California Department of Pesticide Regulation

The 2024 California Pesticide Residue Monitoring Program Report



Table of Contents

The 2024 California Pesticide Residue Monitoring Program Report 3

Collection Sites 4

Sampling Results 5

Country of Origin 7

Dietary Risk Assessments 11

California Grown Sample Results 12

Enforcement of California Grown Produce 14

Organic Sample Results 16

DPR Enforcement on Illegal Pesticide Residues 17

Appendix 1. Origin, commodity, total collected, number violative, and percent violative, CPRMP 2024 samples. 19

The 2024 California Pesticide Residue Monitoring Program Report

The Department of Pesticide Regulation's (DPR) California Pesticide Residue Monitoring Program (CPRMP) samples domestically grown and imported fresh produce commodities at sites where produce is packed, sold, or distributed and analyzes the commodities for pesticide residues. CPRMP enforces the legal pesticide residue tolerances set by the United States Environmental Protection Agency (U.S. EPA) to prevent "public exposure to illegal residues" (California Food and Agricultural Code [FAC] section 12532). An illegal pesticide residue is any residue that exceeds the U.S. EPA tolerance (OT) or a residue detected with no established tolerance (NTE) for that commodity. A tolerance is the maximum residue level of a specific pesticide allowed on human or animal food. In establishing tolerances, the U.S. EPA determines that a pesticide can be used with "reasonable certainty of no harm." U.S. EPA establishes pesticide tolerance levels based on the following:

- Pesticide toxicity,
- How much of the pesticide is applied,
- How often the pesticide is applied,
- How much of the pesticide remains in or on the commodity.

The Code of Federal Regulations, Title 40 (40 CFR), lists tolerances for pesticide active ingredients and dictates how to analyze the raw agricultural commodities for pesticide residue testing. As the lead agency, DPR has the authority to levy civil penalties against anyone who packs, ships, or sells produce with illegal residues (FAC section 12671).

DPR focuses on sampling and testing for illegal pesticide residues the following high-risk commodities:

- Produce highly consumed by infants and children.
- Produce treated with pesticides listed under Proposition 65 as carcinogens or reproductive toxins.
- Produce reflective of consumption patterns among different ethnic and socioeconomic groups.
- Produce which has a history of detected illegal pesticide residues.
- Produce originating from countries with a history of detected illegal pesticide residues.

Produce sampling data is not statistically representative of the residues expected for a particular pesticide, commodity, or place of origin. As a result of collecting samples based on the factors noted above, the results are biased towards finding commodities more likely to have pesticide residues than if commodities were randomly selected.

DPR contracts with the California Department of Food and Agriculture's (CDFA) Center for Analytical Chemistry to analyze samples. Their International Organization for Standardization ISO/IEC 17025

accredited laboratories analyze samples for over 500 different pesticides and pesticide breakdown products. ISO/IEC 17025 accreditation is the standard for testing and calibration laboratories worldwide.

If illegal residues are found, DPR immediately removes the illegal produce from the channels of trade. In addition, if the owner of the commodity has additional produce from the same source, DPR quarantines those lots until subsequent laboratory testing determines if they are free from illegal residues. Further, DPR traces the distribution of illegal produce by contacting distributors and vendors throughout California, imposing quarantines, and conducting additional sampling and testing.

Collection Sites

In 2024, CPRMP staff collected produce samples from 550 different businesses throughout California (Figure 1).

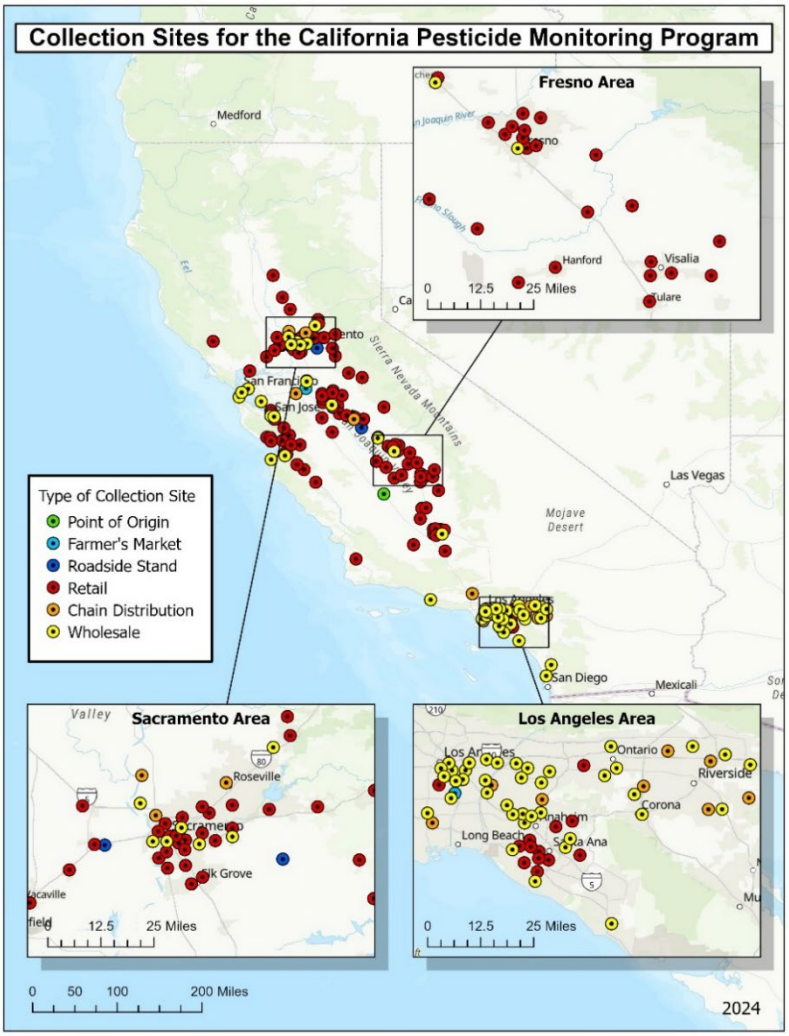


Figure 1. Map of Sampling Sites throughout California

Sampling Results

Out of the 3,032 produce samples collected by DPR, 1,195 (39.4%) samples had zero residues detected, while 1,740 (57.4%) samples detected residues below U.S. EPA tolerances. Of the samples analyzed, 97 (3.2%) samples detected illegal residues. Among the 97 illegal samples, 71 contained residues with no established tolerance (NTE), while 35 of the 97 illegal samples had residues exceeding the established tolerance (OT). The total number of NTE and OT residues exceeds the total number of samples with illegal residues, as some samples contain multiple residues (Figure 2).

