DDVP . . . The New Insecticide's Present Status

By KENNETH D. QUARTERMAN, B.S., M.P.H.

THE DISCOVERY of dimethyl 2,2-dichlorovinyl phosphate, a new and potent insecticide known as DDVP, was announced February 1, 1955, by the Secretary of Health, Education, and Welfare. The new organic phosphorus compound was developed by chemists on the Savannah, Ga., laboratory staff of the Public Health Service's Communicable Disease Center. Preliminary tests have proved the compound to be about equally as toxic to houseflies as parathion, but only one-fifth to one-tenth as toxic to rats as parathion.

Since the discovery announcement, subsequent publicity unfortunately has, to some extent, overemphasized the presently apparent potentialities of this new insecticide. At the same time, little or no information has been given to the public as to its availability. The Public Health Service has received many inquiries for information on uses, costs, manufacture, and distribution of DDVP.

DDVP is not now being produced commercially and is not available for use by the general public. Before it can be released for general use, much investigation is needed to determine dosage requirements for specific insects, suitable formulations, and the toxicological hazards associated with its usage. Considerable time will be required to develop such information and to register labels with the United States Department of Agriculture as required by the Federal Insecticide, Fungicide, and Rodenticide Act.

Mr. Quarterman, a biologist, is chief of the Technical Development Laboratories, Technology Branch, Communicable Disease Center, Public Health Service, Savannah, Ga.

Invention for Public Use

It has been determined that the Federal Government is entitled to the entire right, title, and interest in the invention of DDVP. It was decided also that the Government should not seek to obtain a domestic patent on the invention because prior publications on the invention by the Government scientists who developed it are deemed sufficient protection against the prosecution of a successful patent application by a later inventor. These publications will, within 1 year from the first date of publication, constitute a dedication of the invention to the public. Such a dedication adequately protects the interests of the Government. On the basis of this determination and decision, any manufacturer who wishes to do so may proceed with the domestic production of DDVP in the United States without seeking a license from the Government.

Manufacture of DDVP

A number of chemical manufacturers have expressed an interest in producing DDVP. How many companies may ultimately engage in its manufacture cannot be determined at this time, and the number undoubtedly will be governed by the demand for the product. At the present time, only one company is known to have a pilot plant in operation. The limited quantities of DDVP being produced are available only to qualified research units for further study and field evaluation against a variety of insects. Until DDVP is produced commercially, estimates concerning its cost are impractical.

Extent of Usefulness

What insects DDVP may prove useful in controlling cannot be predicted accurately. Be-

cause of its chemical properties and the present knowledge of its insecticidal activity and toxicity to warm-blooded animals, it appears that DDVP is apt to find only limited use against insects of public health significance. It has been shown to be effective on DDT-resistant houseflies by topical application (*1*) and in poison baits (*2*). It may be reasonable to expect that DDVP will be useful in such situations as outdoor space sprays to control adult flies and mosquitoes. There also may be some usage for it as a larvicide against flies and mosquitoes. Because of its relatively high volatility, DDVP is not likely to be useful as a residual spray; and because of its toxicity, it appears unsuitable for use in vaporizers in occupied buildings.

DDVP should find wider use in agriculture than in public health. It should be effective against many of the agricultural pests now controlled with parathion and tetraethylpyrophosphate (TEPP). Since DDVP appears to be considerably less toxic than these compounds, and since it will offer less residue problem on food crops than many other insecticides now in use, it is reasonable to anticipate considerable usage of DDVP in agriculture, especially on food crops.

In summary, DDVP is a promising new insecticide, the full potentialities of which remain to be developed by further research, much of which is already in progress. It is not available to the public and is not likely to be before 1956, at the earliest. The Government has dedicated the discovery of DDVP to the public; and any manufacturer may engage in its production in the United States without obtaining a license from the Government. Its sale in this country, of course, will be subject to compliance with the requirements of the Federal Insecticide, Fungicide, and Rodenticide Act as are all other insecticides.

REFERENCES

(*1*) Mattson, A. M., Spillane, J. T., and Pearce, G. W.: Organophosphorus insecticides. Dimethyl 2,2-dichlorovinyl phosphate (DDVP), an organic phosphorus compound highly toxic to insects. J. Agri. & Food Chem. 3: 319–321, April 1955.

(*2*) Kilpatrick, J. W., and Schoof, H. F.: DDVP as a toxicant in poison baits for housefly control. J. Econ. Entomol. In press.

Epidemiologists' Conference Organized

The Conference of State and Territorial Epidemiologists was organized in Atlanta at the close of the second national meeting of epidemiologists, May 16–18, 1955. The conference was sponsored jointly by the Communicable Disease Center and the National Office of Vital Statistics of the Public Health Service.

Since the first meeting of State epidemiologists in 1951, called by the Public Health Service at the request of the Association of State and Territorial Health Officers, epidemiologists have been active in recommending improvements in the various communicable disease control programs and in Federal and State morbidity reporting systems. Through the conference a broader avenue of approach will be open to them.

The officers for the newly organized conference are: president, Dr. Roy F. Feemster, Massachusetts; president-elect, Dr. A. C. Hollister, Jr., California; vice president, Dr. A. L. Gray, Mississippi; secretary-treasurer, Dr. Samuel B. Osgood, Oregon. Chosen as members of the council were: Dr. Ruth Church, Illinois; Dr. L. L. Parks, Florida; and Dr. Robert F. Korns, New York.