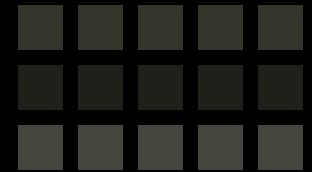


# USDA Pesticide Data Program

## Overview



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# Mission



- Provide data for dietary risk assessments and pesticide reregistration decisions to the Environmental Protection Agency (EPA)
- Support marketing of U.S. commodities
- Support USDA responsibility under the Food Quality Protection Act of 1996
- Provide information to the Food and Drug Administration on violations

# Food Quality Protection Act

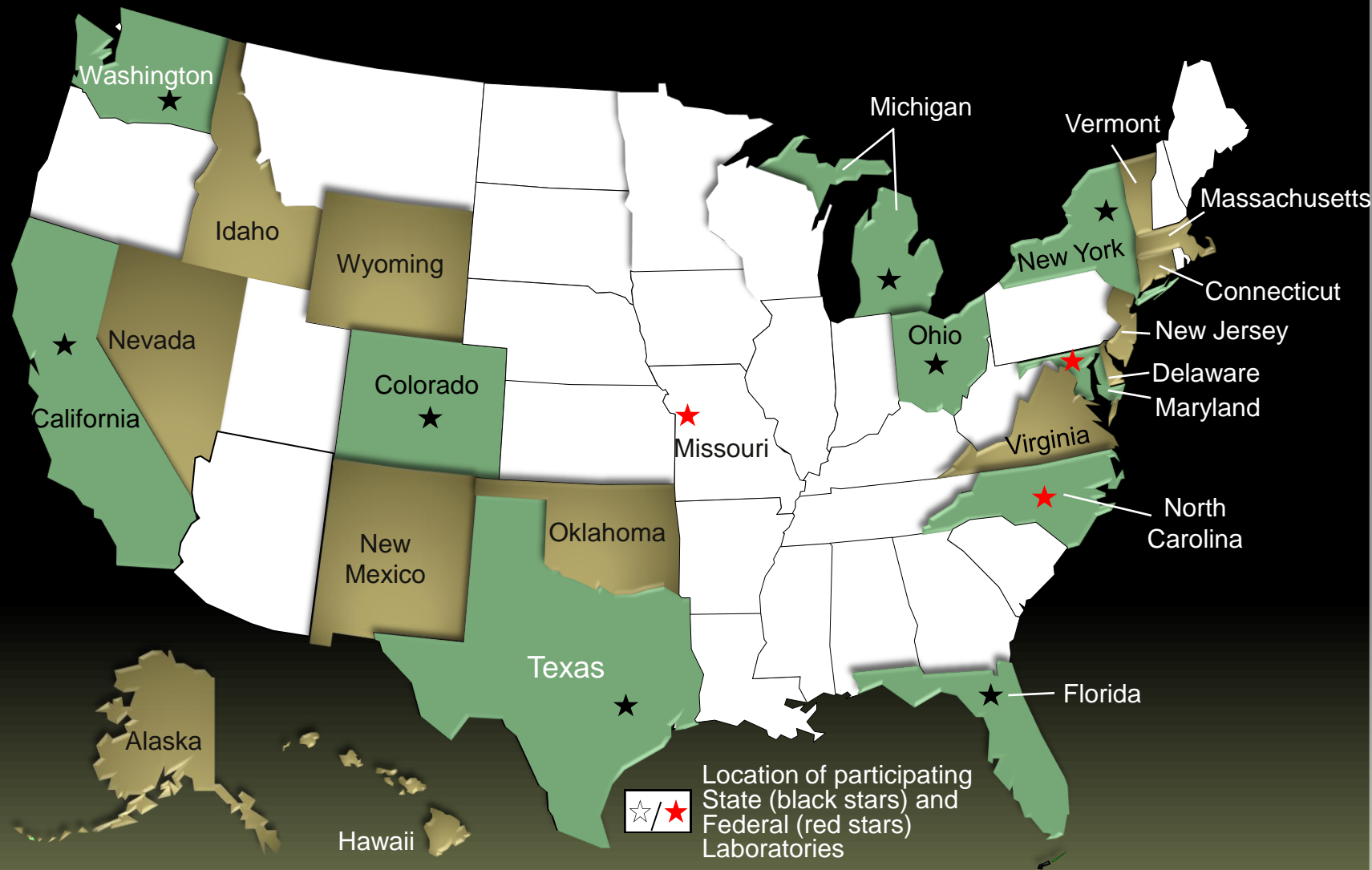
- Ensure that pesticide residues in food do not cause harm to humans and the environment
- Provides additional safety factor to protect children from pesticides
- Older pesticides have been replaced with “reduced risk pesticides”