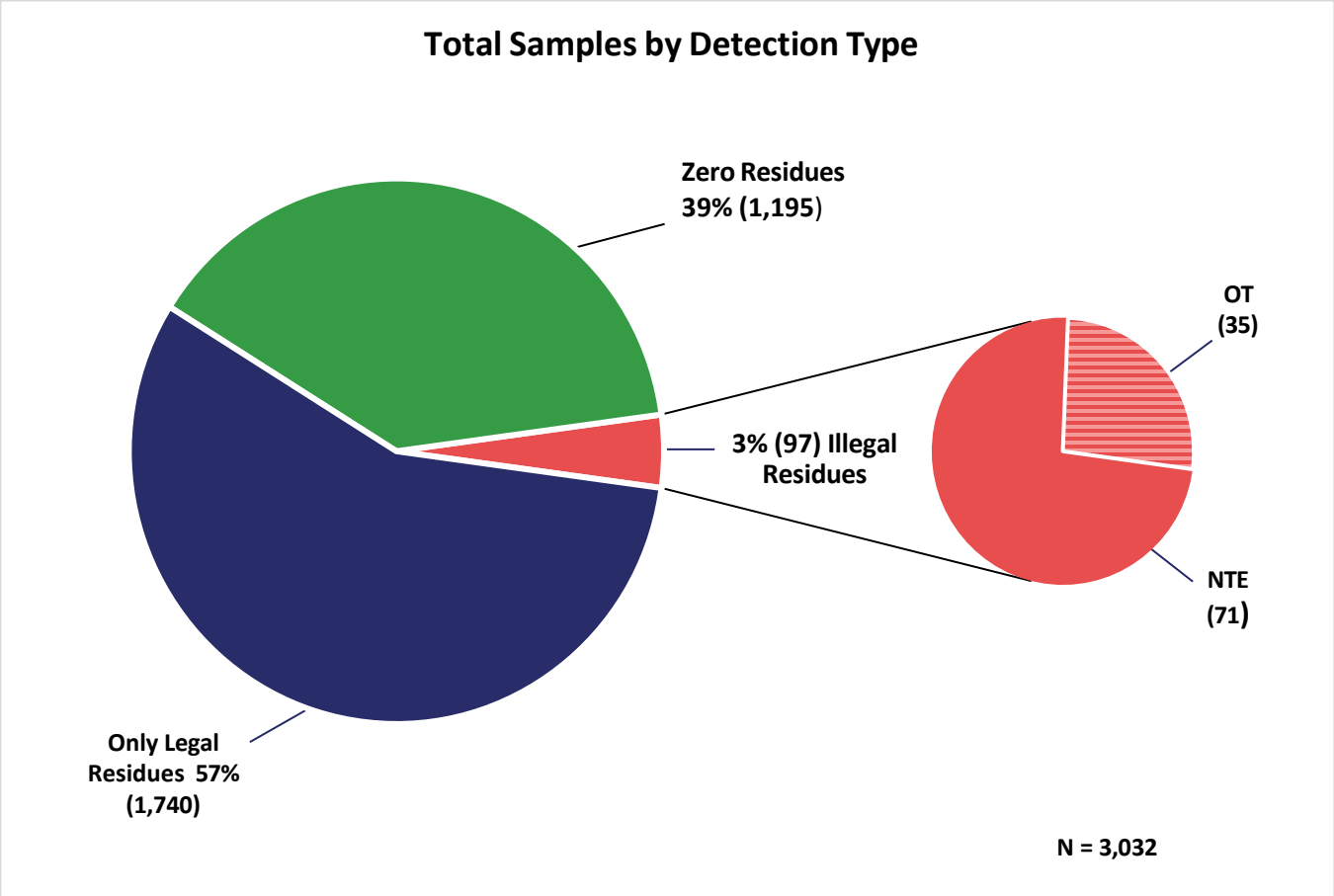


Figure 2. Number of samples with no residues, legal residues, or illegal residues detected in 2024; violations by type.

The percentages of samples with only legal residues, samples with no residues, and samples with violative residues have remained steady from 2014-2024 (Figure 3).

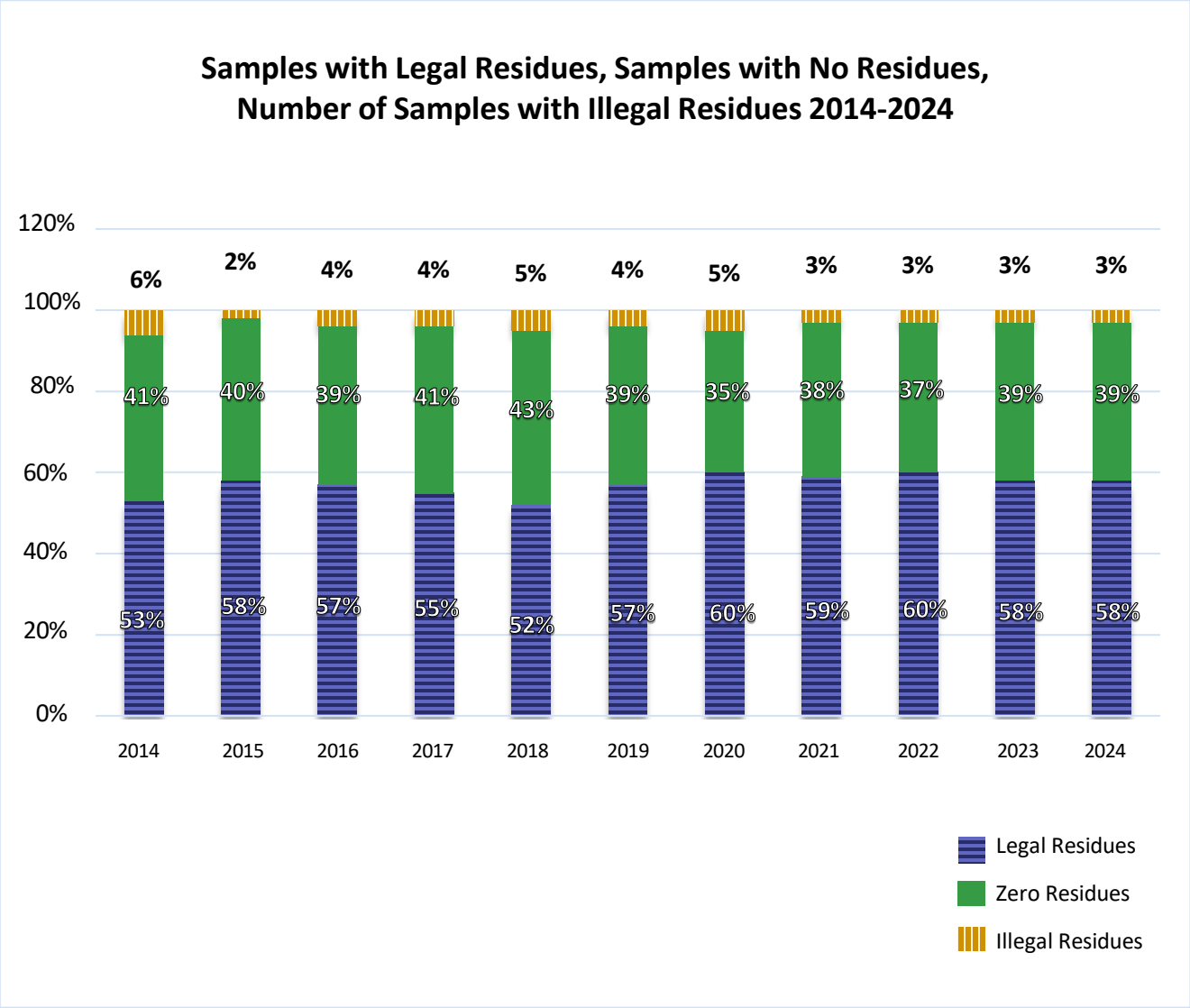


Figure 3. Samples with no residues, only legal residues, and illegal residues, 2014-2024.

Country of Origin

In 2024, the CPRMP collected samples from 23 countries spanning six continents (Figure 4).

