

Appendix 1-4. Usage Data for Clothianidin – SUUM

See attached memorandum, Clothianidin (044309) National and State Summary Use and Usage Matrix (March 10, 2021- revised June 3, 2021) from the Biological and Economic Analysis Division.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

March 10, 2021 (*revised June 3, 2021*)


MEMORANDUM

SUBJECT: Updated Clothianidin (044309) National and State Summary Use and Usage Matrix

FROM: Lindsey Hendrick, Biologist
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THRU: Hope Johnson, Chief
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TO: Mark Corbin, Branch Chief, and
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Introduction

This document presents a summary of the use and usage data that are available to the Agency on this active ingredient, during the years listed.

This document provides all available estimates of pesticide usage data for on the listed active ingredient(s), nationally and by state. All registered use sites as of date provided in tables are listed although usage data are not available for every site.

The intended use of the data presented here is to inform assumptions about the use of the active ingredient(s) in the United States, and the extent, variability, and rate of that usage at the state level. Pesticide usage data are reported at the state level; usage data at smaller levels may not be statistically valid due to reduced sample size. Extent and variability of usage at the state level are presented using minimum, maximum, and average percent crop treated (PCT) over the five-year observation period. PCT is calculated as the percent of the acres grown for a crop that are treated with the active ingredient(s). Additionally, the data may inform assumptions about crops and states where this active ingredient is likely not being used, by identifying crops that are surveyed for but where usage is not observed during the observation period. The state level estimates of pesticide usage presented here (especially PCT) can be used to inform estimates of the proportion of a species range that may be exposed to this active ingredient.

The pesticide usage data summarized herein were obtained from both public and private (proprietary) sources. As presented, the data are not proprietary, business confidential, or a trade secret. The most recent five years of available data as of publication were used in order to represent current usage and the most recent use trend.

Data Sources

Kynetec USA, Inc. The AgroTrak Study, Database Subset (Kynetec) – proprietary pesticide usage. These data are collected and sold by a private market research firm. The data are collected by annual surveys of agricultural users in the continental United States and provides pesticide usage data for about 60 crops, including both specialty and row crops. The survey design targets at least 80 percent of US acreage/production of the surveyed commodities. Survey methodology provides statistically valid results, typically at the state and national levels.

United States Department of Agriculture’s National Agricultural Statistics Service (NASS) – publicly available pesticide usage data. NASS data are based on surveys that focus on the top-producing states that together account for the majority of U.S. acres or production of the surveyed commodity. NASS survey design targets a minimum of 80 percent of the acreage/production for every fruit, vegetable, and field crop surveyed. Operation level data are combined during summary and, pending compliance with disclosure rules, published at the state and national levels. NASS does not collect data annually for each crop, but surveys for various commodities on a rotating schedule.

California Department of Pesticide Regulation (CDPR) Pesticide Use Reporting (PUR) –publicly available pesticide usage data. The PUR database contains detailed records and summaries of agricultural applications of pesticides on crops based on application permits. All agricultural growers must submit their production agricultural pesticide use reports monthly and pest control businesses must submit pesticide use reports within 7 days after their application. As such, CDPR data is a census of all usage rather than a survey and is published annually.

Kline and Company Data (Kline) - proprietary pesticide usage data. Data cover pesticide usage in several U.S. markets, including consumer, professional pest management, turf and ornamentals, food handling establishments, stored grain, industrial vegetation, as well as specialty biocides and biopesticides. Data are collected via surveys of pest management companies, suppliers, dealers, distributors, food-handling establishments, trade associations, consumers, and retailers. Market sizes and brand shares are determined by analyses of sales and other data obtained through interviews and are believed to be sufficiently accurate for screening-level needs at the national level. Market reports reflect usage by class/market segment and chemical and are based on sales information (manufacturer and retail) and end-user surveys. Study dates vary by market sector.

The presented usage data are averaged over the number of years of available survey data during the most recent five years of available data, based on sampling frequency (five years for Kynetec and CDPR, and 1-2 years for NASS and Kline), regardless of whether usage is observed in each surveyed year. The presented data may thus underestimate the maximum yearly usage. Kynetec is the primary source of usage data because it is collected nationally and annually. It also provides usage data for the most sites among the available data sources. NASS data are used for crops which are not surveyed by Kynetec. CDPR data are used when neither national source surveys a crop. When over 80% of crop grown in California, California usage is considered to be representative of National usage. In these cases, CDPR data may be included in Table 1. When less than 80% of a crop is grown in California, but none of the national sources survey the crop, CDPR is included in Table 2 to represent only California usage. The presented data may not be a reliable indicator of the variability in usage between individual years. In certain cases, data are unavailable or withheld. These cases are specified in the tables as follows:

Some data sources do not provide all data elements. When a data element is not available this is indicated with a “--” notation in the relevant column.

If a registered use site is surveyed by one of our data sources but no usage is observed, this is indicated with the notation "NR" indicating that the use site is “Surveyed but no usage reported”. Lack of reported usage data for the pesticide on a surveyed crop indicates that there is a very low likelihood that the given pesticide is used on that crop.

If a registered use site is not surveyed nationally by any of our data sources, this is indicated with the notation "***" indicating that the site is "Not Surveyed at National Level".

For some crops, CDPR has reported usage, but due to a reporting issue the data are not sufficiently reliable to provide an estimate. In these cases, Percent Crop Treated data are withheld. This is indicated with the notation "#".

In some cases, data is withheld by NASS to avoid disclosing data for individual operations. This is indicated with the notation "(D)".

Averaging

The presented usage data are averaged over the number of years of available survey data based on sampling frequency (five years for Kynetec and CADPR, and 1-2 years for NASS), regardless of whether usage is observed in each surveyed year.

Rounding

Average pounds of active ingredient applied – Annual average pounds of the pesticide reported applied for each agricultural crop (i.e., for surveyed states, not for the entire United States). Values are calculated by merging pesticide usage data across all observations within a year, averaging across year, and then rounding. Any surveyed year without reported usage for the AI is included as a value of zero pounds applied in the calculation of the average. Values are rounded using common rounding rules (i.e., the half round up method). **Note:** *If the estimated value is less than 500, then that value is labeled <500. Estimated values between 500 & <1,000,000 are rounded to 1 place value. Estimated values of 1,000,000 or greater are rounded to the hundred thousands' place value. (Examples: 478 would be reported as "<500"; 43,873 would be reported as "40,000"; 47,873,901 would be reported as "47,900,000").*

Average annual total acres treated – Annual average total acres treated with the pesticide reported for each agricultural crop (i.e., for surveyed states, not for the entire United States). Values are calculated by merging pesticide usage data across all observations within a year, averaging across year, and then rounding. Any surveyed year without reported usage for the AI is included as a value of zero acres treated in the calculation of the average. Values are rounded using common rounding rules (i.e., the half round up method). **Note:** *If the estimated value is less than 500, then that value is labeled <500. Estimated values between 500 & <1,000,000 are rounded to 1 place value. Estimated values of 1,000,000 or greater are rounded to the hundred thousands' place value. (Examples: 478 would be reported as "<500"; 43,873 would be reported as "40,000"; 47,873,901 would be reported as "47,900,000").*

Average percent of crop treated - Values are calculated by averaging within a year, averaging across year, and then rounding to the nearest multiple of 5. **Note:** If the estimated value is less than 1, then the value is labeled <1. If the estimated value is less than 2.5, then the value is labeled <2.5.

Maximum percent of crop treated - Value is the single maximum annual average value reported across all observations, across all years. The value is rounded up to the nearest multiple of 5. **Note:** *If the estimated value is less than 2.5, then the value is labeled <2.5.*

Notes on 5-24-2021 Corrections

This document was edited to correct some minor errors, as noted below. No further analyses have been performed and no new data are included. This revised document supersedes the version dated 03-10-21.

