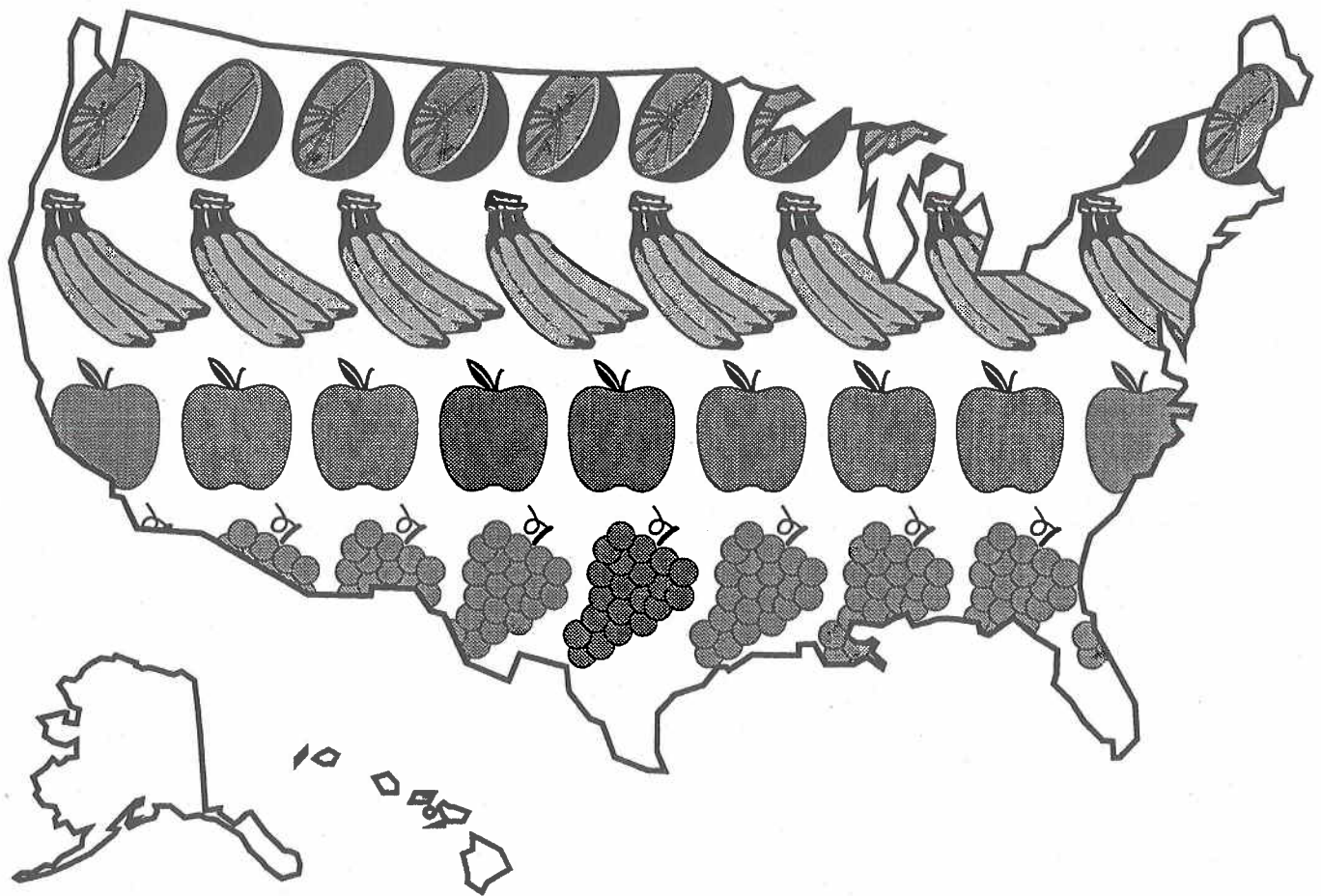


Pesticide Data Program (PDP)

Summary of 1992 Data





United States
Department of
Agriculture

Agricultural
Marketing
Service

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To the Reader:

The Pesticide Data Program (PDP) was implemented in May 1991 by the Agricultural Marketing Service of the United States Department of Agriculture to collect comprehensive data on pesticide residues in selected fresh fruits and vegetables. PDP was designed to provide government agencies with an improved data base to respond more effectively to food safety issues. The main recipient of the program's data is the Environmental Protection Agency, which uses this information to support its risk assessment process.