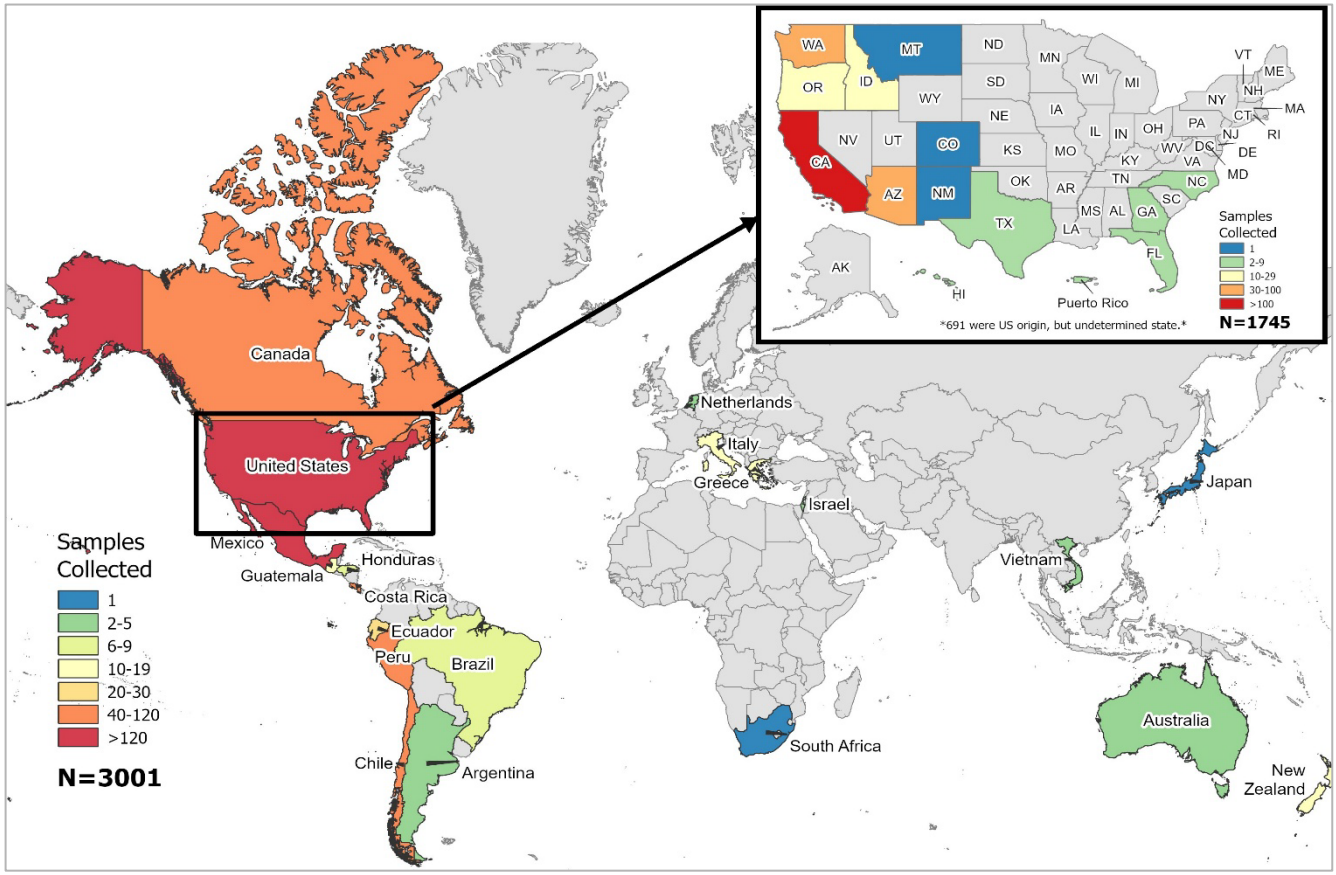


Figure 4. Map of Origins of Produce Sampled in 2024.

The majority of the samples collected, 1,745 (57%), were of domestic origin, while 1,256 (42%) were imported. The remaining 31 (1%) samples were of undetermined origin due to a lack of information on the containers.

Most illegal residues were found on imported produce and accounted for 77 out of 97 (79%) of all illegal samples. Only 20 (21%) of samples with illegal residues originated domestically.

When comparing illegal residue rates between samples of domestic and imported produce, imported produce samples were approximately 5 times more likely to have an illegal residue than samples of domestically grown produce. This difference in violation rates between domestic and imported produce is consistent with results from previous years (Figure 5).

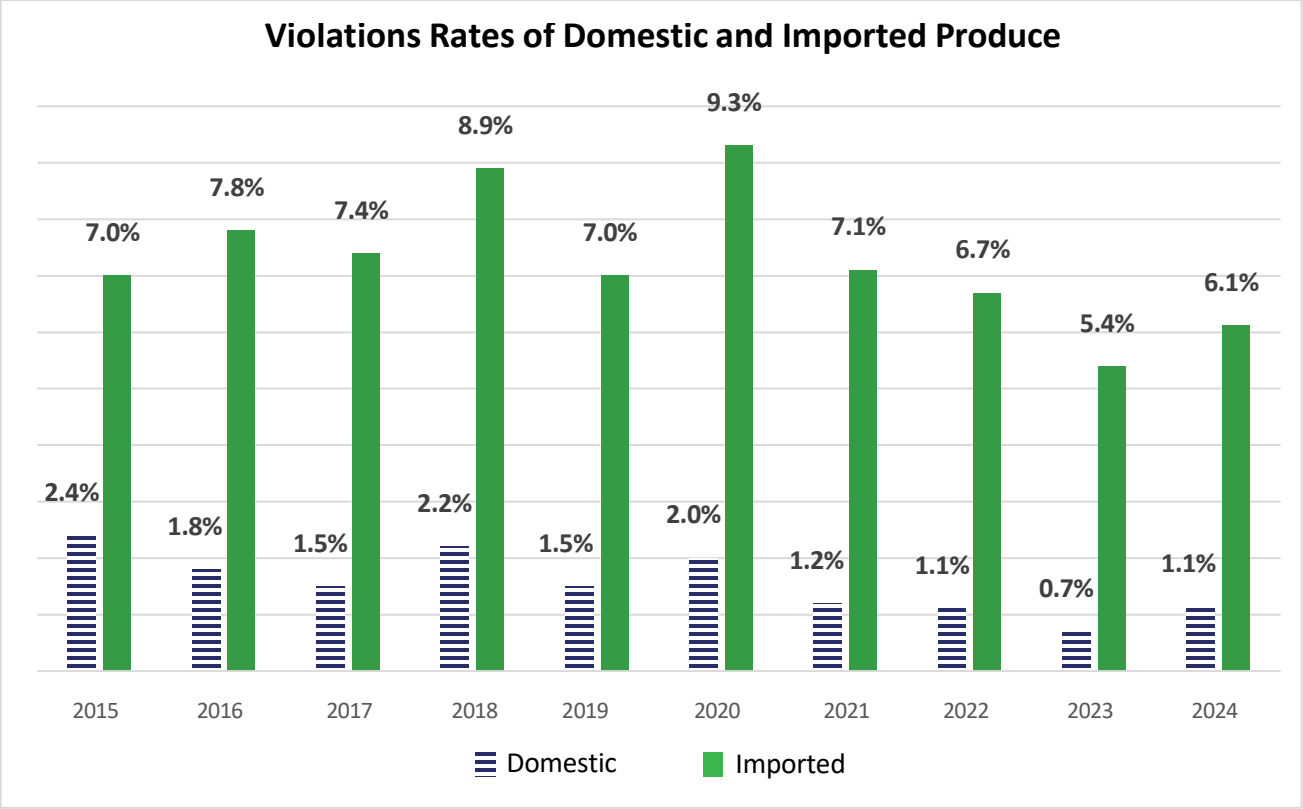


Figure 5. Summary of rates of illegal residues on domestic and imported samples, 2015-2024.

In 2024, DPR tested 115 different types of fresh fruits and vegetables. Out of these, illegal residues were detected on 47 different commodities (Table 1). Apart from the targeted commodities, DPR staff also collect samples based on availability. The complete list of all commodities and rates of violation can be found in Appendix 1.

Table 1. Commodity list of samples with illegal pesticide residues.

