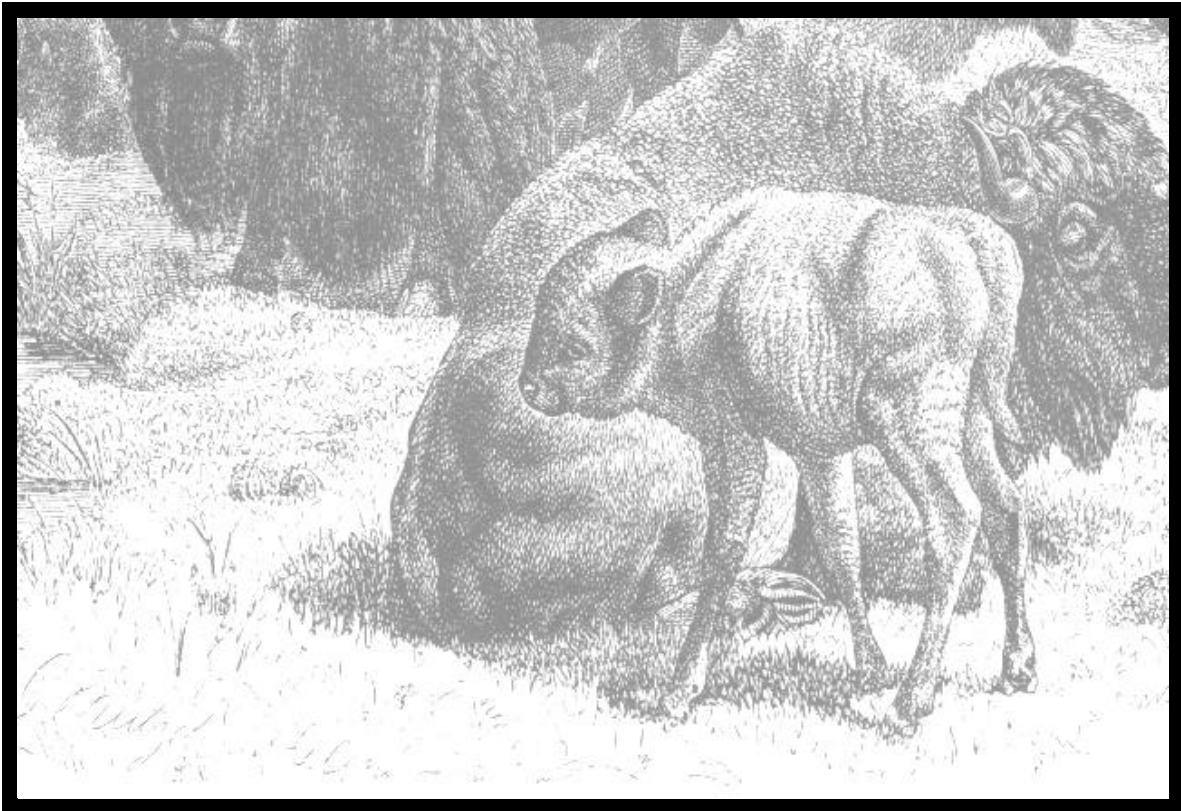


# Data Sources for Pesticide Indicators





# Associated Databases for Pesticide Indicators

The data sources for most of the indicators of Pesticides are drawn from state sources. Federal and nongovernmental sources presented here are:

- US Food and Drug Administration, Pesticide Program, Residue Monitoring;
- US Department of Agriculture, Agricultural Chemical Use on Vegetables;
- US Department of Agriculture, Agricultural Chemical Use on Fruits; and,
- US Department of Agriculture, Agricultural Chemical Usage, Field Crops Summary.

Information includes:

- who to contact,
- description of the database,
- possible limitations of the data,
- where do the data come from,
- how the data are shown, and,
- how can the data be used.

## Summary Evaluation of the Databases

### **US Food and Drug Administration, Pesticide Program, Residue Monitoring**

This data source is a 1993 report on the FDA's pesticide residue monitoring activities. Previous reports and their data are available. The methods that were used to retrieve, estimate, and calculate the data are included. The data are presented and available mostly on a national level. There is one table of state data in the report. The data presented are a snapshot in time, consisting of one year of data. The report would be much more useful if data from past reports was included for a trend analysis. Access to and assistance in using the data is available by mail and by phone at either no charge or minimal cost.