Artichokes (excluding Jerusalem) corrections (Table 1)

Moved "Artichokes (excluding Jerusalem)" from "Root and Tuber Vegetables" to Miscellaneous

Moved "Artichokes, Globe (Seed Treatment)" from "Root and Tuber Vegetables (Seed Treatment)" to Miscellaneous

Renamed "Artichokes (excluding Jerusalem)" to "Artichokes, Globe"

Artichokes (excluding Jerusalem) corrections (Table 2)

Moved "Artichokes (excluding Jerusalem)" for California from "Root and Tuber Vegetables" to Miscellaneous

Moved "Artichokes (excluding Jerusalem)" for Other States from "Root and Tuber Vegetables" to Miscellaneous

Moved "Artichokes, Globe (Seed Treatment)" from "Root and Tuber Vegetables (Seed Treatment)" to Miscellaneous

Renamed "Artichokes (excluding Jerusalem)" to "Artichokes, Globe"

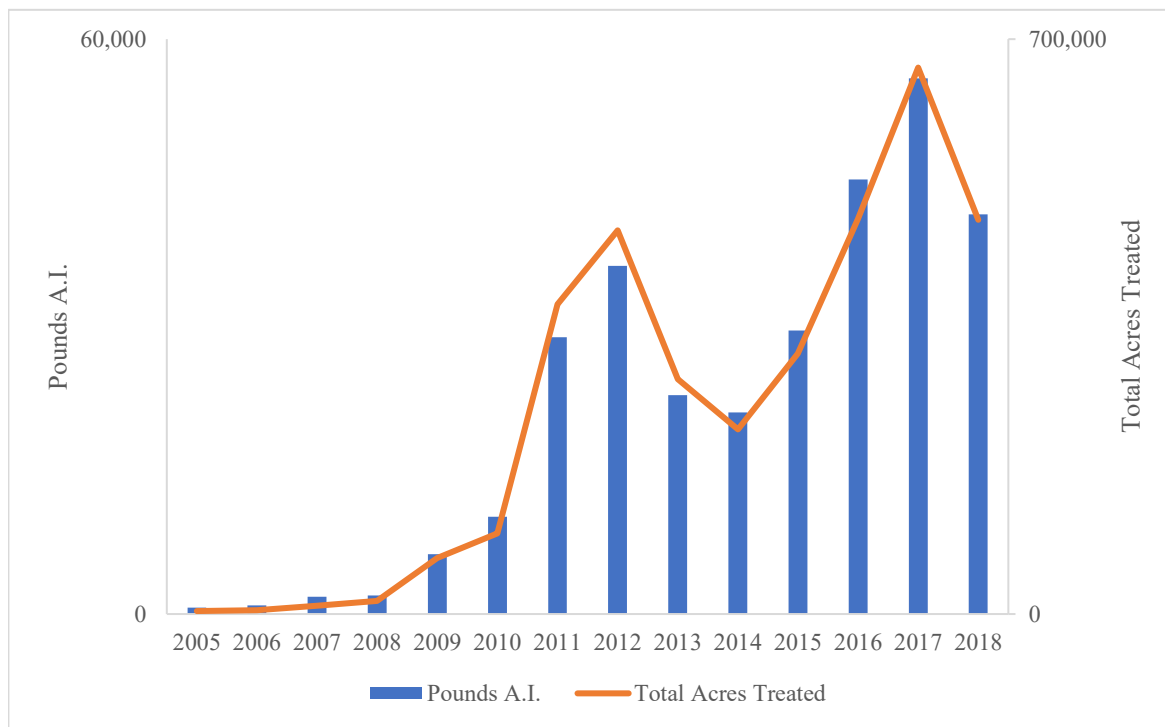


Figure 1: Clothianidin Total Acres Treated and Total Pounds A.I. Applied to Agricultural Crops (2005*-2018).

(Does not include seed treatment usage, or crops surveyed only by NASS and CDRP, as indicated in Table 1)

Source: Kynetec USA, Inc. 2019. "The AgroTrak® Study from Kynetec USA, Inc." Database Subset: 2005-2018

* Note clothianidin was first registered in 2003 but no usage was reported until 2005

Table 1. National Clothianidin Agricultural Usage by Crop. Data averaged over reported years. Values are rounded according to rounding rules provided in the Introduction.

Crop	Data Source	States with Reported Usage	Avg. Annual Pounds AI Applied ^a	Avg. Annual Total Acres Treated ^b	% Acres Treated by Air	Avg. Single AI Rate (lb AI/A)	Max Labeled Single AI Rate ^c
Root and Tuber Vegetables	+	+	+	+	+	+	<i>Full Crop Group Not Registered</i>
Tuberous and Corm Vegetables	+	+	+	+	+	+	0.2 lb AI/A
Arracacia (Persian Carrot)	**	**	**	**	**	**	0.2 lb AI/A
Arrowroot	**	**	**	**	**	**	0.2 lb AI/A
Artichoke, Chinese	**	**	**	**	**	**	0.2 lb AI/A
Artichoke, Jerusalem	**	**	**	**	**	**	0.2 lb AI/A
Canna (Edible)	**	**	**	**	**	**	0.2 lb AI/A
Chayote (Root)	**	**	**	**	**	**	0.2 lb AI/A
Chufa (Ground Almond)	**	**	**	**	**	**	0.2 lb AI/A
Ginger	**	**	**	**	**	**	0.2 lb AI/A
Leren	**	**	**	**	**	**	0.2 lb AI/A
Manioc (Cassava)	**	**	**	**	**	**	0.2 lb AI/A
Potatoes	Kynetec (2014-2018)	ID, ME, MI, MN, NC, ND, PA, WA, WI	5,000	40,000	10%	0.12	0.2 lb AI/A
Sweet Potato	**	**	**	**	**	**	0.2 lb AI/A
Tanier	**	**	**	**	**	**	0.2 lb AI/A
Taro	**	**	**	**	**	**	0.2 lb AI/A
Turmeric	**	**	**	**	**	**	0.2 lb AI/A
Yam	**	**	**	**	**	**	0.2 lb AI/A
Yautia	**	**	**	**	**	**	0.2 lb AI/A
Root and Tuber Vegetables (Seed Treatment)	+	+	+	+	+	+	<i>Full Crop Group Not Registered</i>
Carrot (Including Top) (Seed Treatment)	**	**	**	**	**	**	1.50E-07 lb / seed
Chervil (Seed Treatment)	**	**	**	**	**	**	1.80E-02 lb / lb seed
Sugar Beet (Seed Treatment)	**	**	**	**	**	**	1.37E-06 lb / seed

Crop	Data Source	States with Reported Usage	Avg. Annual Pounds AI Applied ^a	Avg. Annual Total Acres Treated ^b	% Acres Treated by Air	Avg. Single AI Rate (lb AI/A)	Max Labeled Single AI Rate ^c
Tuberous and Corm Vegetables (Seed Treatment)	+	+	+	+	+	+	1.00E-04 lb / lb seed
Arracacia (Persian Carrot) (Seed Treatment)	**	**	**	**	**	**	1.00E-04 lb / lb seed
Arrowroot (Seed Treatment)	**	**	**	**	**	**	1.00E-04 lb / lb seed
Artichoke, Chinese (Seed Treatment)	**	**	**	**	**	**	1.00E-04 lb / lb seed
Artichoke, Jerusalem (Seed Treatment)	**	**	**	**	**	**	1.00E-04 lb / lb seed
Canna (Edible)	**	**	**	**	**	**	1.00E-04 lb / lb seed
Chayote (Root) (Seed Treatment)	**	**	**	**	**	**	1.00E-04 lb / lb seed
Chufa (Ground Almond) (Seed Treatment)	**	**	**	**	**	**	1.00E-04 lb / lb seed
Ginger (Seed Treatment)	**	**	**	**	**	**	1.00E-04 lb / lb seed
Leren (Seed Treatment)	**	**	**	**	**	**	1.00E-04 lb / lb seed
Manioc (Cassava) (Seed Treatment)	**	**	**	**	**	**	1.00E-04 lb / lb seed
Potatoes (Seed Treatment)	**	**	**	**	**	**	1.00E-04 lb / lb seed
Sweet Potato (Seed Treatment)	**	**	**	**	**	**	1.00E-04 lb / lb seed
Tanier (Seed Treatment)	**	**	**	**	**	**	1.00E-04 lb / lb seed
Taro (Seed Treatment)	**	**	**	**	**	**	1.00E-04 lb / lb seed
Turmeric (Seed Treatment)	**	**	**	**	**	**	1.00E-04 lb / lb seed
Yam (Seed Treatment)	**	**	**	**	**	**	1.00E-04 lb / lb seed
Yautia (Seed Treatment)	**	**	**	**	**	**	1.00E-04 lb / lb seed

