Sources of Economic and Marketing Information on Pesticides

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Prediction of the domestic and foreign requirements or the sales potential for a pesticidal chemical is facilitated according to the availability of data indicative of trends in use patterns. These activities, as well as the investigation of costs of production and marketing, may depend upon figures that can be gathered only by a government collecting agency. Information that will disclose the operations of individual producers ordinarily is not published. Numerous reports provide data for a given area or figures for certain classes of products or operations.

THE DETERMINATION OF CONSUMPTION TRENDS as an indication of future markets frequently is the principal objective in pesticide market research. The trend for the country as a whole may be more or less readily obtained, but as a general rule only fragmentary information is available for a regional or state breakdown or a use pattern by crops, yet these latter patterns are much sought by the pesticide industry.

Economic data as to the past history of pesticide production and use furnish a basis for estimating future requirements. Important also is information about plant capacity, to indicate whether sufficient chemicals can be provided for successful pest control under epidemic conditions or other emergency situations. Useful data may include figures concerned not only with quantities produced, shipped, sold, or consumed but also other economic information about sources of raw materials, price indexes, man-hour statistics, and other data related to the pesticide industry. The area of investigation depends, of course, upon the purpose one has in mind.

Published statistics vary in their reliability. They may represent merely the best estimate of an informed person who lacks actual figures. They may be totals based upon survey returns, assumed to be complete but frequently incomplete for one reason or another. Difficulties arise from changes in the categories into which information is classified or from revisions of collection procedures. One should study the sources of his data and the methods of their collection in order to appraise the dependability of his conclusions.

A search for particular economic information about pesticides may need to include, in addition to a study of the literature, original research by means of surveys and individual inquiries. These have their limitations. Much trade information will not be divulged if it discloses operations of an individual manufacturer. A survey, furthermore, must be well planned if it is to provide the desired answers. Surveys by government agencies must be approved by the Bureau of the Budget to prevent unnecessary duplication, reduce costs and reporting burdens upon the public, and improve the quality and general usefulness of the statistics obtained.

Government Sources

Federal agencies collect and publish many statistics dealing with chemicals, including pesticides. Important among these is the U. S. Tariff Commission, which collects and reports the production and manufacturers' sales of organic chemicals such as DDT and 2,4-D. It lists the producers of specific pesticides, even those made by so few firms that production data cannot be disclosed. The commission's annual report entitled "Synthetic Organic Chemicals: United States Production and Sales" appears several months after the end of each year, but is preceded by various preliminary reports. Some data are published monthly, while other figures appear only annually.

Similar statistics on inorganic chemicals such as lead arsenate and sodium chlorate are reported by the Bureau of the Census, Department of Commerce, in its "Facts for Industry" series M19A. This publication appears monthly and is followed by an annual summary.

The Bureau of Mines, U. S. Department of the Interior, publishes production and use data for products of the mineral industries—for instance, copper sulfate and various clays. This information appears in the "Minerals Yearbook" and in mimeographed market reports on specific subjects. Beginning with 1952 the yearbook is in three parts. Preprints of individual chapters can often be obtained a year or more before publication of the complete yearbook.

The Bureau of the Census also collects export and import data, classified statistically by commodity and country according to Schedule A for imports and Schedule B for exports. Reports are

published monthly, followed by an annual summary, both quantities and valuations being shown. Specific information is available for imports (Report FT 110) of such materials as pyrethrum flowers, rotenone-containing roots, and red squill; and for exports (Report FT 410) of items such as copper sulfate, calcium arsenate, and compositions containing 25% or more of DDT. As it would be impractical to establish separate schedule numbers for individual materials in which foreign trade is small, these commodities are grouped under basket code numbers. Exports of weed killers are now handled in this manner. A large variety of "Agricultural Insecticides, Fungicides, and Similar Preparations and Materials, Dry or Liquid Basis, N.E.C. (not elsewhere classified)" are reported in another basket classification. Household and industrial insecticides receive similar treatment.

Large quantities of pesticides made in this country are shipped to Canada. Often the particular materials cannot be separated from basket classifications in U. S. export statistics. Canadian pesticide sales are reported by the Dominion Bureau of Statistics and may assist in estimating exports from the United States. The Dominion Bureau of Statistics, Ottawa, Canada, publishes a detailed report of sales for each year, which appears about July of the following year and is entitled "Sales of Pest Control Products by Canadian Registrants."

The Business and Defense Services Administration, U. S. Department of Commerce, has made a survey of the foreign production and consumption of pesticides. The results appeared recently as a Department of Commerce publication entitled "World Survey of Pest Control Products."