### **US Department of Agriculture, Agricultural Chemical Use on Vegetables**

This database is a report on chemical applications to vegetable crops for a given year. Previous reports and their data are available. The data are supplied directly from interviews with farmers. The methods that were used to retrieve, estimate, and calculate the data are included. The data are presented and available by major crop and major producing state. The data presented are a snapshot in time, consisting of one year of data. The report has several drawbacks. The report would be much more useful if data from past reports was included for a trend analysis. The report also acts as more of a summary than an analysis. Its user unfriendliness is compounded by a lack of a table of contents and a description of how the data are presented. Access to and assistance in using the data is available by mail and by phone at either no charge or minimal cost.

### **US Department of Agriculture, Agricultural Chemical Use on Fruits**

This database is a report on chemical applications to fruit crops for a given year. Previous reports and their data are available. The data are supplied directly from interviews with farmers. The methods that were used to retrieve, estimate, and calculate the data are included. The data are presented and available by major crop and major producing state. The data presented are a snapshot in time, consisting of one year of data. The report has several drawbacks. The report would be much more useful if data from past reports was included for a trend analysis. The report also acts as more of a summary than an analysis. Its user unfriendliness is compounded by a lack of a table of contents and a description of how the data are presented. Access to and assistance in using the data is available by mail and by phone at either no charge or minimal cost.

### **US Department of Agriculture, Agricultural Chemical Usage, Field Crops Summary**

This database is an annual report on chemical applications to crops for a given year. Previous reports and their data are available. The data are supplied directly from interviews with farmers. The methods that were used to retrieve, estimate, and calculate the data are included. The data are presented and available by major crop and major producing state. The data presented are a snapshot in time, consisting of one year of data. The report has several drawbacks. The report would be much more useful if data from past reports was included for a trend analysis. The report also acts as more of a summary than an analysis. Its user unfriendliness is compounded by a lack of a table of contents and a description of how the data are presented. Access to and assistance in using the data is available by mail and by phone at either no charge or minimal cost.

## *Pesticides Data Source One:* **US Food and Drug Administration, Pesticide Program, Residue Monitoring**

This 1993 report is the seventh annual report summarizing the results of FDA's pesticide residue monitoring program. The report includes findings obtained under regulatory and incidence/level monitoring and results from selected Total Diet Studies for 1991-1993.

### ***How to Get the Report***

Questions concerning the report and information on obtaining the report can be directed to:

Norma Yess  
Center for Food Safety and Applied Nutrition  
HFS-308  
Food and Drug Administration  
200 C Street SW  
Washington, DC 20204  
Telephone: (202) 205-4152  
Fax: (202) 260-0498

### ***Description of the Report***

The Food and Drug Administration (FDA) has two programs in place that provide information on food residues. The *Pesticide Residue Monitoring Program* collects data on residues found in six major commodity groups (grains; meat, eggs, and dairy; fish and shellfish; fruits; vegetables; and other). Another approach to monitoring is the *Incidence/Level Monitoring*, which analyzes particular commodities such as baby food or imported pears.

In 1993, surveys of important aquaculture products and milk were conducted under incidence/level monitoring. A statistically based monitoring survey of pears and tomatoes was also completed. Pears and tomatoes were chosen because they can be consumed raw, are available year round, and have tolerances for about 90 different pesticides. The objective of the survey was to determine whether violation rates, frequency of occurrence of residues, and residue levels obtained from such a sampling regimen differed from those obtained through FDA's traditional surveillance approach.<sup>1</sup>

A second measure that FDA collects is the *Total Diet Survey*, or market basket study. FDA collects samples from grocery stores four times per year, once from each of four geographic regions of the country. The 261 foods that comprise each market basket

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<sup>1</sup> Food and Drug Administration Pesticide Program, *Residue Monitoring 1993*, 3.

represent over 3500 different foods reported in the USDA food consumption survey. The food is prepared table-ready and then tested for residues of pesticides and other contaminants including metals and PCBs. The Total Diet Study is unique in that it determines pesticide residues in foods that have been prepared as they would be consumed.<sup>2</sup>

### ***Where Do the Data Come From***

The food samples come from both domestic and imported foods. Domestic samples are collected as close as possible to the point of production. Import samples are collected at the point of entry. The most used method of analysis is the multiresidue method (MRM), which can determine about half of the approximately 300 pesticides as well as many metabolites, impurities, and alteration products of pesticides. Single residue methods (SRMs) or selective MRMs are used to determine other pesticides. FDA uses these methods on about 15,000 food samples each year. Fruits and vegetables account for the largest proportion of the domestic samples analyzed. FDA also uses state-generated pesticide residue data that are reported to the "Foodcontam" database in Mississippi.