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	States with Reported Usage	Avg. Annual Pounds AI Applied ^a	Avg. Annual Total Acres Treated ^b	% Acres Treated by Air	Avg. Single AI Rate (lb AI/A)	Max Labeled Single AI Rate ^c
Bulb Vegetables (Seed Treatment)	+	+	+	+	+	+	<i>Full Crop Group Not Registered</i>
Leek (Seed Treatment)	**	**	**	**	**	**	4.60E-07 lb / seed
Onion (Seed Treatment)	**	**	**	**	**	**	4.00E-07 lb / seed
Onion, Scallion (Seed Treatment)	**	**	**	**	**	**	2.50E-07 lb / seed
Leafy Vegetables	+	+	+	+	+	+	<i>0.2 lb AI/A</i>
Amaranth, Chinese	**	**	**	**	**	**	0.2 lb AI/A
Celery	Kynetec (2014-2018)	CA	(S)	(S)	(S)	(S)	0.2 lb AI/A
Cress, Garden	**	**	**	**	**	**	0.2 lb AI/A
Cress, Upland	**	**	**	**	**	**	0.2 lb AI/A
Dandelion	**	**	**	**	**	**	0.2 lb AI/A
Dock (Sorrel)	**	**	**	**	**	**	0.2 lb AI/A
Endive (Escarole)	**	**	**	**	**	**	0.2 lb AI/A
Lettuce	Kynetec (2014-2018)	CA	2,000	10,000	0%	0.14	0.2 lb AI/A
Orach (Mountain Spinach)	**	**	**	**	**	**	0.2 lb AI/A
Parsley	**	**	**	**	**	**	0.2 lb AI/A
Purslane, Garden	**	**	**	**	**	**	0.2 lb AI/A
Purslane, Winter	**	**	**	**	**	**	0.2 lb AI/A
Radicchio	**	**	**	**	**	**	0.2 lb AI/A
Roquette (Arugula)	**	**	**	**	**	**	0.2 lb AI/A
Spinach	Kynetec (2014-2018)	CA	<500	2,000	0%	0.10	0.2 lb AI/A
Spinach, New Zealand	**	**	**	**	**	**	0.2 lb AI/A
Other Leafy Vegetables	**	**	**	**	**	**	0.2 lb AI/A
Leafy Vegetables (Seed Treatment)	+	+	+	+	+	+	<i>Full crop group not registered</i>
Amaranth, Chinese (Seed Treatment)	**	**	**	**	**	**	4.43E-02 lb / lb seed
Chrysanthemum, Garland (Seed Treatment)	**	**	**	**	**	**	4.43E-02 lb / lb seed
Corn, Salad (Seed Treatment)	**	**	**	**	**	**	1.91E-01 lb / lb seed

Crop	Data Source	States with Reported Usage	Avg. Annual Pounds AI Applied ^a	Avg. Annual Total Acres Treated ^b	% Acres Treated by Air	Avg. Single AI Rate (lb AI/A)	Max Labeled Single AI Rate ^c
Cress, Garden (Seed Treatment)	**	**	**	**	**	**	2.13E-02 lb / lb seed
Cress, Upland (Seed Treatment)	**	**	**	**	**	**	2.13E-02 lb / lb seed
Dandelion (Seed Treatment)	**	**	**	**	**	**	4.00E-03 lb / lb seed
Dock (Sorrel) (Seed Treatment)	**	**	**	**	**	**	3.60E-02 lb / lb seed
Endive (Escarole) (Seed Treatment)	**	**	**	**	**	**	4.72E-02 lb / lb seed
Lettuce (Seed Treatment)	**	**	**	**	**	**	7.81E-01 lb / lb seed
Orach (Mountain Spinach) (Seed Treatment)	**	**	**	**	**	**	1.48E-02 lb / lb seed
Parsley (Seed Treatment)	**	**	**	**	**	**	3.25E-02 lb / lb seed
Purslane, Garden (Seed Treatment)	**	**	**	**	**	**	1.21E-01 lb / lb seed
Purslane, Winter (Seed Treatment)	**	**	**	**	**	**	1.21E-01 lb / lb seed
Radicchio (Seed Treatment)	**	**	**	**	**	**	2.66E-02 lb / lb seed
Roquette (Arugula) (Seed Treatment)	**	**	**	**	**	**	2.88E-02 lb / lb seed
Spinach (Seed Treatment)	**	**	**	**	**	**	1.51E-02 lb / lb seed
Spinach, New Zealand (Seed Treatment)	**	**	**	**	**	**	1.51E-02 lb / lb seed
Brassica Head and Stem Vegetables	+	+	+	+	+	+	<i>Full Crop Group Not Registered</i>
Brassica (Cole) Vegetables	+	+	+	+	+	+	0.2 lb AI/A
Broccoli	Kynetec (2014-2018)	CA	4,000	30,000	<1%	0.15	0.2 lb AI/A
Brussels sprouts	CDPR (2013-2017)	CA*	<500	#	#	#	0.2 lb AI/A
Cabbage	Kynetec (2014-2018)	CA, WI	500	3,000	0%	0.19	0.2 lb AI/A
Cauliflower	Kynetec (2014-2018)	AZ, CA	<500	2,000	0%	0.15	0.2 lb AI/A

Crop	Data Source	States with Reported Usage	Avg. Annual Pounds AI Applied ^a	Avg. Annual Total Acres Treated ^b	% Acres Treated by Air	Avg. Single AI Rate (lb AI/A)	Max Labeled Single AI Rate ^c
Other Brassica (Cole) Vegetables	**	**	**	**	**	**	0.2 lb AI/A
Brassica Head and Stem Vegetables (Seed Treatment)	+	+	+	+	+	+	<i>Full Crop Group Not Registered</i>
Brassica (Cole) Vegetables (Seed Treatment)	+	+	+	+	+	+	<i>Full crop group not registered</i>
Broccoli (Seed Treatment)	**	**	**	**	**	**	2.65E-06 lb / seed
Legume Vegetables	+	+	+	+	+	+	<i>Full Crop Group Not Registered</i>
Soybeans	Kynetec (2014-2018)	AL, AR, LA	5,000	100,000	100%	0.05	0.1 lb AI/A
Legume Vegetables (Seed Treatment)	+	+	+	+	+	+	<i>Full Crop Group Not Registered</i>
Soybeans (Seed Treatment)	**	**	**	**	**	**	5.02E-04 lb / lb seed
Fruiting Vegetables	+	+	+	+	+	+	<i>0.2 lb AI/A</i>
Eggplant	**	**	**	**	**	**	0.2 lb AI/A
Peppers	Kynetec (2014-2018)	CA	<500	700	0%	0.08	0.2 lb AI/A
Tomatoes	Kynetec (2014-2018)	CA	900	10,000	0%	0.06	0.2 lb AI/A
Other Fruiting Vegetables	**	**	**	**	**	**	0.2 lb AI/A
Cucurbit Vegetables	+	+	+	+	+	+	<i>0.2 lb AI/A</i>
Cantaloupes	Kynetec (2014-2018)	CA	(S)	(S)	(S)	(S)	0.2 lb AI/A
Cucumbers	Kynetec (2014-2018)	CA, NC, WI	<500	1,000	0%	0.04	0.2 lb AI/A
Honeydew Melon	NASS (2016)	CA	(D)	--	--	(D)	0.2 lb AI/A
Pumpkins	Kynetec (2014-2018)	CA, IL, MA, NJ, OH, PA, VA, WI	<500	1,000	0%	0.08	0.2 lb AI/A

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	States with Reported Usage	Avg. Annual Pounds AI Applied ^a	Avg. Annual Total Acres Treated ^b	% Acres Treated by Air	Avg. Single AI Rate (lb AI/A)	Max Labeled Single AI Rate ^c
Squash	Kynetec (2014-2018)	GA, MA, NJ, SC, WI	<500	1,000	0%	0.08	0.2 lb AI/A
Watermelons	Kynetec (2014-2018)	CA, NC	<500	700	0%	0.14	0.2 lb AI/A
Other Cucurbit Vegetables	**	**	**	**	**	**	0.2 lb AI/A
Pome Fruit	+	+	+	+	+	+	0.2 lb AI/A
Apples	Kynetec (2014-2018)	MI, PA, VA, WV	2,000	20,000	<1%	0.10	0.2 lb AI/A
Pears	Kynetec (2014-2018)	OR, WA	<500	900	0%	0.20	0.2 lb AI/A
Other Pome Fruit	**	**	**	**	**	**	0.2 lb AI/A
Stone Fruit	+	+	+	+	+	+	<i>Full Crop Group Not Registered</i>
Peaches	Kynetec (2014-2018)	CA, GA, PA, SC	700	7,000	0%	0.10	0.1 lb AI/A
Berry and Small Fruit	+	+	+	+	+	+	<i>Full Crop Group Not Registered</i>
Grapes (except Wine)	CDPR (2012)	CA*	2,000	20,000	<1%	0.10	0.2 lb AI/A
Grapes, Wine	CDPR (2013-2017)	CA*	2,000	20,000	<1%	0.10	0.2 lb AI/A
Low Growing Berries (except Strawberry)	+	+	+	+	+	+	0.2 lb AI/A
Blueberry	NASS (2015)	NR	NR	NR	NR	NR	0.2 lb AI/A
Cranberry	**	**	**	**	**	**	0.2 lb AI/A
Other Low Growing Berries	**	**	**	**	**	**	0.2 lb AI/A