No figures showing pesticide consumption in the entire United States at the user level are collected regularly. Most estimates of consumption are obtained by indirect methods. The Food and Materials Requirements Division, U. S. Department of Agriculture, estimates domestic disappearance of pesticidal chemicals at the manufacturers' level, and these figures, when not disclosing individual company operations, are published annually in "The Pesticide Situation." Disappearance data calculated from production, inventory, and foreign trade statistics are indicative but do not represent actual usage. Variable supplies are located in the distribution system beyond the primary producer, especially in the hands of formulators and wholesale distributors, so that disappearance figures do not necessarily agree with actual consumption. In order to make possible a closer approximation of consumption in the United States, producers' and formulators' inventories have been surveyed annually beginning in 1954 by the Department of Agriculture in cooperation with the National Agricultural Chemicals Association.

In 1952 the Department of Agriculture conducted a survey to obtain from state specialists their estimates of local consumption of about 50 specified pesticides during the 1951 season. Valuable information was secured, but the reliability of individual estimates varied greatly, dependent upon the local facilities for obtaining accurate data. Numerous reports were published based upon this survey.

A variety of special reports from federal and state agencies are sources of consumption data in such fields as weed control and aerial application of pesticides. When pest control activity is licensed by governmental authorities or forms a public program, statistical records are usually maintained. For instance, annual chemical, sprayer, and weed infestation data reported by the county weed and seed inspectors of the state of Minnesota are published by the state's Division of Plant Industry. Another example is the report of quantities of pesticidal liquids and dusts applied from airplanes, which is made annually by the Office of Aviation Safety, Civil Aeronautics Administration. Notable also are the annual reports of the California State Bureau of Chemistry, which contain statistics of pesticide registration, agricultural pest control licensing, and acreages treated from the air tabulated according to year, county, crop, and chemical. Materials used and expenditures for weed control are published by the California Department of Agriculture; also the areas treated and costs for rodent control.

Professional and Trade Sources

Trade associations often gather statistical information of interest to their members or publish trade estimates in association publications. The Chemical Specialties Manufacturers' Association has in recent years surveyed sales at the manufacturer's level of pesticidal formulations intended for household, industrial, and livestock use, and published the data in *Soap and Sanitary Chemicals*. This association also surveys aerosol products, including those for use in insect control.

Some professional and trade publications print valuable material in this field. Trade estimates are reported by staff writers. Government-collected data are presented in new ways. *Chemical Week* and *Chemical and Engineering News* are weekly journals which publish such articles along with significant news items about production facilities, mergers, expansions, reorganizations, plant capacities, and new products. *Croplife* and *Oil, Paint and Drug Reporter* also are good news sources in this field. The latter furnishes weekly market quotations for many pesticidal chemicals—in fact, has done so since lead arsenate paste was first quoted for the week ending July 27, 1908. Prices of many pesticides are published in a quarterly supplement to *Chemical and Engineering News*. The JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY, *Agricultural Chemicals*, and *Farm Chemicals* are three monthly periodicals containing technical articles and timely notices frequently of value as sources of economic information about pesticides.

Several directories may be of assistance in making market studies of pesticides. "Entoma," published by the Entomological Society of America, is a directory of producers and formulators of pesticides; it is in its tenth edition. "Pesticide Handbook," the seventh edition of which is current, is particularly valuable as a guide to the general composition of several thousand trade-name materials; it is published by D. E. H. Frear, University Park, Pa. The best published list of pesticide manufacturers is perhaps that contained in "Farm Chemicals Handbook," published by Ware Bros. Co., Philadelphia. "Chemical Week Buyers' Guide," appearing in September of each year, is useful as a guide to the producers of chemicals and their addresses, even including their telephone numbers. It is not always realized, however, that such directories list not only actual producers but many export agents, formulators, and distributors. No commercial directory exists that lists completely only the actual manufacturers of individual organic and inorganic chemicals.

Sources of Loss and Gain Data

Reports of losses from infestations and of gains from applications of pesticides are of interest here. A recent publication basic in this field (now out of print, however) is U. S. Department of Agriculture ARS-20-1 entitled "Losses in Agriculture." Current reports of the extent of damage by particular insects and plant diseases, which include some statements regarding control operations, appear weekly in the *Cooperative Economic Insect Report* and monthly in the *Plant Disease Reporter*, both publications of the department's Agricultural Research Service. Reports of gains from the use of pesticides are scattered and mostly relate to small demonstrational crop plantings. Some such reports appear in bulletins of the state agricultural experiment stations.

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