

Appendix 1-4. Usage Data for Thiamethoxam – SUUM

See attached memorandum, Thiamethoxam (060109) National and State Summary Use and Usage Matrix (October 16, 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

October 16, 2020 (revised June 3, 2021)

MEMORANDUM

SUBJECT: Thiamethoxam (060109) National and State Summary Use and Usage Matrix

FROM: Claire Paisley-Jones, Biologist
Science Information and Analysis Branch
Biological and Economic Analysis Division (7503P)

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THRU: Hope Johnson, Chief
Science Information and Analysis Branch
Biological and Economic Analysis Division (7503P)

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TO: Sujatha Sankula, Branch Chief, and
Greg Orrick, Risk Assessment Process Leader
Environmental Risk Branch I
Environmental Fate and Effects Division

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 6-3-21 Corrections

This document was edited to correct minor errors, as noted below. No further analyses have been performed and no new data are included. This revised document supersedes the version dated 10-16-20.

Tropical Fruits corrections (Table 1 and Table 2)

Removed: Olives and Pomegranate

Added: Black Sapote, Canistel, Mamey Sapote, Mangoes, Papaya, Sapodilla, and Star apple.

Sugar Beets corrections (Table 1 and Table 2)

Changed to not surveyed (only registered in non-surveyed states)

Carrots (Table 1)

Carrots removed from states with no usage reported. The row with usage in CA is correct.

