed was waiting for someone to discover.

## NEWS FROM COMPOST SCIENCE

AMID PLEAS FOR GREATER conservation practices and anti-pollution measures comes news of continued activity in the municipal composting field. Poor handling of our nation's refuse — which amounts to a record-breaking 1,000 pounds per person per year — is a tremendous factor in the current pollution problem. Must modern society be plagued with such pollution?

Fortunately, a rapidly-growing number of influential people are trying to make sure the answer is No. Asking for stricter pollution controls, President Johnson said: "Modern technology, which has added much to our lives, can also have a darker side. The air we breathe, our water, our soil, and wildlife are being blighted by poisons

and chemicals which are the by-products of technology and industry. The same society which receives the rewards of technology must, as a cooperating whole, take responsibility for control."

Composting, as a modern waste-treatment method able to convert wastes into a stable, hygienic end product, is valued by many cities who are forced to abandon their smoldering, stinking dumps. Latest cities reported to be seriously considering composting include Middleboro, Mass., Houston, Texas, and Pinellas County (Tampa), Florida. In Irondequoit, N.Y. (near Rochester), the Town Board voted to build a composting plant after two years of study.