Crop	Data Source	States with Reported Usage	Avg. Annual Pounds AI Applied ^a	Avg. Annual Total Acres Treated ^b	% Acres Treated by Air	Avg. Single AI Rate (lb AI/A)	Max Labeled Single AI Rate ^c
Tree Nuts	+	+	+	+	+	+	0.1 lb AI/A
Almonds	Kynetec (2014-2018)	CA	1,000	10,000	0%	0.10	0.1 lb AI/A
Filberts (Hazelnuts)	Kynetec (2014-2018)	NR	NR	NR	NR	NR	0.1 lb AI/A
Pecans	Kynetec (2014-2018)	GA	2,000	30,000	0%	0.10	0.1 lb AI/A
Pistachios	Kynetec (2014-2018)	NR	NR	NR	NR	NR	0.1 lb AI/A
Walnuts	Kynetec (2014-2018)	CA	900	9,000	0%	0.10	0.1 lb AI/A
Other Tree Nuts	**	**	**	**	**	**	0.1 lb AI/A
Cereal Grains	+	+	+	+	+	+	<i>Full Crop Group Not Registered</i>
Rice	Kynetec (2014-2018)	MS	(S)	(S)	(S)	(S)	0.075 lb AI/A
Cereal Grains (Seed Treatment)	+	+	+	+	+	+	<i>Full Crop Group Not Registered</i>
Barley (Seed Treatment)	**	**	**	**	**	**	7.07E-04 lb / lb seed
Buckwheat (Seed Treatment)	**	**	**	**	**	**	7.07E-04 lb / lb seed
Corn (Seed Treatment)	**	**	**	**	**	**	7.03E-04 lb / lb seed
Corn, Field (Seed Treatment)	**	**	**	**	**	**	7.03E-04 lb / lb seed
Corn, Pop (Seed Treatment)	**	**	**	**	**	**	7.03E-04 lb / lb seed
Millet (Seed Treatment)	**	**	**	**	**	**	7.07E-04 lb / lb seed
Oats (Seed Treatment)	**	**	**	**	**	**	7.07E-04 lb / lb seed
Rice (Seed Treatment)	**	**	**	**	**	**	7.54E-04 lb / lb seed

Crop	Data Source	States with Reported Usage	Avg. Annual Pounds AI Applied ^a	Avg. Annual Total Acres Treated ^b	% Acres Treated by Air	Avg. Single AI Rate (lb AI/A)	Max Labeled Single AI Rate ^c
Rye (Seed Treatment)	**	**	**	**	**	**	7.07E-04 lb / lb seed
Sorghum (Seed Treatment)	**	**	**	**	**	**	2.53E-03 lb / lb seed
Sweet Corn (Seed Treatment)	**	**	**	**	**	**	1.13E-06 lb / seed
Sweet Corn (Seed Treatment) (ID only)	**	**	**	**	**	**	2.79E-06 lb /seed
Teosinte (Seed Treatment)	**	**	**	**	**	**	7.07E-04 lb / lb seed
Triticale (Seed Treatment)	**	**	**	**	**	**	7.07E-04 lb / lb seed
Wheat (Seed Treatment)	**	**	**	**	**	**	7.07E-04 lb / lb seed
Oilseed	+	+	+	+	+	+	<i>Full Crop Group Not Registered</i>
Cotton (Unspecified)	Kynetec (2014-2018)	CA, NC, TN, TX	8,000	90,000	20%	0.085	0.083 lb AI/A
Oilseed (Seed Treatment)	+	+	+	+	+	+	<i>Full Crop Group Not Registered</i>
Canola/ Rapeseed (Seed Treatment)	**	**	**	**	**	**	4.06E-03 lb / lb seed
Mustard (Seed Treatment)	**	**	**	**	**	**	4.06E-03 lb / lb seed
Cotton (Seed Treatment)	**	**	**	**	**	**	7.81E-07 lb / seed
Tropical/Subtropical Fruit	+	+	+	+	+	+	<i>Full Crop Group Not Registered</i>
Figs	CDPR (2013-2017)	CA*	<500	<500	0%	0.04	0.1 lb AI/A
Pomegranate	CDPR (2013-2017)	CA*	<500	#	#	#	0.1 lb AI/A

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	States with Reported Usage	Avg. Annual Pounds AI Applied ^a	Avg. Annual Total Acres Treated ^b	% Acres Treated by Air	Avg. Single AI Rate (lb AI/A)	Max Labeled Single AI Rate ^c
Miscellaneous	+	+	+	+	+	+	Full Crop Group Not Registered
Artichoke, Globe	CDPR (2013-2017)	CA*	<500	#	#	#	0.2 lb AI/A
Artichoke, Globe (Seed Treatment)	**	**	**	**	**	**	1.00E-04 lb / lb seed
Guayule (Rubber) (AZ only)	**	**	**	**	**	**	8.80E-07 lb / seed
Tobacco	Kynetec (2014-2018)	NR	NR	NR	NR	NR	0.1 lb AI/A

Notes	
Kynetec (YEAR-YEAR)	Agricultural usage surveyed by market research firm(s).
NASS (YEAR-YEAR)	Surveyed by United States Department of Agriculture's National Agricultural Statistics Service.
CDPR (YEAR-YEAR)	Surveyed by the California Department of Pesticide Regulation. Used when 80% or more of crop grown in California.
*	California crop. Over than 80% of crop grown in California. California usage is considered to be representative of National usage.
a	The pounds AI displayed in this document may differ from those displayed in the SLUA and other BEAD documents, because different calculation methods were used.
b	Total Acres Treated accounts for multiple applications to a single area. This may overestimate the number of acres treated as some acres are treated more than once.
c	Max labeled rate from most recent EPA accepted label as of August 2020.
+	See crops below.
NR	Surveyed by the indicated source in the years listed, but no usage reported.
(D)	Data withheld by NASS to avoid disclosing data for individual operations.
(S)	Insufficient number of reports to establish an estimate.
#	Withheld by EPA due to likely overcounting caused by reporting issue.
--	Data not available.
**	Site not surveyed at the national level.

Table 2. Clothianidin Agricultural Usage by Crop and State. Data averaged over reported years. Values are rounded according to rounding rules provided in the Introduction.

Crop	Data Source	State	Avg. Annual Crop Acres Grown†	Avg Annual Total Lbs. AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Root and Tuber Vegetables	+	+	+	+	+	+	+
Tuberous and Corm Vegetables	+	+	+	+	+	+	+
Arracacia (Persian Carrot)	**	**	**	**	**	**	**
Arrowroot	**	**	**	**	**	**	**
Artichoke, Chinese	**	**	**	**	**	**	**
Artichoke, Jerusalem	**	**	**	**	**	**	**
Canna (Edible)	**	**	**	**	**	**	**
Chayote (Root)	**	**	**	**	**	**	**
Chufa (Ground Almond)	**	**	**	**	**	**	**
Ginger	**	**	**	**	**	**	**
Leren	**	**	**	**	**	**	**
Manioc (Cassava)	**	**	**	**	**	**	**
Potatoes	Kynetec (2014-2018)	CA	40,000	NR	NR	NR	NR
Potatoes	Kynetec (2014-2018)	CO	60,000	NR	NR	NR	NR
Potatoes	Kynetec (2014-2018)	FL	30,000	NR	NR	NR	NR
Potatoes	Kynetec (2014-2018)	ID	300,000	(S)	0%	5%	<1%
Potatoes	Kynetec (2014-2018)	ME	50,000	(S)	<1%	10%	5%
Potatoes	Kynetec (2014-2018)	MI	50,000	(S)	0%	10%	5%
Potatoes	Kynetec (2014-2018)	MN	40,000	(S)	0%	35%	20%
Potatoes	Kynetec (2014-2018)	MT	10,000	NR	NR	NR	NR
Potatoes	Kynetec (2014-2018)	NE	10,000	NR	NR	NR	NR
Potatoes	Kynetec (2014-2018)	NY	10,000	NR	NR	NR	NR
Potatoes	Kynetec (2014-2018)	NC	10,000	(S)	0%	20%	10%
Potatoes	Kynetec (2014-2018)	ND	80,000	(S)	<2.5%	25%	10%
Potatoes	Kynetec (2014-2018)	OR	40,000	NR	NR	NR	NR

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	State	Avg. Annual Crop Acres Grown†	Avg Annual Total Lbs. AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Potatoes	Kynetec (2014-2018)	PA	3,000	(S)	0%	10%	<2.5%
Potatoes	Kynetec (2014-2018)	TX	10,000	NR	NR	NR	NR
Potatoes	Kynetec (2014-2018)	WA	200,000	(S)	<2.5%	20%	10%
Potatoes	Kynetec (2014-2018)	WI	70,000	(S)	10%	15%	10%
Sweet Potato	CDPR (2013-2017)	CA (13%)	20,000	<500	#	#	#
Sweet Potato	--	Other States (87%)	**	**	**	**	**
Tanier	**	**	**	**	**	**	**
Taro	**	**	**	**	**	**	**
Turmeric	**	**	**	**	**	**	**
Yam	**	**	**	**	**	**	**
Yautia	**	**	**	**	**	**	**
Root and Tuber Vegetables (Seed Treatment)	+	+	+	+	+	+	+
Carrot (Including Top) (Seed Treatment)	**	**	**	**	**	**	**
Chervil (Seed Treatment)	**	**	**	**	**	**	**
Sugar Beet (Seed Treatment)	**	**	**	**	**	**	**
Tuberous and Corm Vegetables (Seed Treatment)	+	+	+	+	+	+	+
Arracacia (Persian Carrot) (Seed Treatment)	**	**	**	**	**	**	**
Arrowroot (Seed Treatment)	**	**	**	**	**	**	**
Artichoke, Chinese (Seed Treatment)	**	**	**	**	**	**	**
Artichoke, Jerusalem (Seed Treatment)	**	**	**	**	**	**	**
Canna (Edible) (Seed Treatment)	**	**	**	**	**	**	**
Chayote (Root) (Seed Treatment)	**	**	**	**	**	**	**
Chufa (Ground Almond) (Seed Treatment)	**	**	**	**	**	**	**
Ginger (Seed Treatment)	**	**	**	**	**	**	**
Leren (Seed Treatment)	**	**	**	**	**	**	**