# Overview

- 13,000-15,000 samples tested annually
- To date, 102 commodities sampled and tested
- Commodities in program for up to 2 years
- Rotation of high consumption items every 5 years
- New commodities based on data needs
- Sampling rates/timeframes adjusted to reflect seasonality
- Special surveys



# Program Participants



States participating in PDP

States where produce is directly marketed from participating States

Testing Services Only

# Sampling Objectives

- Represent U.S. population and therefore reflect consumption
- Represents all U.S. census regions
- Includes major fruit and vegetable production States
- Includes domestic and imported foods
- Samples collected within hours of reaching consumers - represent pesticide degradation in storage and transit

# Sampling

- Reliable laboratory results begin with and depend directly on the quality and timing of sample collection



*Samples ready for shipment*

# Sampling

PDP: Obtain statistically defensible representation of U.S. food supply so that PDP data reflect actual pesticide residue exposure from food

- Rigorous statistical design
- Random sampling
- Reflects what is typically available to consumer
- Sample collectors are trained in collection techniques
- Special surveys to capture imports or regional data





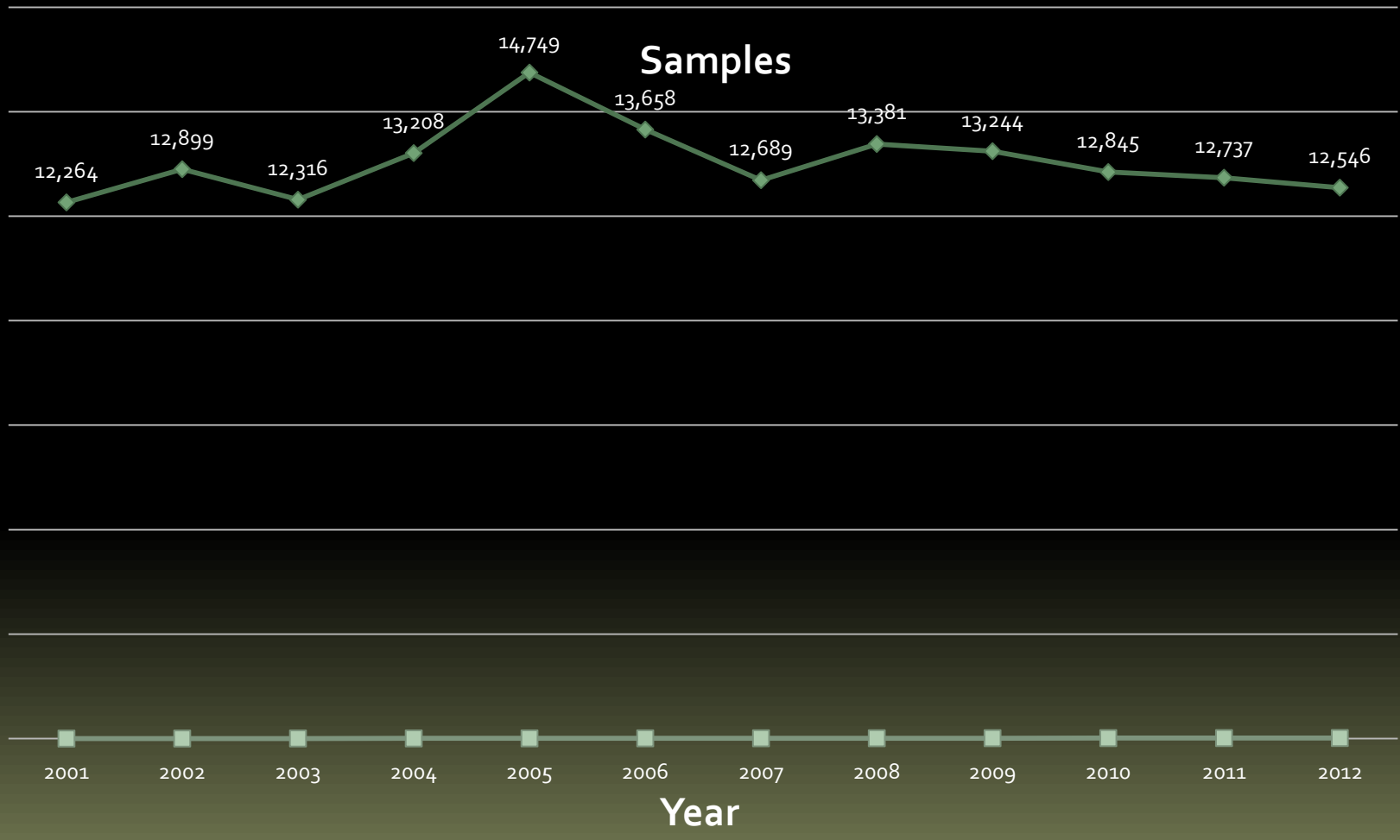
# Sampling

- 59 samples/commodity/month for fresh; 63 for most processed (NC collects 4 samples/month for 4 commodities)
- Sample information captured via handheld or laptop computers by inspectors on-site