Commodity	Total Violative	Total Collected
Apple	1	65
Asparagus	1	15
Beans (Green, String, Snap)	1	17
Beans, Asparagus (Yard Long Bean)	1	2
Blackberry	4	85
Blueberry	3	38
Bok Choy (Choy Sum, Pak Choi)	3	22

Commodity	Total Violative	Total Collected
Cactus Pads	7	12
Cactus Pear	4	7
Chayote (Christophenes)	6	73
Chinese Cabbage (Napa, Wong Bok)	1	8
Chinese Leafy Greens	1	1
Chinese Radish/Daikon	1	10
Cilantro (Coriander Leaves)	1	7
Corn, Sweet	1	99
Cucumber (Pickling, Chinese, Etc.)	5	75
Dill	1	1
Dragonfruit, Pitayah	1	7
Eggplant (Oriental, etc.)	2	88
Fig	1	3
Gai Choy	1	1
Garbanzos (Chickpeas)	1	2
Ginger Root	3	6
Grapes	3	124
Guava	1	3
Kale	6	66
Kiwi Fruit Fuzzy	1	80
Lettuce, Leaf	2	132
Lotus Root	2	2
Mango	4	119
Papaya	1	12
Peach	1	105
Pear, Asian (Ya, Ya LI, Nashi)	1	12
Peppers (Bell, Etc.)	1	76
Peppers (Chili Type)	4	39
Pineapple	1	27
Pomegranate	2	9
Pomelo (Shaddock) (Citrus Grandis)	1	4
Spinach	1	78
Squash (Summer)	1	66

Commodity	Total Violative	Total Collected
Strawberry	3	118
Sweet Potato	1	31
Tangerine (Mandarin, Satsuma)	3	31
Taro (Dasheen) (Root Crop)	1	2
Tejocote	1	2
Tomatillo	2	89
Turnip Greens	2	15

Illegal residues were found on commodities originating from 11 countries (Table 2).

Table 2. Percent of illegal produce samples collected in 2024 by country of origin.

Country of Origin	Violative Samples	Total Samples	Percent Illegal[‡]
Argentina	1	3	--
Chile	1	109	1%
China	7	22	32%
Costa Rica	1	45	2%
Ecuador	2	29	7%
Greece	1	10	--
Korea	1	2	--
Mexico	59	892	7%
Peru	3	40	8%
Vietnam	1	2	--
United States	20	1,745	1%

[‡]*Percentages not calculated for sample sizes <10*

Dietary Risk Assessments

It's important to note that produce with illegal residues does not automatically indicate a potential health concern. DPR's Human Health Assessment Branch (HHA) conducts dietary risk assessments on illegal sample pesticide residues to determine health risks to the public.

A dietary risk assessment uses consumption rates of the produce and acute reference doses for the pesticide or combination of pesticides, to determine whether the residues pose a potential acute health risk to consumers by measuring the level of residue in the produce eaten at a defined consumption level (mg/kg) in a single day. If HHA determines the produce may pose a potential acute health risk to consumers, DPR notifies and collaborates with the California Department of Public Health (DPH) and the U.S. Food and Drug Administration (FDA) to remove it from the channels of trade.

In 2024, dietary risk analyses by HHA determined that 15 of the 97 illegal samples posed a potential acute health risk to consumers. These samples originated from Costa Rica, China, and Mexico. As in previous years, organophosphates or carbamates were the primary residues leading to health risks (Table 3). When a sample is found to pose an acute health risk, DPR not only investigates to identify the source of the contaminated produce but also expands its investigation to determine all the places where the produce may have been sold. The purpose of this effort is to remove contaminated produce from the marketplace. This requires collaboration among the three regional offices and headquarters to track, locate, and remove contaminated produce.

Table 3. Commodities, origin, and pesticides determined to be potential acute health risks in 2024.

Country of Origin	Commodity	Pesticide Residues Detected
China	Apple	Chlorpyrifos
Mexico	Beans, Asparagus (Yardlong Bean)	Acephate, Isocycloseram, Methamidophos,
Mexico	Blueberry	Formetanate HCl, Methamidophos
Mexico	Chayote (Christophenes)	Monocrotophos
Mexico	Chayote (Christophenes)	Methamidophos
Mexico	Chayote (Christophenes)	Monocrotophos
Costa Rica	Chayote (Christophenes)	Chlorpyrifos
Mexico	Chayote (Christophenes)	Acephate, Methamidophos

Country of Origin	Commodity	Pesticide Residues Detected
Mexico	Cactus Pear	Monocrotophos
Mexico	Cactus Pear	Chlorpyrifos, Dimethoate
Mexico	Cactus Pads	Diazinon, Monocrotophos
Mexico	Cactus Pads	Monocrotophos
Mexico	Cactus Pads	Methomyl, Monocrotophos
Mexico	Cactus Pads	Monocrotophos
Mexico	Tejocote	Chlorpyrifos, Cypermethrin, Permethrin

California Grown Sample Results

Produce grown in California made up 30% of the total samples collected and 53% of all domestically grown samples. This number may not fully represent the actual amount of California-grown produce collected, as some items labeled "product of US" could be from California.

When illegal pesticide residues are discovered on produce grown in California, DPR refers the investigation to the local County Agricultural Commissioner's Office (CAC) to determine if there are any violations of pesticide laws or regulations. Although both DPR and CACs have the authority to impose civil penalties for the unauthorized use of pesticides, the CAC has primary enforcement authority when there are violations of pesticide use within their county (FAC 2281). However, DPR has the authority to impose civil penalties on anyone involved in packing, shipping, or selling produce with illegal pesticide residues (FAC 12671).

Over 98% of the samples labeled as grown in California had legal or zero detectable residues. Of the 920 California-grown samples tested, only 17 (2%) samples had illegal residues (Figure 6). The findings for 2024, as in previous years, indicate that the produce grown and consumed in California is safe to eat.

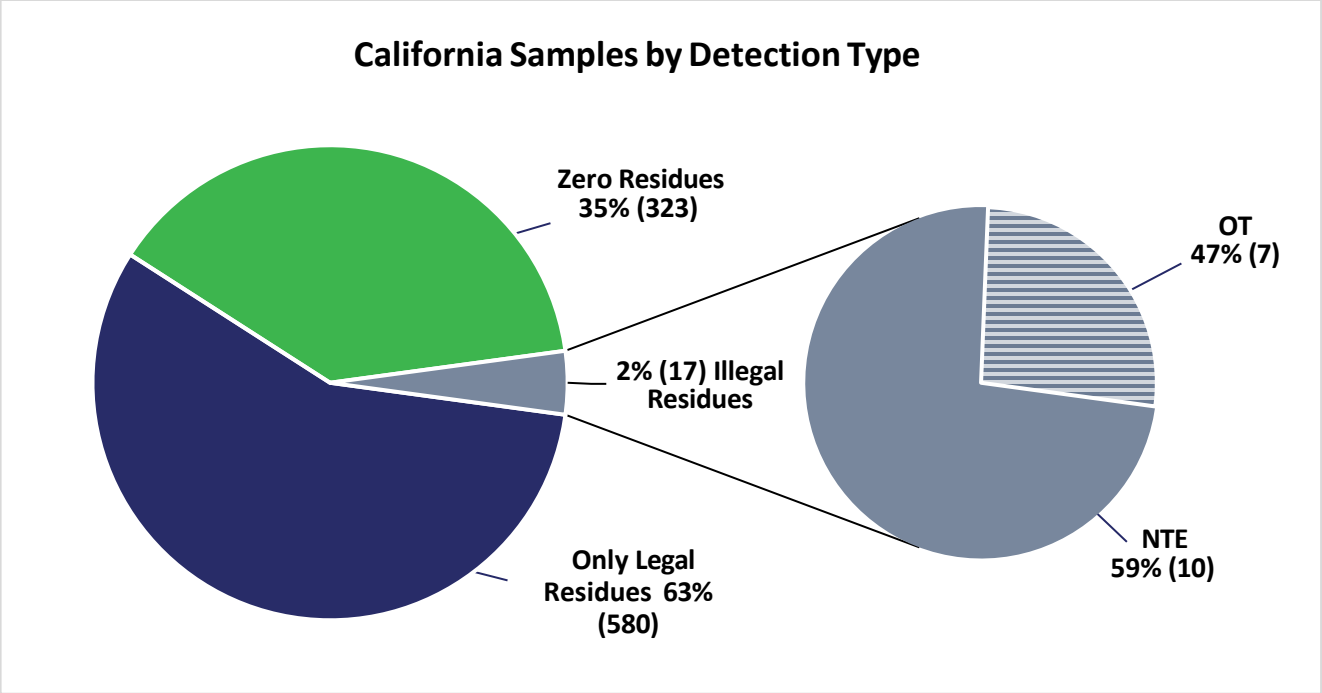


Figure 6. Commodities with only legal, zero residues, and illegal residues, by detection type.