PDP is funded by Congress and operated through agreements with participating States, which have the responsibility for sample collection and analysis. Through the end of 1992, there were six participating States: California, Florida, Michigan, New York, Texas, and Washington.

PDP operations were expanded in January 1993 to include three new participating States. The addition of these States--Colorado, North Carolina, and Ohio--increased the segment of the Nation's population represented by PDP sampling to approximately 50 percent and provided for greater regional diversity.

If you have any questions or comments regarding this summary, please contact William J. Franks, Jr., Director, or Robert L. Epstein, Deputy Director, of the Science Division at (202) 720-5231.

Sincerely,

LON HATAMIYA
Administrator



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United States Department of Agriculture

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EXECUTIVE SUMMARY

In May 1991, the U.S. Department of Agriculture (USDA) implemented the Pesticide Data Program (PDP) to collect comprehensive data on pesticide residues in selected fresh fruits and vegetables. PDP is a multi-agency program with planning, policy, and procedural efforts coordinated among USDA, the Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA). Day-to-day program operations are managed by the Science Division of USDA's Agricultural Marketing Service (AMS). Data produced by PDP is collected as close to the consumer as possible, with samples prepared as if for human consumption (washed, peeled, cored, etc.). PDP data is available to EPA to determine dietary exposure to pesticide residues, and thus better estimate risk to the consumer. Commodities were chosen for inclusion in the program based on their level of consumption by the American public. Pesticides targeted for data collection were selected by EPA in consultation with USDA and were chosen based on dietary exposure considerations. The EPA list of pesticides consists of compounds with acute and chronic endpoints, including suspected carcinogens. PDP data is also available for use by EPA to address pesticide reregistration and special review needs. An overview of program management and operations is shown in Figure A. Pesticides in PDP are shown in Figure B.

Agreements were established with agencies in six States (California, Florida, Michigan, New York, Texas, and Washington) to collect and analyze PDP samples. These States were selected because they represent diverse geographic areas of the country, approximately 40 percent of the Nation's population, and a large percentage of the fresh fruits and vegetables grown in the United States. Participating States were assigned a number of samples to collect per commodity each month, which was based on the State's population. This number was the same for all commodities and remained constant throughout the year. To allow for collection as close to the consumer level as possible, samples were gathered at sites such as terminal markets and large distribution centers. Sampling at these locations also provided information on the origin of the sample, the use of post-harvest fungicides, and pesticide degradation that occurred during transit and storage.

Sampling guidelines, written by AMS and provided to all participating States, required that sampling dates and sites be selected at random. Also included in the guidelines were specific sampling techniques to be utilized by the sample collectors. Strict adherence to the guidelines and uniformity of sampling techniques were emphasized. Participating States were responsible for providing AMS with quarterly sampling plans indicating the dates and sites to be sampled for each month of the quarter. Quality assurance/quality control (QA/QC) criteria, which are based on EPA's Good Laboratory Practices (GLPs), were established by AMS for the participating laboratories. To facilitate meeting these criteria, each laboratory was provided with similar instrumentation and training on instrument use.

Presented in this summary are the PDP findings for calendar year 1992. The number of commodities included in the program increased from 7 to 10 in February, and once again

from 10 to 12 in October. The number of participating States remained at six throughout all of 1992. However, agreements were established with three additional States (Colorado, North Carolina, and Ohio) in August to begin sample collection in January 1993. The addition of these three States increased the segment of the Nation's population represented by PDP sampling to approximately 50 percent and provided a greater degree of regional diversity. The number of testing facilities, located in the participating States, remained at eight through April. A USDA regional laboratory, needed to perform selective multiresidue analyses, became PDP's ninth testing facility in May.

During 1992, a total of 5,750 samples were collected, of which 158 were analyzed for benomyl and thiabendazole only. The remaining 5,592 were analyzed for all other PDP compounds with the exception of 2,4-D and benomyl, which were tested only in selected commodities. Residues of 49 different pesticides were detected in approximately 60 percent of all the samples. Many samples contained multiple residues, with as many as eight found in one sample.

The number of samples collected by each State was as follows: California-1,568, Florida-868, Michigan-788, New York-1,018, Texas-988, and Washington-520. These produce samples originated from the 6 participating States, 31 other States, and 16 foreign countries.