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	State	Avg. Annual Crop Acres Grown†	Avg Annual Total Lbs. AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Manioc (Cassava) (Seed Treatment)	**	**	**	**	**	**	**
Potatoes (Seed Treatment)	**	**	**	**	**	**	**
Sweet Potato (Seed Treatment)	**	**	**	**	**	**	**
Tanier (Seed Treatment)	**	**	**	**	**	**	**
Taro (Seed Treatment)	**	**	**	**	**	**	**
Turmeric (Seed Treatment)	**	**	**	**	**	**	**
Yam (Seed Treatment)	**	**	**	**	**	**	**
Yautia (Seed Treatment)	**	**	**	**	**	**	**
Bulb Vegetables	+	+	+	+	+	+	+
Broccoli	**	**	**	**	**	**	**
Leafy Vegetables	+	+	+	+	+	+	+
Amaranth, Chinese	**	**	**	**	**	**	**
Bok Choy	CDPR (2013-2017)	CA (--%)	--	<500	#	#	#
Bok Choy	--	Other States (-%)	**	**	**	**	**
Celery	Kynetec (2014-2018)	CA	30,000	(S)	0%	<2.5%	<1%
Celery	Kynetec (2014-2018)	MI	700	NR	NR	NR	NR
Collard Greens	CDPR (2013-2017)	CA (5%)	600	<500	#	#	#
Collard Greens	--	Other States (95%)	**	**	**	**	**
Cress, Garden	**	**	**	**	**	**	**
Cress, Upland	**	**	**	**	**	**	**
Dandelion Greens	CDPR (2013-2017)	CA (--%)	--	(S)	#	#	#
Dandelion Greens	--	Other States (-%)	**	**	**	**	**
Dock (Sorrel)	**	**	**	**	**	**	**

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	State	Avg. Annual Crop Acres Grown†	Avg Annual Total Lbs. AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Endive	CDPR (2013-2017)	CA (65%)	2,000	<500	#	#	#
Endive	--	Other States (35%)	**	**	**	**	**
Fennel	CDPR (2013-2017)	CA (--%)	--	<500	#	#	#
Fennel	--	Other States (-%)	**	**	**	**	**
Kale	CDPR (2013-2017)	CA (46%)	7,000	<500	#	#	#
Kale	--	Other States (54%)	**	**	**	**	**
Lettuce	Kynetec (2014-2018)	AZ	70,000	NR	NR	NR	NR
Lettuce	Kynetec (2014-2018)	CA	200,000	(S)	0%	10%	10%
Mizuna	CDPR (2013-2017)	CA (--%)	--	(S)	#	#	#
Mizuna	--	Other States (-%)	**	**	**	**	**
Orach (Mountain Spinach)	**	**	**	**	**	**	**
Parsley	CDPR (2013-2017)	CA (66%)	3,000	<500	#	#	#
Parsley	--	Other States (34%)	**	**	**	**	**
Purslane, Garden	**	**	**	**	**	**	**
Purslane, Winter	**	**	**	**	**	**	**
Radicchio	CDPR (2013-2017)	CA (--%)	--	(S)	#	#	#
Radicchio	--	Other States (-%)	**	**	**	**	**
Roquette (Arugula)	**	**	**	**	**	**	**
Spinach	Kynetec (2014-2018)	AZ	10,000	NR	NR	NR	NR
Spinach	Kynetec (2014-2018)	CA	30,000	(S)	0%	20%	10%
Spinach	Kynetec (2014-2018)	CO	<500	NR	NR	NR	NR
Spinach	Kynetec (2014-2018)	NJ	1,000	NR	NR	NR	NR
Spinach	Kynetec (2014-2018)	OK	800	NR	NR	NR	NR
Spinach	Kynetec (2014-2018)	TX	<500	NR	NR	NR	NR

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	State	Avg. Annual Crop Acres Grown†	Avg Annual Total Lbs. AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Spinach, New Zealand	**	**	**	**	**	**	**
Swiss Chard	CDPR (2013-2017)	CA (--%)	--	<500	#	#	#
Swiss Chard	--	Other States (-%)	**	**	**	**	**
Other Leafy Vegetables	**	**	**	**	**	**	**
Leafy Vegetables (Seed Treatment)	+	+	+	+	+	+	+
Amaranth, Chinese (Seed Treatment)	**	**	**	**	**	**	**
Chrysanthemum, Garland (Seed Treatment)	**	**	**	**	**	**	**
Cress, Garden (Seed Treatment)	**	**	**	**	**	**	**
Cress, Upland (Seed Treatment)	**	**	**	**	**	**	**
Dandelion (Seed Treatment)	**	**	**	**	**	**	**
Dock (Sorrel) (Seed Treatment)	**	**	**	**	**	**	**
Endive (Escarole) (Seed Treatment)	**	**	**	**	**	**	**
Lettuce (Seed Treatment)	**	**	**	**	**	**	**
Orach (Mountain Spinach) (Seed Treatment)	**	**	**	**	**	**	**
Parsley (Seed Treatment)	**	**	**	**	**	**	**
Purslane, Garden (Seed Treatment)	**	**	**	**	**	**	**
Purslane, Winter (Seed Treatment)	**	**	**	**	**	**	**
Radicchio (Seed Treatment)	**	**	**	**	**	**	**
Roquette (Arugula) (Seed Treatment)	**	**	**	**	**	**	**
Spinach (Seed Treatment)	**	**	**	**	**	**	**
Spinach, New Zealand (Seed Treatment)	**	**	**	**	**	**	**
Other Leafy Vegetables (Seed Treatment)	**	**	**	**	**	**	**

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	State	Avg. Annual Crop Acres Grown†	Avg Annual Total Lbs. AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Brassica Head and Stem Vegetables	+	+	+	+	+	+	+
Brassica (Cole) Vegetables	+	+	+	+	+	+	+
Broccoli	Kynetec (2014-2018)	CA	100,000	4,000	15%	30%	25%
Brussels sprouts	CDPR (2013-2017)*	CA (90%)	8,000	<500	#	#	#
Brussels sprouts	--	Other States (10%)	**	**	**	**	**
Cabbage	Kynetec (2014-2018)	CA	10,000	500	5%	45%	20%
Cabbage	Kynetec (2014-2018)	CO	<500	NR	NR	NR	NR
Cabbage	Kynetec (2014-2018)	FL	7,000	NR	NR	NR	NR
Cabbage	Kynetec (2014-2018)	GA	4,000	NR	NR	NR	NR
Cabbage	Kynetec (2014-2018)	MI	4,000	NR	NR	NR	NR
Cabbage	Kynetec (2014-2018)	NY	9,000	NR	NR	NR	NR
Cabbage	Kynetec (2014-2018)	NC	3,000	NR	NR	NR	NR
Cabbage	Kynetec (2014-2018)	TX	4,000	NR	NR	NR	NR
Cabbage	Kynetec (2014-2018)	WI	5,000	(S)	0%	10%	<2.5%
Cabbage, Chinese (Napa)	CDPR (2013-2017)	CA (58%)	6,000	<500	#	#	#
Cabbage, Chinese (Napa)	--	Other States (42%)	**	**	**	**	**
Cauliflower	Kynetec (2014-2018)	AZ	2,000	(S)	0%	30%	10%
Cauliflower	Kynetec (2014-2018)	CA	40,000	<500	0%	10%	5%
Kohlrabi	CDPR (2013-2017)	CA (--%)	--	(S)	#	#	#
Kohlrabi	--	Other States (-%)	**	**	**	**	**

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	State	Avg. Annual Crop Acres Grown†	Avg Annual Total Lbs. AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Rapini	CDPR (2013-2017)	CA (--%)	--	(S)	#	#	#
Rapini	--	Other States (-%)	**	**	**	**	**
Other Brassica (Cole) Vegetables	**	**	**	**	**	**	**
Brassica Head and Stem Vegetables (Seed Treatment)	+	+	+	+	+	+	+
Brassica (Cole) Vegetables (Seed Treatment)	+	+	+	+	+	+	+
Leek (Seed Treatment)	**	**	**	**	**	**	**
Onion (Seed Treatment)	**	**	**	**	**	**	**
Onion, Scallion (Seed Treatment)	**	**	**	**	**	**	**
Legume Vegetables	+	+	+	+	+	+	+
Soybeans	Kynetec (2014-2018)	AL	500,000	(S)	0%	<2.5%	<1%
Soybeans	Kynetec (2014-2018)	AR	3,400,000	(S)	0%	10%	<2.5%
Soybeans	Kynetec (2014-2018)	DE	200,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	GA	300,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	IL	10,300,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	IN	5,800,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	IA	9,900,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	KS	4,300,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	KY	1,900,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	LA	1,400,000	(S)	0%	15%	5%
Soybeans	Kynetec (2014-2018)	MD	500,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	MI	2,200,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	MN	7,800,000	NR	NR	NR	NR