The CPRMP sampled 73 different types of California-grown fruits and vegetables. Of these, 8 commodities had at least one sample with an illegal pesticide residue (Table 4).

Table 4. California-grown commodities with illegal pesticide residues.

Commodity	Pesticide	Residue Amount	U.S. EPA Tolerance	County Of Production
Beans (Green, String, Snap)	Flutriafol	0.015	NTE	Santa Barbara
Bok Choy (Choy Sum, Pak Choi)	Cyhalothrins, Non-Specific	0.074	0.01	Kern
Chinese Cabbage (Napa, Wong Bok)	Dimethoate	0.16	NTE	Fresno
Cilantro (Coriander Leaves)	Carbaryl	0.17	NTE	Monterey
Fig	Methoxyfenozide	0.045	NTE	Madera
Grapes	Acetamiprid	0.6	0.35	Madera
Kale	Carbendazim	0.011	NTE	Stanislaus
Kale	Cyhalothrins, Non-Specific	0.028	0.01	Monterey
Kale	Linuron	0.02	NTE	Ventura

Commodity	Pesticide	Residue Amount	U.S. EPA Tolerance	County Of Production
Kale	Permethrin	0.93	NTE	Ventura
Peach	Thiabendazole	0.06	NTE	Tulare
Pomegranate	Propargite	0.014	NTE	Madera
Strawberry	Acequinocyl	0.52	0.5	Santa Barbara
Strawberry	Cyflumetofen, Tetraconazole	0.61 0.33	0.6 0.25	Santa Barbara
Strawberry	Pyrimethanil	3.1	3	Ventura
Turnip Greens	Propyzamide	0.026	NTE	Stanislaus
Turnip Greens	Thiabendazole	0.028	0.01	Stanislaus

Enforcement of California Grown Produce

In 2024, DPR referred seventeen investigations to the local CACs, including Fresno, Kern, Madera, Monterey, Santa Barbara, Stanislaus, Tulare, and Ventura counties.

DPR collected a sample of strawberries grown in Ventura that contained a residue of Pyrimethanil above the allowed tolerance. The Ventura County Agricultural Commissioner (CAC) could not identify the specific source of the illegal residue. However, they determined that the grower violated California Code of Regulations (CCR) § 6724 (b) by failing to ensure that their employees who handle pesticides were trained for each pesticide before application.

A sample of kale, also grown in Ventura County, showed an over-tolerance of linuron. The Ventura CAC investigation determined the grower violated 3CCR § 6614, as the residue resulted from drift from an application on a neighboring crop.

A cilantro sample grown in Monterey County was confirmed to be contaminated with carbaryl. There is no U.S. EPA tolerance established for carbaryl on cilantro. The Monterey CAC determined the illegal residue resulted from using contaminated equipment and therefore found the grower in violation of 3CCR § 6600 (b) and 3CCR § 6608.

Of the seventeen referrals, investigative findings for ten cases were inconclusive. Investigations are ongoing for the remaining cases.

Table 5. Commodity, violative residue by amount and type, and status of County Investigation of California-grown produce.

Commodity	Pesticide Detected and Violation (PPM)	County	Investigation Status/ conclusion
Bok Choy	Cyhalothrin 0.074 OT	Kern	Inconclusive
Cilantro	Carbaryl 0.17 NTE	Monterey	In progress; Violations: 3 CCR 6600 (b); 3 CCR 6608
Fig (Black)	Methoxyfenozide 0.045 NTE	Madera	In Progress
Grape (Green)	Acetamiprid 0.60 OT	Madera	Inconclusive
Green Bean	Flutriafol 0.015 NTE	Santa Barbara	Inconclusive
Kale	Permethrin 0.93 NTE	Ventura	ENF response pending
Kale	Carbendazim 0.011 NTE	Stanislaus	Inconclusive
Kale	Linuron 0.020 NTE	Ventura	Violations: 3 CCR 6614; ENF Response: pending
Kale	Cyhalothrin 0.028 OT	Monterey	In Progress
Napa Cabbage	Dimethoate 0.016 NTE	Fresno	Inconclusive
Peach	Thiabendazole 0.026 NTE	Tulare	Inconclusive
Pomegranate	Propargite 0.014 NTE	Madera	In Progress
Strawberry	Hydroxy-Acequinocyl 0.52 OT	Santa Barbara	Inconclusive
Strawberry	Cyflumetofen 0.61 OT, Tetraconazole 0.33 OT	Santa Barbara	Inconclusive
Strawberry	Pyrimethanil 3.1 OT	Ventura	In progress; Violations: 3 CCR 6724 (b)
Turnip Greens	Pronamide (Propyzamide) 0.026 NTE	Stanislaus	Inconclusive
Turnip Greens	Thiabendazole 0.028 OT	Stanislaus	In Progress

Organic Sample Results

The California Department of Food and Agriculture (CDFA) runs the California State Organic Program and is responsible for enforcing state and federal organic laws. Certified organic growers must comply with the United States Department of Agriculture's (USDA) organic regulations, including which nonorganic substances may be used in organic production and handling. In addition to pesticides approved for use on organic produce, residues of non-organic pesticides may be present on certified organic produce at a level less than 5% of the U.S. EPA tolerance for conventionally grown commodities (Code of Federal Regulations, Title 7, Part 205.671). The CPRMP collects organic produce during routine sampling and shares testing results with CDFA's State Organic Program. In cases where an organic sample has pesticide residue levels above the U.S. EPA tolerance for conventionally grown commodities, DPR will also follow up and investigate the illegal sample.

DPR collected 276 organic samples in 2024. These samples represented 51 commodities from 11 countries. Of the 276 organic samples collected, 197 (71%) were domestic and 78 (28%) were imported; one sample was of undetermined origin. A total of 64 residues were detected on 35 of the organic samples. Only two organic samples, less than 1%, had residues above the U.S. EPA tolerance for conventionally grown commodities; one mango from Mexico and one peach from California were violative, both carrying post-harvest fungicides, carbendazim and thiabendazole, respectively (Table 6). More information about the State Organic Program is available on CDFA's ***website***.

Table 6. Organic commodities with detected pesticide residues, 2024.