### ***How the Data Are Shown in the Report***

The report consists of pesticides detected during 1993 monitoring, foreign countries samples collected, countries and pesticides targeted for testing, and frequency of occurrence of pesticide residues in total diet study. Data shown at the state level includes:

- Summary of Foodcontam Findings for 1993 (Total samples, number positive, percent positive, number significant, percent significant)

### ***Limitations of the Report***

This report is mainly a summary of the statistical methods and their findings. Only one table is included that has data at a state level. The report could be improved by showing a comparison of findings over a series of years to measure whether a trend exist for residues of certain pesticides or residues in certain foods.

### ***How Can States Use the Data***

If more than one year's worth of data are included in future reports, States can use the data to indicate potential problems with the use of certain pesticides.

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<sup>2</sup> Yess, Norma. "Residue Monitoring, US Food and Drug Administration Monitoring of Pesticide Residues in Foods", *Pesticide Outlook*, February, 1995, 28-29, and, Food and Drug Administration Pesticide Program, *Residue Monitoring 1993*, 5.

## *Pesticides Data Source Two:* **US Department of Agriculture, Agricultural Chemical Use on Vegetables**

The 1994 publication is the most current and the third Vegetable Summary in the series of Agricultural Chemical Usage reports issued by the National Agricultural Statistics Service (NASS). It was first printed in July 1995. The next report is scheduled for release in 1996 and will cover agricultural chemical use on field crops for 1995.

### ***How to Get the Report***

Copies of and questions about the report may be addressed to:

Merritt Padgitt  
Economist  
Environmental Indicators and Resource Accounting Branch  
Telephone: (202) 720-0433

Van Johnson  
Environmental Statistician  
National Agricultural Statistics Service  
Telephone: (202) 720-7492

There is also a toll free number to receive this and other NASS reports. The number is (800) 999-6779

The address to write for information is:  
Economic Research Service/NASS  
341 Victory Drive  
Herndon, VA 22070

### ***Description of the Report***

This report includes farm use of fertilizers and pesticides for the 1994 crop year for selected vegetable crops in fourteen major producing States. The fourteen states are Arizona, California, Florida, Georgia, Illinois, Michigan, Minnesota, New Jersey, New York, North Carolina, Oregon, Texas, Washington, and Wisconsin.

### ***Where Do the Data Come From***

Data was collected from a sample survey conducted for the 1994 crop year. Data was collected from October through December 1994 from vegetable growers in each State. The growers were arrayed by type of crop grown and size of farm. Each group, or stratum, was given a separate priority of selection based upon the specific characteristics of the group. Any one farm could only be associated with one stratum. Every farm in the sample population had a chance of being selected in the sample. The primary criteria used to project final sample size was the ability to provide accurate estimates of chemical usage at the State level. Growers were personally interviewed

about chemical applications. Planted vegetable acreage estimates are primarily based on grower and processor surveys conducted throughout the crop year.

A survey was done to obtain chemical application data by product name or trade name. A review compared the reported data with manufacturer label recommendations and with data from other farm operators using the same product. Following this review, product information was converted to an active ingredient level. The chemical usage estimates in this publication consist of survey estimates of those active ingredients.<sup>3</sup>

### ***How the Data Are Shown in the Report***

The report comes with no table of contents which makes it difficult to proceed through the information. The report is laid out in this format:

1. A table is presented for a major crop with the major states in which it is grown. For example asparagus in major states California, Illinois, Michigan, New Jersey, and Washington.
2. The total planted acreage of the crop is given for each state
3. Fertilizer application is measured. This is broken into nitrogen, phosphate, and potash and is measured by the percent of the acreage receiving applications and the total applied in 1,000 pounds.
4. The next table is presented with the same information except the focus is on pesticides applied instead of fertilizer.
5. The third table acts as a summary and measures all agricultural chemical applications for the same major crop (asparagus) in all the major states it is grown (California, Illinois, Michigan, New Jersey, and Washington).
6. The next set of tables consists of the same information as previous except it is broken down by each major state producing that crop.
7. The process of information begins with a new major crop.