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	State	Avg. Annual Crop Acres Grown†	Avg Annual Total Lbs. AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Soybeans	Kynetec (2014-2018)	MS	2,200,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	MO	5,600,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	NE	5,400,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	NY	300,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	NC	1,700,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	ND	6,300,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	OH	4,900,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	OK	500,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	PA	600,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	SC	400,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	SD	5,200,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	TN	1,700,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	TX	200,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	VA	600,000	NR	NR	NR	NR
Soybeans	Kynetec (2014-2018)	WI	2,000,000	NR	NR	NR	NR
Legume Vegetables (Seed Treatment)	+	+	+	+	+	+	+
Soybeans (Seed Treatment)	**	**	**	**	**	**	**
Fruiting Vegetables	+	+	+	+	+	+	+
Eggplant	CDPR (2013-2017)	CA (13%)	700	(S)	#	#	#
Eggplant	--	Other States (87%)	5,000	**	**	**	**
Peppers	Kynetec (2014-2018)	AZ	<500	NR	NR	NR	NR
Peppers	Kynetec (2014-2018)	CA	30,000	(S)	0%	10%	<2.5%

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	State	Avg. Annual Crop Acres Grown†	Avg Annual Total Lbs. AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Peppers	Kynetec (2014-2018)	FL	10,000	NR	NR	NR	NR
Peppers	Kynetec (2014-2018)	GA	3,000	NR	NR	NR	NR
Peppers	Kynetec (2014-2018)	NJ	1,000	NR	NR	NR	NR
Peppers	Kynetec (2014-2018)	NM	8,000	NR	NR	NR	NR
Peppers	Kynetec (2014-2018)	NC	2,000	NR	NR	NR	NR
Peppers	Kynetec (2014-2018)	OH	1,000	NR	NR	NR	NR
Peppers	Kynetec (2014-2018)	TX	700	NR	NR	NR	NR
Tomatillo	CDPR (2013-2017)	CA (--%)	--	(S)	#	#	#
Tomatillo	--	Other States (-%)	**	**	**	**	**
Tomatoes	Kynetec (2014-2018)	CA	300,000	900	<2.5%	10%	5%
Tomatoes	Kynetec (2014-2018)	FL	30,000	NR	NR	NR	NR
Other Fruiting Vegetables	**	**	**	**	**	**	**
Cucurbit Vegetables	+	+	+	+	+	+	+
Cantaloupes	Kynetec (2014-2018)	AZ	20,000	NR	NR	NR	NR
Cantaloupes	Kynetec (2014-2018)	CA	30,000	(S)	0%	5%	<2.5%
Cantaloupes	Kynetec (2014-2018)	FL	3,000	NR	NR	NR	NR
Cantaloupes	Kynetec (2014-2018)	GA	2,000	NR	NR	NR	NR
Cantaloupes	Kynetec (2014-2018)	IN	<500	NR	NR	NR	NR
Cantaloupes	Kynetec (2014-2018)	NC	600	NR	NR	NR	NR
Cantaloupes	Kynetec (2014-2018)	SC	<500	NR	NR	NR	NR
Cantaloupes	Kynetec (2014-2018)	TX	2,000	NR	NR	NR	NR
Cucumbers	Kynetec (2014-2018)	CA	9,000	(S)	0%	15%	5%

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	State	Avg. Annual Crop Acres Grown†	Avg Annual Total Lbs. AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Cucumbers	Kynetec (2014-2018)	DE	2,000	NR	NR	NR	NR
Cucumbers	Kynetec (2014-2018)	FL	30,000	NR	NR	NR	NR
Cucumbers	Kynetec (2014-2018)	GA	9,000	NR	NR	NR	NR
Cucumbers	Kynetec (2014-2018)	MD	<500	NR	NR	NR	NR
Cucumbers	Kynetec (2014-2018)	MI	40,000	NR	NR	NR	NR
Cucumbers	Kynetec (2014-2018)	MO	<500	NR	NR	NR	NR
Cucumbers	Kynetec (2014-2018)	NJ	700	NR	NR	NR	NR
Cucumbers	Kynetec (2014-2018)	NC	10,000	(S)	0%	25%	5%
Cucumbers	Kynetec (2014-2018)	SC	<500	NR	NR	NR	NR
Cucumbers	Kynetec (2014-2018)	TX	7,000	NR	NR	NR	NR
Cucumbers	Kynetec (2014-2018)	WA	<500	NR	NR	NR	NR
Cucumbers	Kynetec (2014-2018)	WI	6,000	(S)	0%	5%	<2.5%
Honeydew Melon	NASS (2014, 2016)	AZ	900	NR	NR	NR	NR
Honeydew Melon	NASS (2014, 2016)	CA	10,000	(D)	(D)	(D)	(D)
Pumpkins	Kynetec (2014-2018)	CA	6,000	(S)	0%	10%	<2.5%
Pumpkins	Kynetec (2014-2018)	CO	<500	NR	NR	NR	NR
Pumpkins	Kynetec (2014-2018)	CT	1,000	NR	NR	NR	NR
Pumpkins	Kynetec (2014-2018)	IL	20,000	(S)	0%	10%	<2.5%
Pumpkins	Kynetec (2014-2018)	IN	5,000	NR	NR	NR	NR
Pumpkins	Kynetec (2014-2018)	MD	<500	NR	NR	NR	NR
Pumpkins	Kynetec (2014-2018)	MA	2,000	(S)	0%	<2.5%	<1%
Pumpkins	Kynetec (2014-2018)	MI	5,000	NR	NR	NR	NR

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	State	Avg. Annual Crop Acres Grown†	Avg Annual Total Lbs. AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Pumpkins	Kynetec (2014-2018)	MN	2,000	NR	NR	NR	NR
Pumpkins	Kynetec (2014-2018)	MO	1,000	NR	NR	NR	NR
Pumpkins	Kynetec (2014-2018)	NJ	2,000	(S)	0%	25%	5%
Pumpkins	Kynetec (2014-2018)	NM	<500	NR	NR	NR	NR
Pumpkins	Kynetec (2014-2018)	NY	5,000	NR	NR	NR	NR
Pumpkins	Kynetec (2014-2018)	NC	2,000	NR	NR	NR	NR
Pumpkins	Kynetec (2014-2018)	OH	7,000	(S)	0%	<2.5%	<1%
Pumpkins	Kynetec (2014-2018)	OR	2,000	NR	NR	NR	NR
Pumpkins	Kynetec (2014-2018)	PA	5,000	(S)	0%	15%	5%
Pumpkins	Kynetec (2014-2018)	TN	<500	NR	NR	NR	NR
Pumpkins	Kynetec (2014-2018)	TX	3,000	NR	NR	NR	NR
Pumpkins	Kynetec (2014-2018)	VA	2,000	(S)	0%	75%	15%
Pumpkins	Kynetec (2014-2018)	WA	2,000	NR	NR	NR	NR
Pumpkins	Kynetec (2014-2018)	WI	2,000	(S)	0%	20%	10%
Squash	Kynetec (2014-2018)	CA	6,000	NR	NR	NR	NR
Squash	Kynetec (2014-2018)	CT	800	NR	NR	NR	NR
Squash	Kynetec (2014-2018)	FL	5,000	NR	NR	NR	NR
Squash	Kynetec (2014-2018)	GA	3,000	(S)	0%	20%	5%
Squash	Kynetec (2014-2018)	MA	2,000	(S)	0%	40%	10%
Squash	Kynetec (2014-2018)	MI	6,000	NR	NR	NR	NR
Squash	Kynetec (2014-2018)	NJ	3,000	(S)	0%	25%	5%
Squash	Kynetec (2014-2018)	NY	4,000	NR	NR	NR	NR