Commodity	Residue	Number Collected
Apple	Diphenylamine	1
Beets, (Leafy Vegetable)	Spinosad	1
Beets, (Root Crop)	Spinosad	2
Blackberry	Fenpyroximate	1
Blackberry	Spinosad	5
Grapefruit	Cyantraniliprole, Fenpropathrin	1
Grapes	Boscalid, Chlorantraniliprole, Fludioxonil, Fluopyram, Methoxyfenozide, Metrafenone, Pydiflumetofen, Tetraconazole,	1
Kale	Pendimethalin	2
Lettuce, Leaf	Flupyradifurone, Lambda-Cyhalothrin, Mandipropamid, Propamocarb,	1
Mango	Carbendazim	1
Nectarine	Fludioxonil	1
Nectarine	Fludioxonil, Spinosad	1
Nectarine	Spinosad	2

Commodity	Residue	Number Collected
Onions (Green)	Ametoctradin, Azoxystrobin, Difenoconazole, Spinosad,	1
Peach	Azoxystrobin, Metrafenone, Spirotetramat, Tebuconazole,	1
Peach	Thiabendazole	1
Peppers (Chili Type)	Flonicamid	1
Plum	Fludioxonil	1
Pomelo (Citrus Grandis)	Difenoconazole, Pyraclostrobin	1
Potato (White, Irish, Red, Russet)	Chlorpropham, Imidacloprid	1
Potato (White, Irish, Red, Russet)	Chlorpropham	1
Spinach	Cyantraniliprole, Cyclaniliprole, Cypermethrin, Flupyradifurone, Mandipropamid, Methoxyfenozide, Piperonyl Butoxide, Oxathiapiprolin,	1
Spinach	Fenamidone, Permethrin, Spinosad	1
Spinach	Spinosad	2
Squash (Summer)	Thiabendazole	1
Strawberry	Cyprodinil	1
Strawberry	Spinosad	1

DPR Enforcement on Illegal Pesticide Residues

When an illegal pesticide residue(s) is detected on a sampled lot of produce, DPR quarantines and immediately removes the illegal produce from sale. The owner of the quarantined produce has three options: to securely dispose of the produce; to recondition the produce; or to dispose of the produce for byproduct purposes if the byproducts can lawfully contain the pesticide residue found. Reconditioning can include washing, peeling, or waiting for the pesticide residue(s) to break down within tolerance levels or eliminated if the illegal residue(s) have no established tolerance. After reconditioning, the owner must pay for the reanalysis. If test results show the pesticide residue is below the legal tolerance, DPR may allow the sale of the produce. If not, the produce cannot be sold and remains under quarantine.

If the owner of the commodity has additional lots of produce from the same source, DPR quarantines those lots until the laboratory verifies that it is free from illegal residues. DPR continues to trace the distribution of illegal produce by contacting distributors, retailers, and wholesalers throughout California, imposes quarantines to remove the produce from sale, and collects additional samples as necessary. As part of traceback investigations, DPR removed over 43 tons, or 87,170 pounds, of

contaminated produce from sale in California in 2024.

To prevent the sale of produce with illegal residues, DPR offers compliance guidance to businesses that repeatedly sell produce with illegal residue(s). Companies that are identified three or more times in 12 months as the first point of sale (an importer or grower) of produce containing illegal pesticides may be placed in the Repeat Residue Offender Program (RRO). Additionally, a company found to be selling produce with illegal residues that could pose a potential acute health risk to consumers may also be placed in the RRO program with a single violation.

The RRO program includes a compliance assistance meeting with the vendor. DPR reviews the illegal residue cases with company representatives and discusses steps the company can take to prevent the future sale of produce with illegal pesticide residues. The company is given three months to implement changes, after which, the company is placed on probation for 12 months. Any company that sells contaminated produce during this period is subject to enforcement actions. During the calendar year 2024, as part of the Repeat Residue Offender Program (RRO), DPR conducted compliance interviews with five vendors and levied fines of $84,000 against three other vendors in the program. DPR is proceeding with administrative actions against two additional vendors for non-compliance.

A list of companies' settlement actions and fines can be found on ***DPR's Produce with Illegal Pesticide Residue Fines and Settlements*** webpage.

All 2024 CPRMP produce sampling results, as well as previous years' data and reports, are available for download on ***DPR's Residue Monitoring Program*** website.

Appendix 1. Origin, commodity, total collected, number violative, and percent violative, CPRMP 2024 samples.

State or Country of Origin	Commodity	Total Collected	Number Violative	Percent Violative
Argentina	Lemon	1	0	--
Argentina	Pear	1	0	--
Argentina	Pomegranate	1	1	--
Arizona, U.S.	Broccoli	1	0	--
Arizona, U.S.	Carrots	1	0	--
Arizona, U.S.	Cauliflower	4	0	--
Arizona, U.S.	Corn, sweet	3	0	--
Arizona, U.S.	Lettuce, head	5	0	--
Arizona, U.S.	Lettuce, leaf	27	2	7%
Arizona, U.S.	Spinach	6	0	--
Arizona, U.S.	Tomato	1	0	--
Australia	Orange	5	0	--
Brazil	Mango	8	0	--
California, U.S.	Apple	3	0	--
California, U.S.	Apricot	7	0	--
California, U.S.	Avocado	14	0	0%
California, U.S.	Bitter melon (balsam pear, bitter gourd)	4	0	--
California, U.S.	Blackberry	27	0	0%
California, U.S.	Blueberry	3	0	--
California, U.S.	Bok choy (choy sum, pak choi)	11	1	--
California, U.S.	Broccoflower	1	0	--
California, U.S.	Broccoli	12	0	0%

State or Country of Origin	Commodity	Total Collected	Number Violative	Percent Violative
California, U.S.	Brussels sprouts	2	0	--
California, U.S.	Cabbage	9	0	--
California, U.S.	Cabbage, savoy	1	0	--
California, U.S.	Cantaloupe	3	0	--
California, U.S.	Carrots	39	0	0%
California, U.S.	Cauliflower	19	0	0%
California, U.S.	Celery	9	0	--
California, U.S.	Cherry	4	0	--
California, U.S.	Chinese cabbage (napa, wong bok)	3	1	--
California, U.S.	Chinese radish/daikon	6	0	--
California, U.S.	Cilantro (coriander leaves)	3	1	--
California, U.S.	Corn, sweet	32	0	0%
California, U.S.	Eggplant (Oriental, etc.)	23	0	0%
California, U.S.	Fennel (sweet or Florence)	1	0	--
California, U.S.	Fig	3	1	--
California, U.S.	Garlic	2	0	--
California, U.S.	Grapefruit	14	0	0%
California, U.S.	Grapes	41	1	2%
California, U.S.	Guava	1	0	--
California, U.S.	Honeydew melon	1	0	--
California, U.S.	Jicama (Mexican turnip, yam bean)	1	0	--
California, U.S.	Kale	25	4	16%
California, U.S.	Kiwi fruit fuzzy	18	0	0%
California, U.S.	Leek	1	0	--
California, U.S.	Lemon	20	0	0%

State or Country of Origin	Commodity	Total Collected	Number Violative	Percent Violative
California, U.S.	Lettuce, head	13	0	0%
California, U.S.	Lettuce, leaf	83	0	0%
California, U.S.	Lime (Mexican, Persian, etc.)	1	0	--
California, U.S.	Melons	2	0	--
California, U.S.	Mushrooms	4	0	--
California, U.S.	Mustard greens	2	0	--
California, U.S.	Nectarine	46	0	0%
California, U.S.	Okra (gumbo)	2	0	--
California, U.S.	Onion (dry)	8	0	--
California, U.S.	Orange	82	0	0%
California, U.S.	Parsley (leafy vegetable)	1	0	--
California, U.S.	Passion fruit (tamarillo, purple granadilla)	1	0	--
California, U.S.	Peach	73	1	1%
California, U.S.	Pear	3	0	--
California, U.S.	Pear, Asian (Oriental, ya li, nashi)	2	0	--
California, U.S.	Peppers (bell)	18	0	0%
California, U.S.	Peppers (chili type)	6	0	--
California, U.S.	Persimmon	24	0	0%
California, U.S.	Plum	9	0	--
California, U.S.	Plum, Japanese	1	0	--
California, U.S.	Pluot	2	0	--
California, U.S.	Pomegranate	6	1	--
California, U.S.	Pomelo (citrus grandis)	1	0	--
California, U.S.	Potato (white, Irish, red, russet)	14	0	0%
California, U.S.	Cactus pads	1	0	--