The end of the report includes a summary of each major crop, focusing mainly on summarizing the percentage of acreage receiving different types of fertilizers and pesticides. An index is given of the common and trade names of active ingredients listed in the report, and of all the crops included.

### ***Limitations of the Data***

The data presented are a snapshot in time, consisting of one year of data. The report would be much more useful if data from past reports was included for a trend analysis. The report also acts as more of a summary than an analysis. Its user unfriendliness is compounded by a lack of a table of contents and a description of how the data are presented.

### ***How Can States Use the Data***

States can use the data if data from past reports are combined to gauge the loadings of pesticides and fertilizers to crops and land. The data can serve as an indicator of risk to humans from working in the fields, risk of groundwater contamination, and risk in consuming food containing residues.

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<sup>3</sup> *Agricultural Chemical Usage, Vegetables, Survey Procedures*, July 1995, 2.

## ***Pesticides Data Source Three:*** **US Department of Agriculture, Agricultural Chemical Use on Fruits**

This publication is the second Fruit Summary in the series of Agricultural Chemical Usage reports issued by the National Agricultural Statistics Service (NASS). It was first printed in July 1994.

### ***How to Get the Report***

Copies of and questions about the report may be addressed to:

Merritt Padgitt  
Economist  
Environmental Indicators and Resource Accounting Branch  
Telephone: (202) 720-0433

Van Johnson  
Environmental Statistician  
National Agricultural Statistics Service  
Telephone: (202) 720-7492

There is also a toll free number to receive this and other NASS reports. The number is (800) 999-6779

The address to write for information is:  
Economic Research Service/NASS  
341 Victory Drive  
Herndon, VA 22070

### ***Description of the Report***

This report was funded by the USDA Pesticide Data Program (PDP) with the purpose of upgrading the statistics and quality of information on pesticide residues in food. This report includes farm use of fertilizers and pesticides for the 1993 crop year for fruit and berry crops in nine major producing States. The nine states are California, Florida, Michigan, New York, North Carolina, Oregon, Pennsylvania, South Carolina, and Washington.

### ***Where Do the Data Come From***

Data was collected from a sample survey conducted for the 1993 crop year. Data was collected from October through December 1993 from fruit and berry growers in each State. The growers were arrayed by type of crop grown and size of farm. Each group, or stratum, was given a separate priority of selection based upon the specific characteristics of the group. Any one farm could only be associated with one stratum. Every farm in the sample population had a chance of being selected in the sample. The primary criteria used to project final sample size was the ability to provide accurate

estimates of chemical usage at the State level. Growers were personally interviewed about chemical applications. Planted fruit acreage estimates are primarily based on grower and processor surveys conducted throughout the crop year.

A survey was done to obtain chemical application data by product name or trade name. A review compared the reported data with manufacturer label recommendations and with data from other farm operators using the same product. Following this review, product information was converted to an active ingredient level. The chemical usage estimates in this publication consist of survey estimates of those active ingredients. The acreage estimates came from periodic orchard surveys, estimates, county extension service data, end of year production surveys, and other indications.<sup>4</sup>

### ***How the Data Are Shown in the Report***

The report comes with no table of contents which makes it difficult to proceed through the information. The report is laid out in this format:

1. A table is presented for a major crop with the major states in which it is grown. For example oranges in major states California and Florida.
2. The total bearing acreage of the crop is given for each state
3. Fertilizer application is measured. This is broken into nitrogen, phosphate, and potash and is measured by the percent of the acreage receiving applications and the total applied.
4. The next table is presented with the same information except the focus is on pesticides applied instead of fertilizer.
5. The third table acts as a summary and measures all agricultural chemical applications for the same major crop (oranges) in all the major states it is grown (California and Florida).
6. The next set of tables consists of the same information as previous except it is broken down by each major state producing that crop.
7. The process of information begins again with a new major crop.

