NASS Highlights
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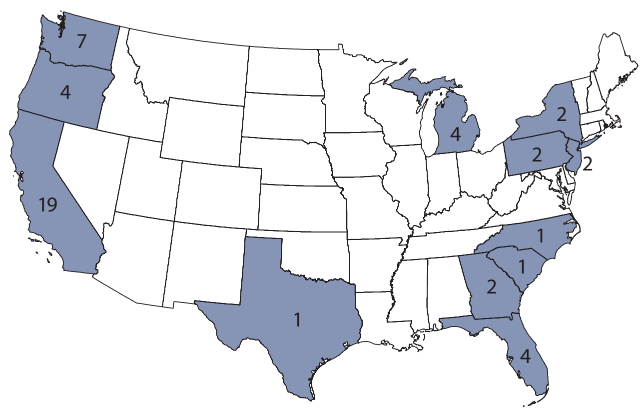
2023 AGRICULTURAL CHEMICAL USE

Fruit Crops

The 2023 Agricultural Chemical Use Survey of fruit producers collected data about fertilizer and pesticide use as well as pest management practices on acres planted to 21 different fruit crops. NASS conducted the survey among producers in 12 states, focusing on the states that were major producers of the surveyed crops. (Fig. 1)

Data are for the 2023 crop year, the one-year period beginning after the 2022 harvest and ending with the 2023 harvest. Data are available online for all 21 fruit crops (see sidebar for how to access). This document highlights three fruits – apples, blueberries, and peaches – each produced in at least six geographically diverse states.

Fig. 1. States Included in the 2023 Fruit Chemical Use Survey
(number of crops surveyed in state)



Fertilizer Use

Fertilizer refers to a soil-enriching input that contains one or more plant nutrients, primarily nitrogen (N), phosphate (P_2O_5), potash (K_2O), sulfur (S). For the 2023 crop year, nitrogen was the most widely applied nutrient on apples (used on 75% of acres planted to apples) and peaches (52% of planted acres). For blueberries, potash was the most widely applied nutrient (83% of planted acres), followed by phosphate (79%) and nitrogen (74%).

Pesticide Use

The pesticide active ingredients used on fruit are classified as herbicides (targeting weeds), insecticides (targeting insects), fungicides (targeting fungal disease), and other chemicals (targeting all other pests and other materials, including extraneous crop foliage).

About the Survey

The Agricultural Chemical Use Program of USDA's National Agricultural Statistics Service (NASS) is the federal government's official source of statistics about on-farm and post-harvest commercial fertilizer and pesticide use and pest management practices. NASS conducts agricultural chemical use surveys as part of the Agricultural Resource Management Survey. NASS conducted the fruit chemical use survey in fall 2023.

Access the Data

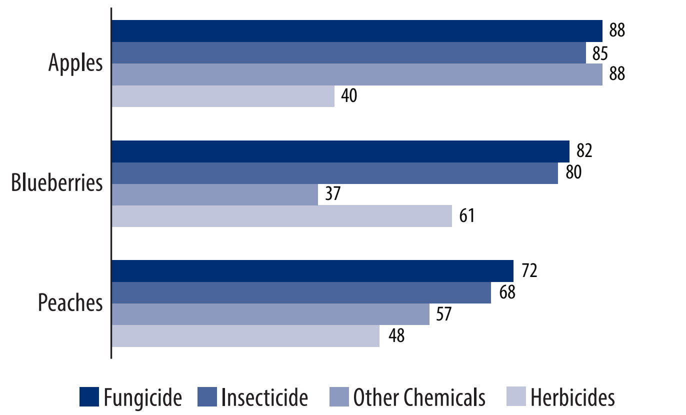
Access 2023 and earlier fruit chemical use data through the Quick Stats database (http://quickstats.nass.usda.gov).

- In Program, select "Survey"
- In Sector, select "Environmental"
- In Group, select "Fruit"
- In Commodity, select the fruit(s) for which you want data
- Select your category, data item, geographic level, and year

For pre-defined Quick Stats queries that take you to data for a particular fruit, go to bit.ly/AgChem and click "Data Tables" under the 2023 Fruits heading. For survey methodology information, click "Methodology."

Apple growers applied both fungicides and other chemicals equally to 88% of the acres. Blueberry and peach growers applied fungicides to 82% and 72% of acres, respectively. Growers applied insecticides to 85% of apple acres, 80% of blueberry acres, and 68% of peach acres. Herbicides were used less extensively. (Fig. 2)

Fig. 2. Pesticides Applied to Selected Fruits, 2023 Crop Year
(percent of planted acres)



Percent of acres treated.

Pest Management Practices

The survey asked growers to report on the practices they used to manage pests, including weeds, insects, and diseases. Fruit growers reported practices in three categories. Table 1 shows the top practices in each category.

- *Prevention* practices involve actions to keep a pest population from infesting a crop or field.
- *Monitoring* practices involve observing or detecting pests through systematic sampling, counting, or other forms of scouting.
- *Suppression* practices involve controlling or reducing existing pest populations to mitigate crop damage.

Table 1. Top Practices in Pest Management Category, 2023 Crop Year
(percent of planted acres, 21 fruits)

Prevention: Crop acres irrigated	94
Prevention: Cleaned equipment and implements after field work	88
Monitoring: Scouted for insects and mites	98
Monitoring: Scouted for diseases	98
Suppression: Used pesticides with different mechanisms of action to keep pest from becoming resistant to pesticides	70
Suppression: Compared scouting data to published information to assist in decision making	58

Table 2. Top Pesticides Applied to Selected Fruits, 2023 Crop Year
(percent of planted acres, 21 fruits)

Active Ingredient	% of Acres with Ingredient Applied[a]	Avg. Rate (lbs/acre)	Total Applied (lbs)
Fungicides			
Apples			
Trifloxystrobin	60	0.120	20,600
Fluopyram	49	0.115	16,100
Blueberries			
Captan	53	4.473	215,500
Fenbuconazole	39	0.230	8,300
Peaches			
Propiconazole	34	0.197	4,600
Sulfur	30	16.645	346,700
Insecticides			
Apples			
Chlorantraniliprole	65	0.113	21,100
Spinetoram	54	0.124	18,900
Blueberries			
Zeta-cypermethrin	43	0.065	2,500
Bifenthrin	34	0.288	9,700
Peaches			
Lambda-cyhalothrin	28	0.075	1,400
Esfenvalerate	27	0.085	1,600
Herbicides			
Apples			
Pyraflufen-ethyl	20	0.005	300
Glyphosate isopropylamine salt	18	1.241[b]	64,600[b]
Blueberries			
Glufosinate-ammonium	29	1.677[b]	43,800[b]
Flumioxazin	22	0.208	4,300
Simazine	22	1.120	22,900
Peaches			
Rimsulfuron	19	0.058	800
Flumioxazin	12	0.355	2,900
Other Chemicals			
Apples			
Mineral oil	63	32.500	5,860,100
Prohexadione calcium	37	0.288	30,000
Blueberries			
Cuprammonium acetate	12	1.034	11,400
Indaziflam	8	0.061	400
Reynoutria sachaline	8	0.382	2,700
Peaches			
Mineral oil	31	26.075	557,500
Indaziflam	19	0.083	1,100

[a] *Acres with multiple ingredients are counted in each category.*
[b] *Expressed in acid equivalent.*