State or Country of Origin	Commodity	Total Collected	Number Violative	Percent Violative
California, U.S.	Quince	1	0	--
California, U.S.	Radish	1	0	--
California, U.S.	Raspberry	2	0	--
California, U.S.	Spinach	32	0	0%
California, U.S.	Squash (summer)	4	0	--
California, U.S.	Squash (winter)	6	0	--
California, U.S.	Strawberry	69	3	4%
California, U.S.	Sugarcane	1	0	--
California, U.S.	Sweet potato	11	0	0%
California, U.S.	Tangelo	1	0	--
California, U.S.	Tangerine (mandarin, satsuma, etc.)	10	0	--
California, U.S.	Tomatillo	1	0	--
California, U.S.	Tomato	5	0	--
California, U.S.	Turnip greens	5	2	--
California, U.S.	Yams, true (Lisbon & white yam)	2	0	--
California, U.S.	Beans (green, string, snap)	1	1	--
Canada	Carrots	8	0	--
Canada	Chinese cabbage (napa, wong bok)	1	0	--
Canada	Cucumber (pickling, Chinese, etc.)	11	0	0%
Canada	Mushrooms	14	0	0%
Canada	Peppers (bell)	5	0	--
Canada	Potato (white, Irish, red, russet)	1	0	--
Canada	Rhubarb	1	0	--
Canada	Tomato	1	0	--
Chile	Apricot	1	0	--

State or Country of Origin	Commodity	Total Collected	Number Violative	Percent Violative
Chile	Blueberry	4	0	--
Chile	Cherry	2	0	--
Chile	Grapes	31	1	3%
Chile	Kiwi fruit fuzzy	16	0	0%
Chile	Lemon	2	0	--
Chile	Nectarine	18	0	0%
Chile	Orange	7	0	--
Chile	Peach	16	0	0%
Chile	Persimmon	1	0	--
Chile	Plum	6	0	--
Chile	Tangerine (mandarin, satsuma, etc.)	5	0	--
China	Apple	5	1	--
China	Garlic	4	0	--
China	Ginger root	4	3	--
China	Lotus root	2	2	--
China	Pear	3	1	--
China	Pear, Asian (Oriental, ya li, nashi)	3	0	--
China	Pomelo (citrus grandis)	1	0	--
Colorado, U.S.	Cabbage	1	0	--
Costa Rica	Cantaloupe	1	0	--
Costa Rica	Chayote (Christophenes)	16	1	6%
Costa Rica	Pineapple	24	0	0%
Costa Rica	Taro (dasheen)	1	0	--
Costa Rica	Yucca (root crop)	3	0	--
Ecuador	Banana	9	0	--

State or Country of Origin	Commodity	Total Collected	Number Violative	Percent Violative
Ecuador	Dragonfruit, pitayah,	6	1	--
Ecuador	Mango	13	0	0%
Ecuador	Taro (dasheen)	1	1	--
Florida, U.S.	Corn, sweet	1	0	--
Florida, U.S.	Strawberry	1	0	--
Georgia, U.S.	Blueberry	1	0	--
Georgia, U.S.	Corn, sweet	1	0	--
Greece	Kiwi fruit fuzzy	10	1	--
Guatemala	Banana	2	0	--
Guatemala	Beans (green, string, snap)	1	0	--
Guatemala	Cantaloupe	3	0	--
Guatemala	Chayote (Christophenes)	2	0	--
Guatemala	Honeydew melon	1	0	--
Guatemala	Plantain	1	0	--
Hawaii, U.S.	Pineapple	1	0	--
Hawaii, U.S.	Sweet potato	2	0	--
Honduras	Cantaloupe	3	0	--
Honduras	Okra (gumbo)	3	0	--
Honduras	Pineapple	1	0	--
Idaho, U.S.	Potato (white, Irish, red, russet)	12	0	0%
Israel	Tangerine (mandarin, satsuma, etc.)	3	0	--
Italy	Kiwi fruit fuzzy	10	0	--
Japan	Pear	1	0	--
Korea	Chinese radish/daikon	1	1	--
Korea	Grapes	1	0	--

State or Country of Origin	Commodity	Total Collected	Number Violative	Percent Violative
Mexico	Asparagus	15	1	7%
Mexico	Avocado	32	0	0%
Mexico	Bean, broad (fava, horse bean)	1	0	--
Mexico	Beans (green, string, snap)	13	0	0%
Mexico	Beans, asparagus (yard long bean)	1	1	--
Mexico	Beets, (leafy vegetable)	2	0	--
Mexico	Beets, (root crop)	1	0	--
Mexico	Bitter melon (balsam pear, bitter gourd)	1	0	--
Mexico	Blackberry	50	4	8%
Mexico	Blueberry	9	3	--
Mexico	Bok choy (choy sum, pak choi)	5	2	--
Mexico	Broccoli	2	0	--
Mexico	Brussels sprouts	4	0	--
Mexico	Cabbage	4	0	--
Mexico	Cantaloupe	1	0	--
Mexico	Carrots	9	0	--
Mexico	Chayote (Christophenes)	53	5	9%
Mexico	Chinese cabbage (napa, wong bok)	1	0	--
Mexico	Chinese leafy greens	1	1	--
Mexico	Coconut	4	0	--
Mexico	Corn, sweet	33	1	3%
Mexico	Cucumber (pickling, Chinese, etc.)	59	5	8%
Mexico	Dill	1	1	--
Mexico	Dragonfruit, pitayah,	1	0	--
Mexico	Eggplant (Oriental, etc.)	48	2	4%

State or Country of Origin	Commodity	Total Collected	Number Violative	Percent Violative
Mexico	Gai choy	1	1	--
Mexico	Garbanzos (chickpeas)	2	1	--
Mexico	Grapes	15	1	7%
Mexico	Guava	2	1	--
Mexico	Honeydew melon	4	0	--
Mexico	Jicama (Mexican turnip, yam bean)	19	0	0%
Mexico	Kale	13	2	15%
Mexico	Leek	1	0	--
Mexico	Lemon	1	0	--
Mexico	Lime (Mexican, Persian, etc.)	28	0	0%
Mexico	Mango	89	4	4%
Mexico	Melons	1	0	--
Mexico	Onion (dry)	2	0	--
Mexico	Onions (green)	19	0	0%
Mexico	Orange	3	0	--
Mexico	Papaya	12	1	8%
Mexico	Pea (seed & pod vegetable)	1	0	--
Mexico	Peppers (bell)	33	1	3%
Mexico	Peppers (chili type)	26	4	15%
Mexico	Pineapple	1	1	--
Mexico	Cactus pear	7	4	--
Mexico	Cactus pads	11	7	64%
Mexico	Radish	6	0	--
Mexico	Radish tops	4	0	--
Mexico	Rambutan	1	0	--

State or Country of Origin	Commodity	Total Collected	Number Violative	Percent Violative
Mexico	Raspberry	14	0	0%
Mexico	Spinach	2	1	--
Mexico	Squash (summer)	50	1	2%
Mexico	Squash (winter)	5	0	--
Mexico	Strawberry	18	0	0%
Mexico	Tejocote	2	1	--
Mexico	Tomatillo	81	2	2%
Mexico	Tomato	62	0	0%
Mexico	Watermelons	5	0	--
Montana, U.S.	Cherry	1	0	--
Netherlands	Kiwi fruit fuzzy	1	0	--
Netherlands	Rhubarb	1	0	--
New Mexico, U.S.	Peppers (chili type)	1	0	--
New Zealand	Apple	2	0	--
New Zealand	Kiwi fruit fuzzy	11	0	0%
North Carolina, U.S.	Sweet potato	2	1	--
Oregon, U.S.	Blueberry	1	0	--
Oregon, U.S.	Cherry	2	0	--
Oregon, U.S.	Corn, sweet	2	0	--
Oregon, U.S.	Potato (white, Irish, red, russet)	2	0	--
Oregon, U.S.	Radish	2	0	--
Oregon, U.S.	Radish tops	1	0	--
Oregon, U.S.	Rhubarb	5	0	--
Peru	Avocado	2	0	--