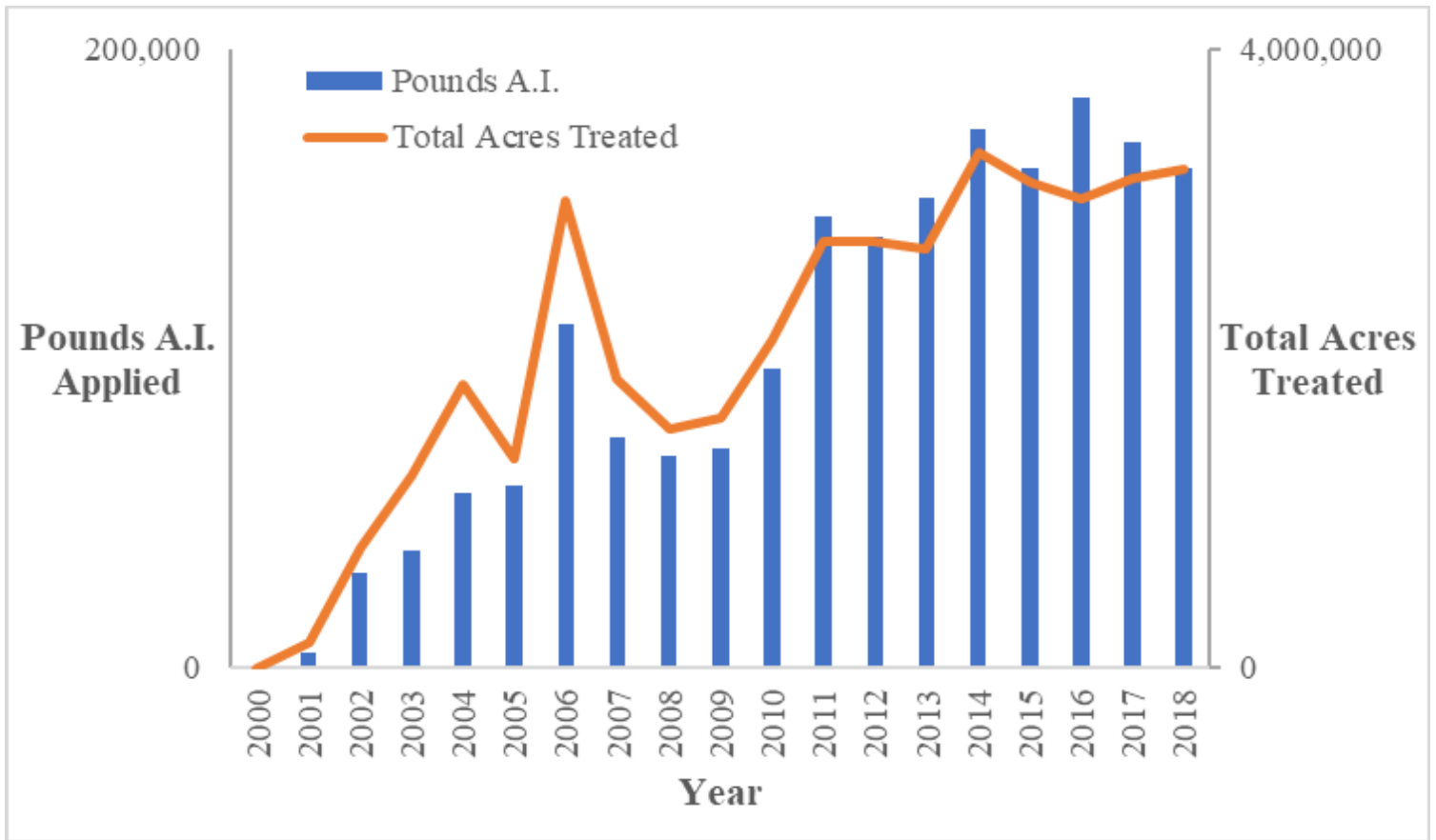


Figure 1. Thiamethoxam Total Acres Treated and Total Pounds A.I. Applied to Agricultural Crops (2000*-2018). (Does not include seed treatment usage, or crops surveyed only by NASS and CDRP, as indicated in Table 1)

Source: Kynetec USA, Inc. 2019. "The AgroTrak® Study from Kynetec USA, Inc." Database Subset: 2000-2018

* Note Thiamethoxam was first registered in 2000.

Table 1. National Thiamethoxam 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	Percent Applied by Air	Avg. AI Rate (lb AI/A)	Max Labeled Rate ^c (units listed)
Root and Tuber Vegetables (except sugar beets, radishes, and tuberous and corm)	+	+	+	+	+	+	Full Crop Group Not Registered
Sugar Beets (OR and WA SLNs only)	**	**	**	**	**	**	0.063 lb/a
Radish	**	**	**	**	**	**	0.125 lb/a
Root Vegetables (except sugar beets, and radishes)	+	+	+	+	+	+	0.188 lb/a
Carrots	Kynetec (2014-2018)	CA, MI, WA, WI	600	9,000	25%	0.065	0.188 lb/a
<i>Other Root Vegetables (except sugar beets, and radishes)</i>	**	**	**	**	**	**	0.188 lb/a
Tuberous and Corm Vegetables	+	+	+	+	+	+	0.13 lb/a
Potatoes	Kynetec (2014-2018)	CA, CO, FL, ID, ME, MI, MN, MT, NY, NC, ND, OR, WA, WI	20,000	200,000	10%	0.084	0.13 lb/a
<i>Other tuberous and corm vegetables</i>	**	**	**	**	**	**	0.13 lb/a
Root and Tuber Vegetables (seed treatment)	+	+	+	+	+	+	Full Crop Group Not Registered
Sugar Beets	Seed Treatment **	**	**	**	**	**	1.6E-06 lb/seed
Carrots	Seed Treatment **	**	**	**	**	**	1.1E-07 lb/seed
Potatoes	Seed Treatment **	**	**	**	**	**	6.25E-05 lb/lb seed
Bulb Vegetables (seed treatment)	+	+	+	+	+	+	Full Crop Group Not Registered
Onions	Seed Treatment **	**	**	**	**	**	4.4E-07 lb/seed

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Pounds AI Applied a	Avg. Annual Total Acres Treated b	Percent Applied by Air	Avg. AI Rate (lb AI/A)	Max Labeled Rate ^c (units listed)
Leafy Vegetables	+	+	+	+	+	+	0.175 lb/a
Celery	Kynetec (2014-2018)	CA, MI	1,000	10,000	10%	0.120	0.175 lb/a
Lettuce	Kynetec (2014-2018)	AZ, CA	5,000	90,000	10%	0.060	0.175 lb/a
Spinach	Kynetec (2014-2018)	AZ, CA, TX	<500	4,000	65%	0.075	0.175 lb/a
<i>Other Leafy Vegetables</i>	**	**	**	**	**	**	0.175 lb/a
Leafy Vegetables (seed treatment)	+	+	+	+	+	+	2.7E-06 lb/seed
<i>Leafy Vegetables</i>	Seed Treatment **	**	**	**	**	**	2.7E-06 lb/seed
Brassica Vegetables	+	+	+	+	+	+	0.175 lb/a
Broccoli	Kynetec (2014-2018)	CA*	4,000	60,000	20%	0.075	0.175 lb/a
Brussels Sprouts	CDPR (2013-2017)	CA*	500	7,000	10%	0.070	0.175 lb/a
Cabbage	Kynetec (2014-2018)	AZ, CA, MI, NY, NC, TX, WI	1,000	10,000	<2.5%	0.101	0.175 lb/a
Cauliflower	Kynetec (2014-2018)	AZ, CA	2,000	20,000	30%	0.079	0.175 lb/a
<i>Other Brassica Vegetables</i>	**	**	**	**	**	**	0.175 lb/a
Brassica Vegetables (seed treatment)	+	+	+	+	+	+	2.2E-07 lb/seed
<i>Brassica Vegetables</i>	Seed Treatment **	**	**	**	**	**	2.2E-07 lb/seed
Legumes (except soybeans) (seed treatment)	+	+	+	+	+	+	5.0E-04 lb/lb seed
<i>Legumes (except soybeans)</i>	Seed Treatment **	**	**	**	**	**	5.0E-04 lb/lb seed
Soybeans	+	+	+	+	+	+	0.063 lb/a
<i>Soybeans</i>	Kynetec (2014-2018)	AR, IL, IN, IA, KS, KY, LA, MN, MO, NE, NC, OH, OK, SD, TN, TX, WI	40,000	1,000,000	40%	0.03503563	0.063 lb/a