- Fruit and vegetable sites at major food distribution centers and terminal markets
- Number of samples collected is apportioned according to population:

California	13	N. Carolina	4
Colorado	2	Ohio	6
Florida	7	Texas	8
Maryland	4	Washington	4
Michigan	6		
New York	9		



# PDP Samples Collected



# Commodities Tested

- Fruit and Vegetables
  - Fresh: > 50 high consumption fruit and vegetables tested on an ongoing basis
  - Processed: juice, canned products, paste, sauces, baby foods, etc.
- Grains:
  - Barley, corn, oats, rice, soybeans, wheat
- Nuts and Nut Products
  - Almonds, peanut butter
- Milk and Dairy Products
  - Butter, heavy cream, milk
- Meat, Poultry, Fish:
  - Beef, poultry, pork, catfish
- Other: Water, honey, eggs, corn syrup

# PDP Commodities in Calendar Year 2013



- Apple Juice
- Baby food
  - Applesauce
  - Peas
- Bananas
- Broccoli
- Butter
- Carrots
- Cauliflower
- Celery
- Grape Juice
- Green Beans
- Infant Formula
  - Dairy-based
  - Soy-based
- Mushrooms
- Nectarines
- Peaches
- Plums
- Raspberries
- Salmon
- Squash
  - Summer Squash
  - Winter Squash
- Wheat
- Groundwater
- Drinking Water



# PDP Commodities in Calendar Year 2012

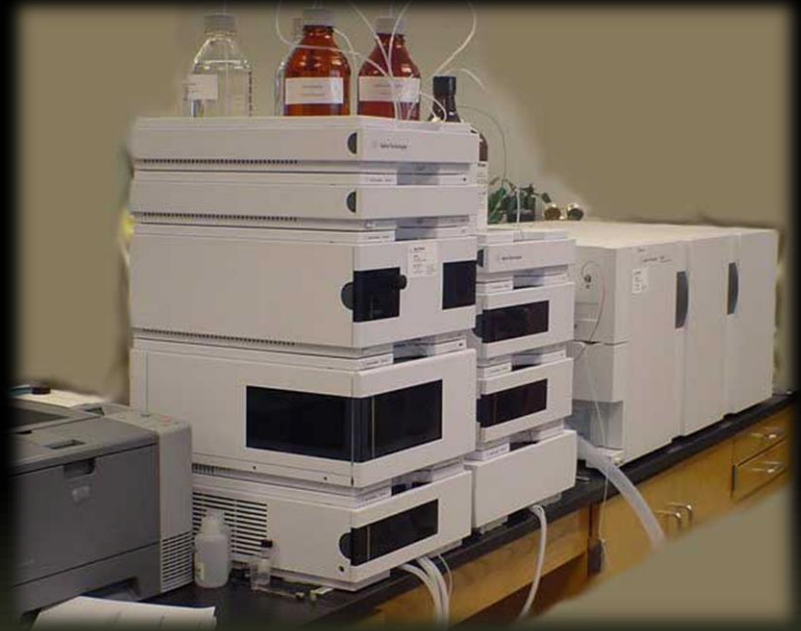


- Apple Juice
- Avocados
- Baby food
  - Applesauce
  - Carrots
  - Peaches
  - Peas
- Bananas
- Butter
- Cantaloupe
- Cauliflower
- Mushrooms
- Onions
- Orange Juice
- Papayas
- Peas (snap)
- Peppers (sweet bell)
- Plums
- Squash
  - Summer Squash
  - Winter Squash
- Tangerines
- Tomatoes (cherry/grape)
- Wheat
- Groundwater
- Drinking Water