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	State	Avg. Annual Crop Acres Grown†	Avg Annual Total Lbs. AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Squash	Kynetec (2014-2018)	NC	3,000	NR	NR	NR	NR
Squash	Kynetec (2014-2018)	OH	2,000	NR	NR	NR	NR
Squash	Kynetec (2014-2018)	OR	3,000	NR	NR	NR	NR
Squash	Kynetec (2014-2018)	PA	<500	NR	NR	NR	NR
Squash	Kynetec (2014-2018)	SC	1,000	(S)	0%	60%	30%
Squash	Kynetec (2014-2018)	TX	2,000	NR	NR	NR	NR
Squash	Kynetec (2014-2018)	WI	1,000	(S)	0%	30%	15%
Watermelons	Kynetec (2014-2018)	AL	1,000	NR	NR	NR	NR
Watermelons	Kynetec (2014-2018)	AZ	600	NR	NR	NR	NR
Watermelons	Kynetec (2014-2018)	CA	10,000	(S)	<2.5%	20%	10%
Watermelons	Kynetec (2014-2018)	FL	20,000	NR	NR	NR	NR
Watermelons	Kynetec (2014-2018)	GA	20,000	NR	NR	NR	NR
Watermelons	Kynetec (2014-2018)	IN	7,000	NR	NR	NR	NR
Watermelons	Kynetec (2014-2018)	MD	700	NR	NR	NR	NR
Watermelons	Kynetec (2014-2018)	MS	<500	NR	NR	NR	NR
Watermelons	Kynetec (2014-2018)	MO	600	NR	NR	NR	NR
Watermelons	Kynetec (2014-2018)	NC	6,000	(S)	0%	5%	<1%
Watermelons	Kynetec (2014-2018)	OK	2,000	NR	NR	NR	NR
Watermelons	Kynetec (2014-2018)	SC	8,000	NR	NR	NR	NR
Watermelons	Kynetec (2014-2018)	TX	30,000	NR	NR	NR	NR
Other Cucurbit Vegetables	**	**	**	**	**	**	**

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	State	Avg. Annual Crop Acres Grown†	Avg Annual Total Lbs. AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Pome Fruit	+	+	+	+	+	+	+
Apples	Kynetec (2014-2018)	CA	20,000	NR	NR	NR	NR
Apples	Kynetec (2014-2018)	MI	40,000	1,000	10%	60%	30%
Apples	Kynetec (2014-2018)	NY	50,000	NR	NR	NR	NR
Apples	Kynetec (2014-2018)	NC	3,000	NR	NR	NR	NR
Apples	Kynetec (2014-2018)	OH	2,000	NR	NR	NR	NR
Apples	Kynetec (2014-2018)	OR	2,000	NR	NR	NR	NR
Apples	Kynetec (2014-2018)	PA	20,000	<500	<2.5%	30%	15%
Apples	Kynetec (2014-2018)	VA	10,000	(S)	0%	75%	20%
Apples	Kynetec (2014-2018)	WA	200,000	NR	NR	NR	NR
Apples	Kynetec (2014-2018)	WV	2,000	<500	0%	65%	15%
Pears	Kynetec (2014-2018)	CA	10,000	NR	NR	NR	NR
Pears	Kynetec (2014-2018)	OR	20,000	(S)	0%	5%	<2.5%
Pears	Kynetec (2014-2018)	WA	20,000	(S)	0%	<2.5%	<1%
Quince	CDPR (2013-2017)	CA (--%)	--	(S)	#	#	#
Quince	--	Other States (-%)	**	**	**	**	**
Other Pome Fruit	**	**	**	**	**	**	**
Stone Fruit	+	+	+	+	+	+	+
Peaches	Kynetec (2014-2018)	AL	1,000	NR	NR	NR	NR
Peaches	Kynetec (2014-2018)	CA	50,000	(S)	0%	<2.5%	<1%
Peaches	Kynetec (2014-2018)	CO	700	NR	NR	NR	NR
Peaches	Kynetec (2014-2018)	GA	10,000	(S)	0%	35%	10%
Peaches	Kynetec (2014-2018)	IL	<500	NR	NR	NR	NR

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	State	Avg. Annual Crop Acres Grown†	Avg Annual Total Lbs. AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Peaches	Kynetec (2014-2018)	MI	3,000	NR	NR	NR	NR
Peaches	Kynetec (2014-2018)	NJ	4,000	NR	NR	NR	NR
Peaches	Kynetec (2014-2018)	NY	<500	NR	NR	NR	NR
Peaches	Kynetec (2014-2018)	PA	5,000	(S)	5%	20%	10%
Peaches	Kynetec (2014-2018)	SC	20,000	(S)	0%	55%	25%
Peaches	Kynetec (2014-2018)	TX	5,000	NR	NR	NR	NR
Peaches	Kynetec (2014-2018)	WA	1,000	NR	NR	NR	NR
Berry and Small Fruit	+	+	+	+	+	+	+
Grapes (except Wine)	CDPR (2013-2017)*	CA (82%) ^b	900,000 ^b	2,000	5%	10%	10%
Grapes (except Wine)	--	Other States (18%)	**	**	**	**	**
Grapes, Wine	CDPR (2013-2017)*	CA (82%) ^b	900,000 ^b	3,000	<1%	5%	<2.5%
Grapes, Wine	--	Other States (18%)	**	**	**	**	**
Low Growing Berries (except Strawberry)	+	+	+	+	+	+	+
Blueberries	NASS (2015, 2017)	GA	20,000	NR	NR	NR	NR
Blueberries	NASS (2015, 2017)	MI	20,000	NR	NR	NR	NR
Blueberries	NASS (2015, 2017)	NJ	10,000	NR	NR	NR	NR
Blueberries	NASS (2015, 2017)	NC	9,000	NR	NR	NR	NR
Blueberries	NASS (2015, 2017)	OR	10,000	NR	NR	NR	NR
Blueberries	NASS (2015, 2017)	WA	10,000	NR	NR	NR	NR
Cranberry	**	**	**	**	**	**	**
Other Low Growing Berries (except Strawberry)	**	**	**	**	**	**	**

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	State	Avg. Annual Crop Acres Grown†	Avg Annual Total Lbs. AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Tree Nuts	+	+	+	+	+	+	+
Almonds	Kynetec (2014-2018)	CA	1,000,000	1,000	<1%	<2.5%	<2.5%
Filberts (Hazelnuts)	Kynetec (2014-2018)	OR	40,000	NR	NR	NR	NR
Pecans	Kynetec (2014-2018)	AL	3,000	NR	NR	NR	NR
Pecans	Kynetec (2014-2018)	AZ	7,000	NR	NR	NR	NR
Pecans	Kynetec (2014-2018)	GA	100,000	(S)	0%	35%	15%
Pecans	Kynetec (2014-2018)	LA	3,000	NR	NR	NR	NR
Pecans	Kynetec (2014-2018)	NM	40,000	NR	NR	NR	NR
Pecans	Kynetec (2014-2018)	OK	100,000	NR	NR	NR	NR
Pecans	Kynetec (2014-2018)	TX	200,000	NR	NR	NR	NR
Pecans	CDPR (2013-2017)	CA (--%)	4,000	<500	#	#	#
Pistachios	Kynetec (2014-2018)	CA	300,000	NR	NR	NR	NR
Walnuts	Kynetec (2014-2018)	CA	400,000	900	<1%	5%	<2.5%
Other Tree Nuts	**	**	**	**	**	**	**
Cereal Grains	+	+	+	+	+	+	+
Rice	Kynetec (2014-2018)	AR	1,500,000	NR	NR	NR	NR
Rice	Kynetec (2014-2018)	CA	500,000	NR	NR	NR	NR
Rice	Kynetec (2014-2018)	LA	400,000	NR	NR	NR	NR
Rice	Kynetec (2014-2018)	MS	200,000	(S)	0%	45%	10%
Rice	Kynetec (2014-2018)	MO	200,000	NR	NR	NR	NR
Rice	Kynetec (2014-2018)	TX	200,000	NR	NR	NR	NR
Cereal Grains (Seed Treatment)	+	+	+	+	+	+	+
Barley (Seed Treatment)	**	**	**	**	**	**	**
Buckwheat (Seed Treatment)	**	**	**	**	**	**	**

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	State	Avg. Annual Crop Acres Grown†	Avg Annual Total Lbs. AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Corn (Seed Treatment)	**	**	**	**	**	**	**
Corn, Field (Seed Treatment)	**	**	**	**	**	**	**
Corn, Pop (Seed Treatment)	**	**	**	**	**	**	**
Corn, Salad (Seed Treatment)	**	**	**	**	**	**	**
Millet (Seed Treatment)	**	**	**	**	**	**	**
Oats (Seed Treatment)	**	**	**	**	**	**	**
Rice (Seed Treatment)	**	**	**	**	**	**	**
Rye (Seed Treatment)	**	**	**	**	**	**	**
Sorghum (Seed Treatment)	**	**	**	**	**	**	**
Sweet Corn (Seed Treatment)	**	**	**	**	**	**	**
Sweet Corn (Seed Treatment) (ID only)	**	**	**	**	**	**	**
Teosinte (Seed Treatment)	**	**	**	**	**	**	**
Triticale (Seed Treatment)	**	**	**	**	**	**	**
Wheat (Seed Treatment)	**	**	**	**	**	**	**
Field Crops	+	+	+	+	+	+	+
Cotton	Kynetec (2014-2018)	AL	400,000	NR	NR	NR	NR
Cotton	Kynetec (2014-2018)	AZ	100,000	NR	NR	NR	NR
Cotton	Kynetec (2014-2018)	AR	400,000	NR	NR	NR	NR
Cotton	Kynetec (2014-2018)	CA	200,000	6,000	20%	40%	30%
Cotton	Kynetec (2014-2018)	FL	100,000	NR	NR	NR	NR
Cotton	Kynetec (2014-2018)	GA	1,300,000	NR	NR	NR	NR
Cotton	Kynetec (2014-2018)	KS	10,000	NR	NR	NR	NR
Cotton	Kynetec (2014-2018)	LA	200,000	NR	NR	NR	NR
Cotton	Kynetec (2014-2018)	MS	500,000	NR	NR	NR	NR
Cotton	Kynetec (2014-2018)	MO	300,000	NR	NR	NR	NR