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Pounds AI Applied a	Avg. Annual Total Acres Treated b	Percent Applied by Air	Avg. AI Rate (lb AI/A)	Max Labeled Rate ^c (units listed)
Soybeans (seed treatment)	+	+	+	+	+	+	7.5E-04 lb/lb seed
<i>Soybeans</i>	Seed Treatment **	**	**	**	**	**	7.5E-04 lb/lb seed
Fruiting Vegetables	+	+	+	+	+	+	0.175 lb/a
Peppers	Kynetec (2014-2018)	AZ, CA, FL, GA, NJ, NM, NC, OH	3,000	30,000	<2.5%	0.100	0.175 lb/a
Tomatoes	Kynetec (2014-2018)	CA	9,000	60,000	<1%	0.153	0.175 lb/a
<i>Other Fruiting Vegetables</i>	**	**	**	**	**	**	0.175 lb/a
Cucurbits	+	+	+	+	+	+	0.175 lb/a
Cantaloupes	Kynetec (2014-2018)	CA, FL	900	6,000	15%	0.151	0.175 lb/a
Cucumbers	Kynetec (2014-2018)	CA, FL, MI, TX, WI	1,000	10,000	10%	0.102	0.175 lb/a
Honeydew	NASS (2014, 2016, 2018)	CA	800	--	--	0.076	0.175 lb/a
Pumpkins	Kynetec (2014-2018)	CA, CT, IL, MI, NY, NC, OH, PA, TN, VA, WI	<500	6,000	35%	0.077	0.175 lb/a
Squash	Kynetec (2014-2018)	CA, CT, FL, MI, NY, OR, WI	<500	5,000	5%	0.089	0.175 lb/a
Watermelons	Kynetec (2014-2018)	CA, FL, TX	1,000	8,000	<1%	0.129	0.175 lb/a
<i>Other Cucurbits</i>	**	**	**	**	**	**	0.175 lb/a
Cucurbits (seed treatment)	+	+	+	+	+	+	1.7E-06 lb/seed
<i>Cucurbits</i>	Seed Treatment **	**	**	**	**	**	1.7E-06 lb/seed
Citrus	+	+	+	+	+	+	0.172 lb/a
Grapefruit	Kynetec (2014-2018)	FL, TX	2,000	30,000	<2.5%	0.078	0.172 lb/a
Lemon	Kynetec (2014-2018)	AZ, CA	1,000	20,000	<2.5%	0.087	0.172 lb/a
Orange	Kynetec (2014-2018)	CA, FL	20,000	200,000	5%	0.083	0.172 lb/a
Tangerine	CDPR (2013-2017)	CA*	600	8,000	10%	0.074	0.172 lb/a
Tangelo	CDPR (2013-2017)	CA*	<500	2,000	0%	0.086	0.172 lb/a