Although, in general, the levels of pesticide residues detected were substantially below tolerances, violative residues were detected in 63 of the samples, 15 of which were in imported commodities. Of the 63 violative samples, 10 exceeded the tolerance level and the other 53 had residues where no tolerance was established. AMS and the States notified FDA of these violations. These data may assist FDA by pinpointing areas where closer surveillance may be required.

The data collection protocols and advanced analytical technology utilized by PDP have resulted in a significant number of residue detections, albeit at very low levels, in some commodities. For example, at least one detectable residue was found in 88.5 percent of the apples tested, 80.5 percent of the celery, in 85.3 percent of the peaches, and in 71.1 percent of the potatoes. More than 55 percent of all residues found were below 0.10 parts per million (100 ppb), with 8.5 percent of the detections less than 0.01 parts per million (10 ppb). These data should provide a strong basis for EPA to determine the dietary exposure to pesticide residues.

PDP's sampling protocol was enhanced in January 1993 by the implementation of a more statistically defensible method of site weighting that reflected both an improved site selection routine and the incorporation of commodity volume data from sampling sites. This method will allow users of PDP data to not only make virtually unbiased estimates of the prevalence of pesticides for commodities collected in the nine participating States, but also to quantify the accuracy of those estimates both for the nine States and the Nation as a whole. The enhanced sampling protocol was developed with the support of the USDA National Agricultural Statistics Service, who will continue to provide long-term maintenance for PDP's sampling and estimation systems.