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	State	Avg. Annual Crop Acres Grown†	Avg Annual Total Lbs. AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Cotton	Kynetec (2014-2018)	NC	400,000	(S)	<1%	5%	5%
Cotton	Kynetec (2014-2018)	OK	400,000	NR	NR	NR	NR
Cotton	Kynetec (2014-2018)	SC	200,000	NR	NR	NR	NR
Cotton	Kynetec (2014-2018)	TN	300,000	(S)	0%	15%	5%
Cotton	Kynetec (2014-2018)	TX	6,100,000	(S)	0%	<2.5%	<1%
Tobacco	Kynetec (2014-2018)	GA	10,000	NR	NR	NR	NR
Tobacco	Kynetec (2014-2018)	KY	80,000	NR	NR	NR	NR
Tobacco	Kynetec (2014-2018)	NC	200,000	NR	NR	NR	NR
Tobacco	Kynetec (2014-2018)	OH	1,000	NR	NR	NR	NR
Tobacco	Kynetec (2014-2018)	PA	8,000	NR	NR	NR	NR
Tobacco	Kynetec (2014-2018)	SC	10,000	NR	NR	NR	NR
Tobacco	Kynetec (2014-2018)	TN	20,000	NR	NR	NR	NR
Tobacco	Kynetec (2014-2018)	VA	30,000	NR	NR	NR	NR
Oilseed (Seed Treatment)	+	+	+	+	+	+	+
Canola/ Rapeseed (Seed Treatment)	**	**	**	**	**	**	**
Mustard (Seed Treatment)	**	**	**	**	**	**	**
Cotton (Seed Treatment)	**	**	**	**	**	**	**
Tropical/Subtropical Fruit	+	+	+	+	+	+	+
Figs	CDPR (2013-2017)*	CA (97%)	7,000	(S)	#	#	#
Pomegranate	CDPR (2013-2017)*	CA (98%)	30,000	<500	#	#	#
Pomegranate	--	Other States (2%)	**	**	**	**	**

Clothianidin National and State Summary Use and Usage Matrix (03-10-21) (revised 06-3-2021)

Crop	Data Source	State	Avg. Annual Crop Acres Grown†	Avg Annual Total Lbs. AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Miscellaneous	+	+	+	+	+	+	+
Artichoke, Globe	CDPR (2013-2017)*	CA (98%)	7,000	(S)	#	#	#
Artichoke, Globe	--	Other States (2%)	**	**	**	**	**
Artichoke, Globe (Seed Treatment)	**	**	**	**	**	**	**
Guayule (Rubber) (AZ only)	**	**	**	**	**	**	**

Notes	
Kynetec (YEAR-YEAR)	Agricultural usage surveyed by market research firm(s).
NASS (YEAR)	Surveyed by United States Department of Agriculture's National Agricultural Statistics Service.
CDPR (YEAR- YEAR)	Surveyed by the California Department of Pesticide Regulation. Percent of crop is grown in California included in parentheses. When over 80% of crop is grown in California, usage is considered to be representative of National usage. When less than 80% of crop is grown in California, but no national source surveys the crop, CDPR data is provided for California, but is not considered to be nationally representative. In these cases, survey data is unavailable for other states where the crop is grown.
*	California crop. Over than 80% of crop grown in California. California usage is considered to be representative of National usage.
†	CAG represents the total number of acres that are grown of the crop in each state. It is independent of treatment with any pesticide. CAG source is the 2017 Census of Agriculture for NASS and CDPR sites, and Kynetec for Kynetec sites. Kynetec calculates CAG yearly based on the Census of Agriculture and other NASS data.
a	The pounds AI displayed in this document may differ from those displayed in the SLUA and other BEAD documents, because different calculation methods were used.
+	See crops below.
NR	Surveyed by the indicated source in the years listed, but no usage reported.
--	Data not available.
**	Site not surveyed at the national level.
(D)	Data withheld by NASS to avoid disclosing data for individual operations.
(S)	Insufficient number of reports to establish an estimate.
#	Withheld by EPA due to likely overcounting caused by reporting issue.
b	Value for all grape types.

Table 3. Clothianidin Non-agricultural Usage. Data averaged over reported years. Values are rounded according to rounding rules provided in the Introduction.

Site	Data Source	Avg. Annual Pounds AI Applied ^a	Avg. Annual Acres Treated ^b	Max Single Labeled Rate ^c
Animal Areas	+	+	+	+
Animal Kennels/ Sleeping Quarters (Commercial)	**	**	**	1.51 lb AI/A
Horse Stables	**	**	**	0.18 lb AI/A
Livestock Areas	**	**	**	0.18 lb AI/A
Pet Living/ Sleeping Quarters	**	**	**	1.51 lb AI/A
Poultry Feedlots	**	**	**	2.90 lb AI/A
Objects/Surfaces	+	+	+	+
Carpets	**	**	**	1.51 lb AI/A
Human Bedding/Mattresses	**	**	**	1.51 lb AI/A
Textiles/Fabrics	**	**	**	1.51 lb AI/A
Transportation Vehicles	+	+	+	+
Automobiles, Taxis, Limousines, Recreational Vehicles, & Tires	**	**	**	1.51 lb AI/A
Commercial Transportation Vehicles (All or Unspecified)	**	**	**	1.51 lb AI/A
Premises/Areas	+	+	+	+
Agricultural/ Farm Building	NMRD† (2016)	NR	NR	0.18 lb AI/A
Airports/ Landing Fields	NMRD† (2016)	NR	NR	0.418 lb AI/A
Commercial/Industrial Buildings (Indoor)	NMRD† (2016)	NR	NR	1.51 lb AI/A
Commercial Storage/ Warehouse	NMRD† (2016)	NR	NR	1.51 lb AI/A
Commercial/Industrial Premises (Outdoor)	NMRD† (2016)	NR	NR	0.392 lb AI/A
Eating Establishments Non-Food Areas	NMRD† (2016)	NR	NR	1.51 lb AI/A
Hospitals/ Medical Institutions Premises (Human/ Veterinary)	NMRD† (2016)	NR	NR	1.51 lb AI/A
Residential (Indoor)	NMRD† (2016)	NR	NR	1.51 lb AI/A
Residential (Outdoor)	Kline†† (2016)	NR	NR	0.392 lb AI/A
Ornamentals	+	+	+	+
Ornamentals (except Trees)	**	**	**	0.418 lb AI/A
Ornamental Lawns and Turf	**	**	**	0.418 lb AI/A
Golf Courses	**	**	**	0.418 lb AI/A
Turf / Recreational Areas	**	**	**	0.418 lb AI/A
Sod Farms	**	**	**	0.418 lb AI/A

Site	Data Source	Avg. Annual Pounds AI Applied ^a	Avg. Annual Acres Treated ^b	Max Single Labeled Rate ^c
Ornamental and/or Shade Trees	**	**	**	0.977 lb AI/A
Fruit & Nut Trees (Nonbearing)	**	**	**	0.977 lb AI/A
Citrus (FL only, nonbearing) ^d	**	**	**	0.1 lb AI/A
Interior Landscapes	**	**	**	0.4 lb AI/A
Residential Fruit Trees (Bearing)	+	+	+	+
Apple	**	**	**	0.2 lb AI/A
Crabapple	**	**	**	0.2 lb AI/A
Pear	**	**	**	0.2 lb AI/A
Pests	+	+	+	+
Broad Spectrum Treatment	NMRD† (2016)	5,000	--	--
Bed Bug Treatment	NMRD† (2016)	4,000	--	--

Notes	
Kline (Year)	Nonagricultural usage surveyed by market research firm(s).
NMRD (Year)	Nonagricultural usage surveyed by market research firm(s).
†	Nonagricultural Market Research Data (NMRD). 2017. Surveyed by market research firm(s). Accessed September 2020.
††	Kline. 2017. Consumer Markets for Pesticides and Fertilizers 2016: U.S. Market Analysis and Opportunities - Volume 1. Accessed September 2020.
a	The pounds AI displayed in this document may differ from those displayed in the SLUA and other BEAD documents, because different calculation methods were used.
c	Max labeled rate from the most recently EPA accepted label as of August 2020.
**	Site not surveyed at the national level
NR	Surveyed by the indicated source in the years listed, but no usage reported.
+	See sites below.
--	Data not available.
d	Expiration date of registration associated with Citrus (FL only, nonbearing) site: 12/31/2017.