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Pounds AI Applied a	Avg. Annual Total Acres Treated b	Percent Applied by Air	Avg. AI Rate (lb AI/A)	Max Labeled Rate ^c (units listed)
<i>Other Citrus</i>	**	**	**	**	**	**	0.172 lb/a
Pome Fruit	+	+	+	+	+	+	0.088 lb/a
Apples	Kynetec (2014-2018)	MI, NY, NC, OH, PA, VA, WA, WV	5,000	90,000	5%	0.058	0.088 lb/a
Pears	Kynetec (2014-2018)	CA, WA	800	10,000	0%	0.080	0.088 lb/a
<i>Other Pome Fruit</i>	**	**	**	**	**	**	0.088 lb/a
Stone Fruit	+	+	+	+	+	+	0.088 lb/a
Apricot	CDPR (2013-2017)	CA*	<500	<500	0%	0.042	0.088 lb/a
Cherries	Kynetec (2014-2018)	CA, MI, WA	3,000	50,000	<1%	0.065	0.088 lb/a
Peaches	Kynetec (2014-2018)	CA, MI, NY, PA, SC	700	10,000	0%	0.062	0.088 lb/a
Plums/Prunes	Kynetec (2014-2018)	CA	(S)	(S)	(S)	(S)	0.088 lb/a
Nectarine	CDPR (2013-2017)	CA*	<500	<500	0%	0.030	0.088 lb/a
<i>Other Stone Fruit</i>	**	**	**	**	**	**	0.088 lb/a
Berries and Small Fruit	+	+	+	+	+	+	Full Crop Group Not Registered
Small Fruit Vine Climbing Subgroup (except Fuzzy Kiwi Fruit and Gooseberry)	+	+	+	+	+	+	0.27 lb/a
Grapes	+	+	+	+	+	+	0.27 lb/a
Grapes, Raisin	Kynetec (2014-2018)	CA	(S)	(S)	(S)	(S)	0.27 lb/a
Grapes, Table	CDPR (2013-2017)	CA*	<500	3,000	<2.5%	0.086	0.27 lb/a
Grapes, Wine	Kynetec (2014-2018)	CA	2,000	10,000	0%	0.206	0.27 lb/a
<i>Other Vine Fruit</i>	**	**	**	**	**	**	0.27 lb/a
Bushberries	+	+	+	+	+	+	0.19 lb/a
Blueberries	NASS (2015)	NJ, OR, WA	600	--	--	0.069	0.19 lb/a
<i>Other bushberries</i>	**	**	**	**	**	**	0.19 lb/a
Low Growing Berries (except cranberries)	+	+	+	+	+	+	0.19 lb/a
Strawberries	Kynetec (2014-2018)	CA, FL, NY	1,000	30,000	0%	0.053	0.19 lb/a
<i>Other low growing berries</i>	**	**	**	**	**	**	0.19 lb/a

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Pounds AI Applied a	Avg. Annual Total Acres Treated b	Percent Applied by Air	Avg. AI Rate (lb AI/A)	Max Labeled Rate ^c (units listed)
Caneberries	+	+	+	+	+	+	0.05 lb/a
Caneberries	Kynetec (2014-2018)	CA	<500	<500	0%	0.047	0.05 lb/a
<i>Other caneberries</i>	**	**	**	**	**	**	0.05 lb/a
Cranberries	+	+	+	+	+	+	0.06 lb/a
<i>Cranberries</i>	**	**	**	**	**	**	0.06 lb/a
Tree Nuts	+	+	+	+	+	+	0.063 lb/a
Pecans	Kynetec (2014-2018)	GA, OK, TX	<500	4,000	0%	0.059	0.063 lb/a
Pistachios	CDPR (2013-2017)	CA*	<500	<500	0%	0.010	0.063 lb/a
Walnuts	CDPR (2013-2017)	CA*	<500	<500	0%	0.018	0.063 lb/a
Almonds	CDPR (2013-2017)	CA*	<500	<500	0%	0.012	0.063 lb/a
Filberts (Hazelnuts)	Kynetec (2014-2018)	NR	NR	NR	NR	NR	0.063 lb/a
<i>Other Tree Nuts</i>	**	**	**	**	**	**	0.063 lb/a
Cereal Grains	+	+	+	+	+	+	Full Crop Group Not Registered
Barley	**	**	**	**	**	**	0.063 lb/a
Cereal Grains (seed treatment)	+	+	+	+	+	+	5.2E-04 lb/lb seed (unless otherwise specified)
Barley	Seed Treatment **	**	**	**	**	**	5.2E-04 lb/lb seed
Corn	+	+	+	+	+	+	+
Field, Corn	Seed Treatment **	**	**	**	**	**	9.9E-04 lb/lb seed
Pop, Corn	Seed Treatment **	**	**	**	**	**	2.2E-03 lb/lb seed
Sweet, Corn	Seed Treatment **	**	**	**	**	**	1.8E-03 lb/lb seed
Rice	Seed Treatment **	**	**	**	**	**	1.4E-03 lb/lb seed
Sorghum	Seed Treatment **	**	**	**	**	**	3.0E-03 lb/seed