FIGURE A

OVERVIEW OF PDP MANAGEMENT AND OPERATIONS

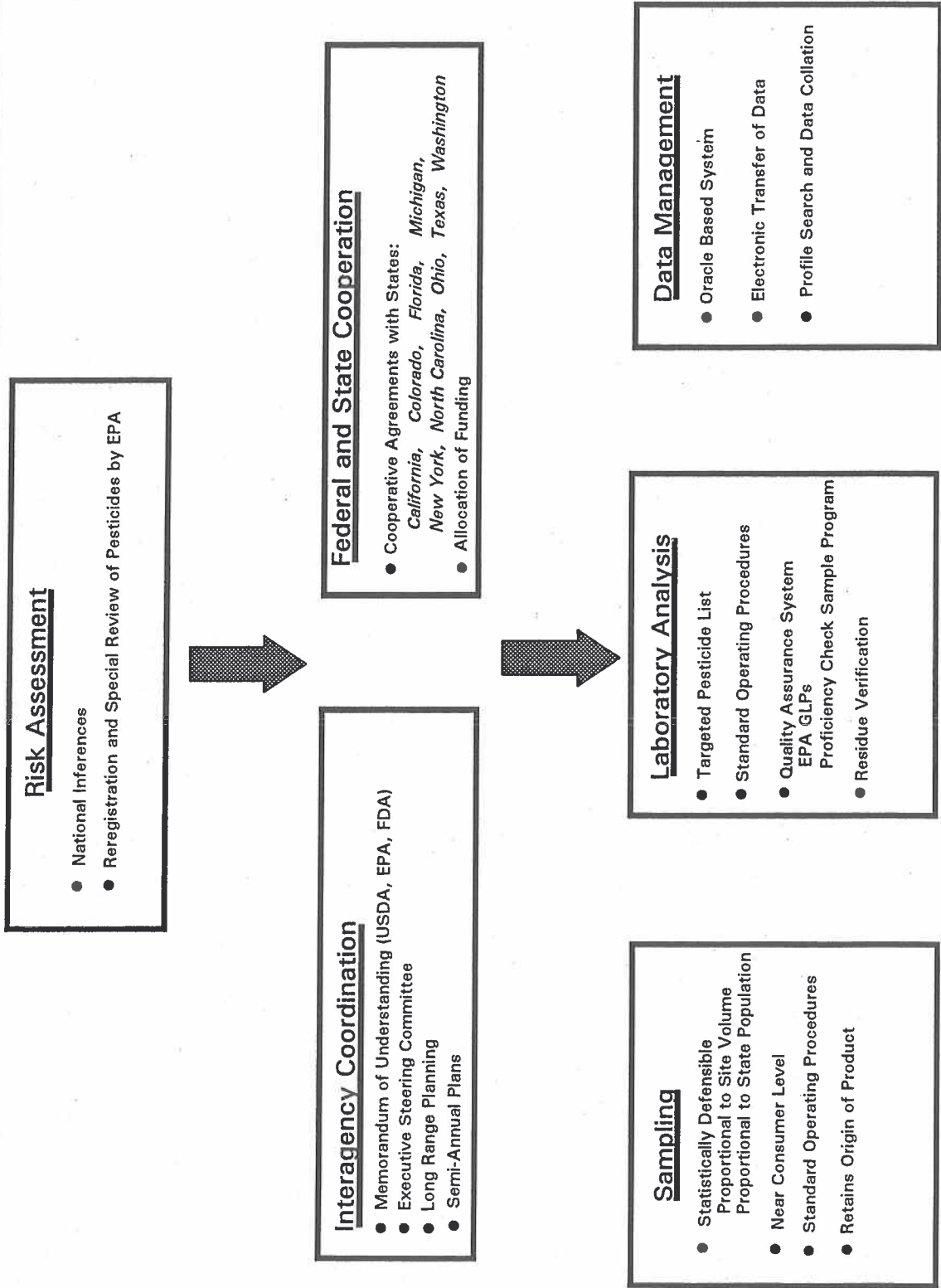
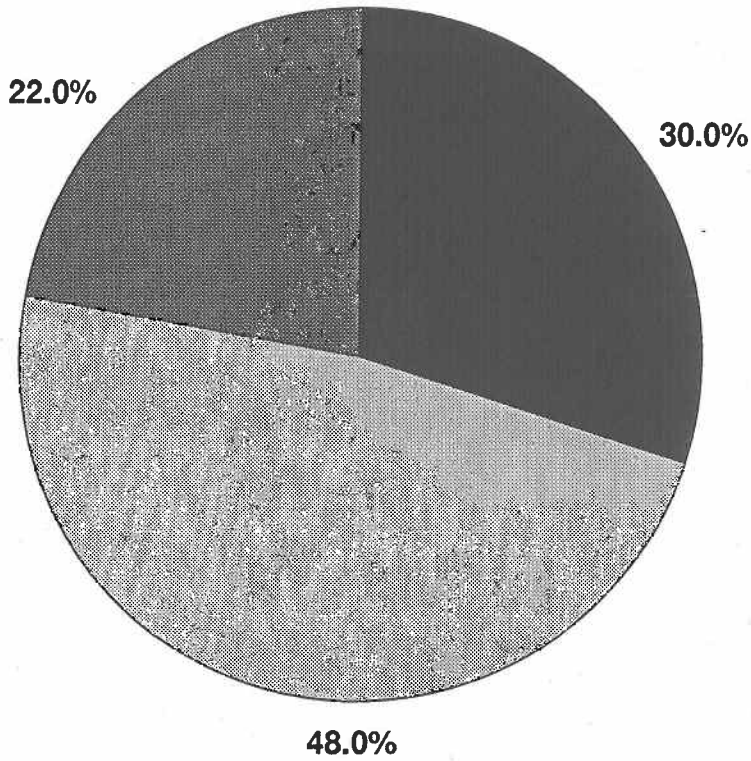





Figure B

Pesticides in PDP



- | | | |
|--|--|--|
|  Original EPA List (16) |  Additional EPA List (12) |  Other (26) |
| 2,4-D | Azinphos-methyl | Anilazine |
| Acephate | Chlorothalonil | Captan |
| Atrazine* | Diazinon | Carbaryl |
| Benomyl | Dichlorvos | Chlorpropham |
| Bromoxynil* | Disulfoton sulfone | Cypermethrin |
| Chlorpyrifos | Endosulfans | DCPA |
| Dicloran | Ethion | DDE+DDT+TDE |
| Dicofol | Fenamiphos* | Demeton |
| Hexachlorobenzene (HCB)* | Malathion* | Demeton-S Sulfone |
| Iprodione | Methidathion | Dimethoate |
| Lindane | Mevinphos | Diphenylamine |
| Methamidophos | Parathion-methyl | Ethoprop |
| Methoxychlor | | Imazalil |
| Pentachlorobenzene | | Myclobutanil |
| Permethrins | | O-phenyphenol |
| Quintozene (PCNB) | | Omethoate |
| | | Parathion |
| | | Phorate Sulfone |
| | | Phosalone |
| | | Phosmet |
| | | Propargite |
| | | Thiabendazole |
| | | Trifluralin |
| | | Vinclozolin |

* Not detected