The end of the report includes a summary of each major crop, focusing mainly on summarizing the percentage of acreage receiving different types of fertilizers and pesticides. An index is given of the common and trade names of active ingredients listed in the report, and of all the crops included.

### ***Limitations of the Data***

The data presented are a snapshot in time, consisting of one year of data. The report would be much more useful if data from past reports was included for a trend analysis. The report also acts as more of a summary than an analysis. Its user unfriendliness is compounded by a lack of a table of contents and a description of how the data are presented.

### ***How Can States Use the Data***

States can use the data if data from past reports are combined to gauge the loadings of pesticides and fertilizers to crops and land. The data can serve as an indicator of

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<sup>4</sup> *Agricultural Chemical Usage, 1993 Fruits Summary, Survey Procedures, June 1994, 2.*

risk to humans from working in the fields, risk of groundwater contamination, and risk in consuming food containing residues.

*Pesticides Data Source Four:*  
**US Department of Agriculture,  
Agricultural Chemical Usage,  
Field Crops Summary**

This publication is an annual in the series of Field Crop Summaries issued by the National Agricultural Statistics Service (NASS). It was first printed in March 1995.

***How to Get the Report***

Copies of and questions about the report may be addressed to:

Merritt Padgitt  
Economist  
Environmental Indicators and Resource Accounting Branch  
Telephone: (202) 720-0433

Van Johnson  
Environmental Statistician  
National Agricultural Statistics Service  
Telephone: (202) 720-7492

There is also a toll free number to receive this and other NASS reports. The number is (800) 999-6779

The address to write for information is:  
Economic Research Service/NASS  
341 Victory Drive  
Herndon, VA 22070

***Description of the Report***

This report was funded by the Water Quality Initiative to determine the magnitude of water quality problems. The report includes farm use of fertilizers and pesticides during 1994 on corn, cotton, potatoes, soybeans, wheat, and data on target pest by pesticide active ingredient for fall potatoes. State data in this report comes from Arizona, Arkansas, California, Colorado, Delaware, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Dakota, Texas, Washington, and Wisconsin.

***Where Do the Data Come From***

Data was collected from a sample survey conducted for the 1994 crop year. Data was collected on winter wheat beginning in late May, 1994, while data for other crops began in late July 1994. A random sample of fields was selected for each crop based on a survey of farmers. Every farm in the sample population had a chance of being selected in the sample.

A survey was done to obtain chemical application data by product name or trade name. A review compared the reported data with manufacturer label recommendations and with data from other farm operators using the same product. Following this review, product information was converted to an active ingredient level. The chemical usage estimates in this publication consist of survey estimates of those active ingredients.<sup>5</sup>

### ***How the Data Are Shown in the Report***

The report comes with no table of contents which makes it difficult to proceed through the information. The report is laid out in this format:

1. A table is presented for a major crop with the major states in which it is grown. For example, corn in ten major states.
2. The total area planted in 1,000 acres is given for each state
3. Fertilizer application is measured. This is broken into nitrogen, phosphate, and potash and is measured by the percent of the acreage receiving applications and the total applied.
4. The next table is presented with the same information except the focus is on pesticides applied instead of fertilizer.
5. The third table acts as a summary and measures all agricultural chemical applications for the same major crop (corn) in all the major states it is grown.
6. The next set of tables consists of the same information as previous except it is broken down by each major state producing that crop.
7. The process of information begins again with a new major crop.

Highlights of each major crop (corn, cotton, soybean, winter wheat, other spring wheat, corn) are on page three and four of the report. An index is given of the common and trade names of active ingredients listed in the report, and of all the crops included.

### ***Limitations of the Data***

The data presented are a snapshot in time, consisting of one year of data. The report would be much more useful if data from past reports was included for a trend analysis. The report also acts as more of a summary than an analysis. Its user unfriendliness is compounded by a lack of a table of contents and a description of how the data are presented.

### ***How Can States Use the Data***

States can use the data if data from past reports are combined to gauge the loadings of pesticides and fertilizers to crops and land. The data can serve as an indicator of risk to humans from working in the fields, risk of groundwater contamination, and risk in consuming food containing residues.

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<sup>5</sup> *Agricultural Chemical Usage, 1994 Field Crops Summary, Survey Procedures, March 1995, 2.*