U.S. Department of Agriculture

Pesticide Data Program--Progress Report

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The Pesticide Data Program. The Pesticide Data Program (PDP) was initiated in 1991 as part of a USDA-wide food safety initiative. Since that time, PDP has tested a wide range of commodities in the U.S. food supply, and Congress "…recognizes the importance of the Pesticide Data Program (PDP) to collect reliable, scientific-based pesticide residue data that benefits consumers, food processors, crop protection, pesticide producers, and farmers." Using the most current laboratory methods, PDP has tested both fresh and processed fruit and vegetables, grains and grain products, milk and dairy products, beef, pork, poultry, drinking water, bottled water, and groundwater for pesticide residues.

Program Operations. The USDA Agricultural Marketing Service (AMS) coordinates PDP, manages sample collection and testing, and publishes annual reports. AMS meets regularly with the U.S. Environmental Protection Agency (EPA) and other stakeholders including industry and grower groups to establish program priorities and direction. Participating States have a prominent role in program planning activities and policy establishment, particularly requirements relating to quality assurance. The USDA National Agricultural Statistics Service (NASS) provides sampling support to PDP, provides statistically reliable data on chemical usage at the State level, and collects economic data that link chemical usage with economic characteristics.

Focus on Children's Foods. In response to the 1996 Food Quality Protection Act and a 1993 report by the National Academy of Sciences, PDP focuses primarily on foods consumed by infants and children and provides critical, realistic pesticide residue data for EPA to use in assessing dietary exposure to pesticides. PDP data are used by the U.S. Food and Drug Administration (FDA), USDA's Economic Research Service (ERS) and Foreign Agricultural Service (FAS), participating States, academic institutions, chemical manufacturers, environmental interest groups, food safety organizations, and groups within the private sector representing food producers. PDP data are used by the Government and agricultural community to examine pesticide residue issues that could affect good agricultural practices relating to integrated pest management objectives and U.S. trade, particularly in the competitive global market.

Sampling. PDP samples are collected from the national food distribution system employing statistically reliable schemes designed for each commodity so that the data represent exposure to pesticide residues in the U.S. diet. Fruit and vegetables are collected at over 700 sites. Sampling of grains, meat, poultry, and some processed fruit and vegetables requires fewer sites to produce reliable statistics. A commodity is generally tested for two contiguous years and is reintroduced to the program at 5-year intervals so that PDP data reflect current pest management practices.

Testing - A Federal/State Partnership. State departments of agriculture work with USDA to collect and test samples. California, Colorado, Florida, Maryland, Michigan, Minnesota, Montana, New York, Ohio, Texas, Washington, and Wisconsin are part of the PDP effort. Two USDA laboratories also contribute to PDP testing - the AMS National Science Laboratory in Gastonia, North Carolina, and the Grain Inspection, Packers and Stockyards Administration Laboratory in Kansas City, Missouri. PDP laboratory methods are continually reevaluated and improved as necessary so that residues can be detected at extremely low concentrations.

PDP in 2006. In 2006, PDP tested 13,658 samples - 9,818 samples of fruit and vegetables, 739 peanut butter, 687 wheat grain, 1,310 poultry (paired breast/thigh samples), 367 bottled water, and 737 treated (finished) and untreated drinking water samples. This included the testing of 14 fresh fruit and vegetables (bananas, broccoli, carrots, cauliflower, cranberries, eggplant, grapefruit, greens (collard/kale), peaches, plums, spinach, summer squash, watermelon, and winter squash), 6 processed commodities (applesauce, orange juice, dried plums/prunes, frozen potatoes, raisins, and frozen sweet peas), peanut butter, wheat grain, poultry, bottled water, and drinking water.

Excluding drinking water samples, which were all from U.S. sources, approximately 80 percent of all samples tested were from U.S. sources, 18 percent were imports, 1 percent were of mixed origin, and 1 percent were of unknown origin. Approximately 32 percent of the orange juice samples were of mixed national origin.

Overall, 64 percent of fresh fruit and vegetables and 59 percent of processed fruit and vegetables showed detectable residues. Residues were detected in 30 percent of the peanut butter samples, 69 percent of wheat grain samples, 7 percent of the poultry breast and thigh samples, and 19 percent of the bottled water samples.

Excluding drinking water, 46 percent of all the samples tested contained no detectable pesticides [parent compound and metabolite(s) combined], 28 percent contained 1 pesticide, and 26 percent contained more than 1 pesticide. Low levels of environmental contaminants were detected in broccoli, carrots, kale greens, peaches, frozen sweet peas, spinach, watermelon, winter squash, peanut butter, and poultry at concentrations well below levels that trigger regulatory actions.

Excluding samples for which no tolerances are set (bottled water and treated/untreated drinking water), residues exceeding the tolerance were detected in 0.2 percent of the 12,554 samples tested in 2006 - 31 samples with 1 residue each. A tolerance is the maximum amount of a pesticide residue allowable on a raw agricultural commodity. Established tolerances are listed in the Code of Federal Regulations, Title 40, Part 180. Residues with no established tolerance were found in 3.1 percent of the samples. In most cases, these residues were detected at very low levels and some residues may have resulted from spray drift or crop rotations. PDP communicates these findings to FDA when they are reported by testing laboratories.

For bottled water, 12 different residues from 6 different pesticides were detected. Most samples with detectable residues contained only a single pesticide or metabolite. All detections were well below established FDA Standards of Quality. In finished drinking water, PDP detected low levels (measured in parts per trillion) of some pesticides, primarily widely used herbicides and their metabolites. Forty-eight different residues were detected in the untreated intake water and 39 in the treated water. The majority of pesticides, metabolites, and isomers included in the PDP testing profiles were not detected. None of the detections in the finished water samples exceeded established EPA Maximum Contaminant Level (MCL) or Health Advisory levels or established Freshwater Aquatic Organism criteria.

PDP in 2007. In 2007, PDP initiated testing of almonds, apple juice, fresh and frozen blueberries, celery, cherries, heavy cream, green beans, honey, nectarines, and tomatoes and continued testing commodities that were part of the 2006 program – bananas, broccoli, carrots, greens (collards/kale), peaches, frozen potatoes, raisins, and summer squash. Corn grain testing will continue through September 2008. The drinking water survey continued with paired raw and finished samples that were collected in Alabama, Arizona, Florida, Georgia, Indiana, Iowa, Maryland, Minnesota, Missouri, Montana, New Jersey, South Carolina, Texas, and Washington, D.C. Following a pilot study in 2006, a full groundwater survey was initiated in 2007, covering 75 sites located in agricultural areas across the nation.

PDP in 2008. In 2008, PDP plans to test asparagus, grape juice, potatoes, spinach, strawberries, and catfish. Testing will continue on commodities that were part of the 2007 program – apple juice, fresh and frozen blueberries, broccoli, celery, greens (collards/kale), green beans, honey, nectarines, peaches, summer squash, tomatoes, and corn grain. The drinking water survey will continue with paired raw and finished samples collected at sites determined in consultation with EPA. The groundwater program will continue at a selection of private wells located in agricultural areas across the Nation.

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Data and Reports. USDA recently prepared a summary of the 2006 PDP data. This summary, along with data from previous years, is available on the Internet at http://www.ams.usda.gov/pdp or by contacting the AMS Monitoring Programs Office.