# PDP Laboratory Analysis

- One or two laboratories analyze each commodity
- Samples prepared emulating consumer practices
- Lists of required compounds are commodity-specific
- State-of-the-art instrumentation
  - GC/MS and GC/MS-MS
  - LC/MS and LC/MS-MSLimits of detection (LOD) are very low (parts-per-billion for food; parts-per-trillion for water)



# Pesticides Tested

- Over 400 pesticides, metabolites, and isomers tested using multi-residue methods
- List is updated as new pesticides are registered
- Pesticide Classes:
  - Carbamates
  - Chloroacetanilides (alachlor, acetochlor, etc.)
  - Imidazolinones (imazapyr, imazaquin, etc.)
  - Neonicotinyls (acetamiprid, clothianidin, etc.)
  - Organochlorines
  - Organophosphates
  - Phenoxy acids (2,4,5-T; 2,4-D, etc.)
  - Pyrethroids (allethrin, bifenthrin, etc.)
  - Strobilurins (azoxystrobin, kresoxim-methyl, etc.)
  - Sulfonyl ureas (bensulfuron methyl, halosulfuron, etc.)
  - Triazines (atrazine, simazine, etc.)
  - Triazoles (difenoconazole, hexaconazole, etc.)

# PDP QA/QC Program

- Blanks, spikes, and process controls used with each sample set
- Method validation required for each new commodity and pesticide
- Limit of detection (LOD) and limit of quantitation (LOQ) determined experimentally at ppb levels (ppt for water)
- Participation in National and International Proficiency Testing required
- International accreditation required (ISO 17025)





# Remote Data Entry (RDE) System

- RDE is custom-built software
- RDE electronic Sample Information Form (e-SIF) System
- Web-based RDE System
  - Centralized .NET-based software
- Used by PDP/MDP Labs to enter and submit complete data sets
- Calendar-year data stored in Access database structure with plans to migrate to SQL server
- Can run ad-hoc queries in MS-Access in response to data requests



# How Are PDP Data Used?

- Pesticide tolerances evaluated by EPA using PDP data
- Pesticide uses reregistered or canceled based on outcome of tolerance evaluations
- Examine impact of agricultural practices on human health and the environment
- Monitor contaminants in drinking water and groundwater
- Monitor compliance with U.S. EPA tolerances (MRLs)
- Tolerance violations reported to FDA
- Verify pesticide usage statistics
- Facilitate export of U.S. commodities

# Pesticide Tolerances

- EPA regulates use of pesticides in the U.S. and establishes tolerances
- Tolerances are the maximum quantity of a pesticide residue allowable on a raw agricultural commodity
- FDA enforces EPA tolerances in all foods except meat and poultry
- The USDA Food Safety and Inspection Service is responsible for meat and poultry

# PDP DATA

- PDP Annual Summary of Data for years 1992-2011 are posted on our Web site:
  - [www.ams.usda.gov/pdp](http://www.ams.usda.gov/pdp)
- Latest data available is for 2011
- 2012 data expected in early 2014



# 2001-2011 Program Output

	2001	2003	2005	2007	2009	2010	2011
States	10	10	12	12	12	13	12
Crops	22	22	25	23	27	28	25
Analyses	1,024,774	990,372	1,409,605	1,359,676	1,884,212	1,923,734	2,098,808
Labs*	8S 3F	9S 2F	11S 2F	10S 2F	10S 3F	10S 3F	10S 3F
Compounds*	185	331	370	375	400	419	431

\*S = State; F = federal. Compounds include parent, metabolites and degradation products.

# Expansion of Testing Profiles

- Previously based on U.S. registrations, Action Levels (ALs), and MRLs
- GAO Audit, EU Apple Audit, EPA's OIG Audit: need to expand program to test for foreign uses
- Need to identify pesticides used in other countries that may not have U.S. registrations, but may be present on foods imported into the U.S.
- Have intelligence information of illegal pesticides used overseas – will add these to testing profiles



*Thank you!*