State or Country of Origin	Commodity	Total Collected	Number Violative	Percent Violative
Peru	Blueberry	8	0	--
Peru	Ginger root	2	0	--
Peru	Grapes	12	0	0%
Peru	Mango	7	0	--
Peru	Tangerine (mandarin, satsuma, etc.)	9	3	--
Puerto Rico	Mango	2	0	--
South Africa	Grapefruit	1	0	--
Texas, U.S.	Cilantro (coriander leaves)	1	0	--
Texas, U.S.	Grapefruit	1	0	--
United States*	Apple	34	0	0%
United States*	Apricot	1	0	--
United States*	Artichoke (globe)	4	0	--
United States*	Avocado	4	0	--
United States*	Beans (green, string, snap)	4	0	--
United States*	Beans, asparagus (yard long bean)	1	0	--
United States*	Beets, (leafy vegetable)	1	0	--
United States*	Beets, (root crop)	4	0	--
United States*	Bitter melon (balsam pear, bitter gourd)	1	0	--
United States*	Blackberry	8	0	--
United States*	Blueberry	10	0	--
United States*	Bok choy (choy sum, pak choi)	5	0	--
United States*	Broccoli	13	0	0%
United States*	Brussels sprouts	5	0	--
United States*	Cabbage	16	0	0%
United States*	Cantaloupe	9	0	--

State or Country of Origin	Commodity	Total Collected	Number Violative	Percent Violative
United States*	Carrots	58	0	0%
United States*	Cauliflower	14	0	0%
United States*	Celery	2	0	--
United States*	Cherry	4	0	--
United States*	Chinese broccoli (gai lon)	2	0	--
United States*	Chinese cabbage (napa, wong bok)	2	0	--
United States*	Chinese radish/daikon	3	0	--
United States*	Cilantro (coriander leaves)	2	0	--
United States*	Collards	2	0	--
United States*	Corn, sweet	23	0	0%
United States*	Cucumber (pickling, Chinese, etc.)	4	0	--
United States*	Date	1	0	--
United States*	Eggplant (Oriental, etc.)	14	0	0%
United States*	Fennel (sweet or Florence)	3	0	--
United States*	Garlic	1	0	--
United States*	Grapefruit	5	0	--
United States*	Grapes	24	0	0%
United States*	Honeydew melon	1	0	--
United States*	Jicama (Mexican turnip, yam bean)	2	0	--
United States*	Kale	28	0	0%
United States*	Kiwi fruit fuzzy	14	0	0%
United States*	Kohlrabi	1	0	--
United States*	Leek	1	0	--
United States*	Lemon	9	0	--
United States*	Lemongrass	1	0	--

State or Country of Origin	Commodity	Total Collected	Number Violative	Percent Violative
United States*	Lettuce, head	13	0	0%
United States*	Lettuce, leaf	21	0	0%
United States*	Lime (Mexican, Persian, etc.)	1	0	--
United States*	Mamey (mammee apple)	1	0	--
United States*	Mango	1	0	--
United States*	Melons	1	0	--
United States*	Mushrooms	6	0	--
United States*	Muskmelon	1	0	--
United States*	Mustard greens	1	0	--
United States*	Nectarine	15	0	0%
United States*	Okra (gumbo)	4	0	--
United States*	Onion (dry)	30	0	0%
United States*	Onions (green)	2	0	--
United States*	Orange	22	0	0%
United States*	Parsley (leafy vegetable)	2	0	--
United States*	Peach	16	0	0%
United States*	Pear	3	0	--
United States*	Pear, Asian (Oriental, ya li, nashi)	3	0	--
United States*	Peppers (bell)	19	0	0%
United States*	Peppers (chili type)	6	0	--
United States*	Persimmon	7	0	--
United States*	Plum	7	0	--
United States*	Plum, Japanese	2	0	--
United States*	Pluot	1	0	--
United States*	Pomegranate	2	0	--

State or Country of Origin	Commodity	Total Collected	Number Violative	Percent Violative
United States*	Potato (white, Irish, red, russet)	26	0	0%
United States*	Quince	1	0	--
United States*	Radish	5	0	--
United States*	Radish tops	1	0	--
United States*	Raspberry	3	0	--
United States*	Rhubarb	2	0	--
United States*	Spinach	37	0	0%
United States*	Squash (summer)	11	0	0%
United States*	Squash (winter)	2	0	--
United States*	Strawberry	30	0	0%
United States*	Sweet potato	16	0	0%
United States*	Swiss chard (spinach beet)	1	0	--
United States*	Tangerine (mandarin, satsuma, etc.)	2	0	--
United States*	Tomatillo	3	0	--
United States*	Tomato	7	0	--
United States*	Turnip greens	10	0	--
United States*	Turnip roots	2	0	--
United States*	Watermelons	2	0	--
United States*	Yams, true (Lisbon & white yam)	2	0	--
Unknown	Artichoke (globe)	1	0	--
Unknown	Avocado	2	0	--
Unknown	Bok choy (choy sum, pak choi)	1	0	--
Unknown	Carrots	1	0	--
Unknown	Chayote (Christophenes)	2	0	--
Unknown	Cilantro (coriander leaves)	1	0	--

State or Country of Origin	Commodity	Total Collected	Number Violative	Percent Violative
Unknown	Corn, sweet	3	0	--
Unknown	Cucumber (pickling, Chinese, etc.)	1	0	--
Unknown	Eggplant (Oriental, etc.)	2	0	--
Unknown	Lemon	1	0	--
Unknown	Lettuce, head	1	0	--
Unknown	Lettuce, leaf	1	0	--
Unknown	Lime (Mexican, Persian, etc.)	1	0	--
Unknown	Onions (green)	1	0	--
Unknown	Orange	1	0	--
Unknown	Pea (seed & pod vegetable)	1	0	--
Unknown	Peppers (bell)	1	0	--
Unknown	Persimmon	1	0	--
Unknown	Pomelo (citrus grandis)	1	0	--
Unknown	Spinach	1	0	--
Unknown	Squash (summer)	1	0	--
Unknown	Tangerine (mandarin, satsuma, etc.)	2	0	--
Unknown	Tomatillo	3	0	--
Vietnam	Coconut	1	0	--
Vietnam	Pomelo (citrus grandis)	1	1	--
Washington, U.S.	Apple	21	0	0%
Washington, U.S.	Blueberry	2	0	--
Washington, U.S.	Cherry	1	0	--
Washington, U.S.	Chinese cabbage (napa, wong bok)	1	0	--
Washington, U.S.	Corn, sweet	1	0	--
Washington, U.S.	Eggplant (Oriental, etc.)	1	0	--

State or Country of Origin	Commodity	Total Collected	Number Violative	Percent Violative
Washington, U.S.	Onion (dry)	2	0	--
Washington, U.S.	Pear	2	0	--
Washington, U.S.	Pear, Asian (Oriental, ya li, nashi)	1	0	--
Washington, U.S.	Potato (white, Irish, red, russet)	7	0	--
Washington, U.S.	Rhubarb	3	0	--
Washington, U.S.	Tomatillo	1	0	--

*State of production undetermined for samples labeled as "Product of U.S."

**Violation rates not calculated for sample sizes <10