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Pounds AI Applied a	Avg. Annual Total Acres Treated b	Percent Applied by Air	Avg. AI Rate (lb AI/A)	Max Labeled Rate ^c (units listed)
Wheat, Spring	Seed Treatment **	**	**	**	**	**	5.2E-04 lb/lb seed
Wheat, Winter	Seed Treatment **	**	**	**	**	**	5.2E-04 lb/lb seed
<i>Other Cereal Grains</i>	Seed Treatment **	**	**	**	**	**	5.2E-04 lb/lb seed (unless otherwise specified above)
Oil Seeds	+	+	+	+	+	+	Full Crop Group Not Registered
Cotton	Kynetec (2014-2018)	AL, AZ, AR, CA, GA, LA, MS, MO, NC, OK, SC, TN, TX	50,000	1,100,000	5%	0.043	0.063 lb/a
Oil Seeds (seed treatment)	+	+	+	+	+	+	Full Crop Group Not Registered
Cotton	Seed Treatment **	**	**	**	**	**	8.6E-04 lb/seed
Sunflower	Seed Treatment **	**	**	**	**	**	5.5E-07 lb/seed
Oil Seeds (black mustard seed, borage seed, crambe seed, field mustard seed, flax seed, Indian mustard seed, Indian rapeseed seed, rapeseed seed, and safflower seed)	Seed Treatment **	**	**	**	**	**	4.0E-03 lb/lb seed
Tropical Fruit	**	**	**	**	**	**	0.063 lb/a
Avocado	CDPR (2013-2017)	CA*	<500	<500	15%	0.024	0.063 lb/a
Canistel	**	**	**	**	**	**	0.063 lb/a
Mamey Sapote	**	**	**	**	**	**	0.063 lb/a
Mango	**	**	**	**	**	**	0.063 lb/a
Papaya	**	**	**	**	**	**	0.063 lb/a

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Pounds AI Applied a	Avg. Annual Total Acres Treated b	Percent Applied by Air	Avg. AI Rate (lb AI/A)	Max Labeled Rate ^c (units listed)
Sapodilla	**	**	**	**	**	**	0.063 lb/a
Star Apple	**	**	**	**	**	**	0.063 lb/a
Other Crops	+	+	+	+	+	+	+
Artichokes	Kynetec (2014-2018)	CA*	<500	3,000	35%	0.051	0.047 lb/a
Hops	**	**	**	**	**	**	0.125 lb/a
Mint	**	**	**	**	**	**	0.063 lb/a
Tobacco	Kynetec (2014-2018)	KY, NC, TN, VA	1,000	10,000	0%	0.094	0.050 lb/a
Other Crops (seed treatment)	+	+	+	+	+	+	+
Alfalfa	Seed Treatment **	**	**	**	**	**	2.2E-09 lb/seed
Peanuts	Seed Treatment **	**	**	**	**	**	4.5E-04 lb/lb seed

Notes	
Kynetec (YEARS)	Agricultural usage surveyed by market research firm(s).
NASS (YEARS)	Surveyed by United States Department of Agriculture National Agricultural Statistics Service.
CDPR (YEARS)	Surveyed by the California Department of Pesticide Regulation. Used when 80% or more of crop is 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	Currently registered labels as of August 2020.
+	See constituent crops below.
NR	Surveyed by the indicated source in the years listed, but no usage reported.
--	Data unavailable.
**	Site not surveyed at national level.
(S)	Insufficient number of reports to establish an estimate.

Table 2. National Thiamethoxam 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	States with Reported Usage	Avg. Annual Crop Acres Grown†	Avg. Annual Pounds AI Applieda	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Root and Tuber Vegetables	+	+	+	+	+	+	+
Sugar Beets	Kynetec (2014-2018)	OR, WA	NR	NR	NR	NR	NR
Radish	**	**	**	**	**	**	**
Root Vegetables (except sugar beets, and radishes)	+	+	+	+	+	+	+
Beets, Garden	CDPR (2013-2017)	CA (15%)	2,000	<500	#	#	#
Beets, Garden	**	<i>other states (85%)</i>	**	**	**	**	**
Carrots	Kynetec (2014-2018)	CA	50,000	<500	0%	10%	5%
Carrots	Kynetec (2014-2018)	MI	800	(S)	0%	95%	20%
Carrots	Kynetec (2014-2018)	WA	4,000	(S)	0%	60%	30%
Carrots	Kynetec (2014-2018)	WI	2,000	(S)	0%	10%	5%
<i>Carrots</i>	Kynetec (2014-2018)	TX	NR	NR	NR	NR	NR
Celeriac	CDPR (2013-2017)	CA (--%)	--	<500	#	#	#
Celeriac	**	<i>other states (--%)</i>	**	**	**	**	**
Chervil	CDPR (2013-2017)	CA (--%)	--	<500	#	#	#
Chervil	**	<i>other states (--%)</i>	**	**	**	**	**
Chicory	CDPR (2013-2017)	CA (82%)	700	<500	10%	25%	10%
Daikon	CDPR (2013-2017)	CA (44%)	<500	<500	<1%	5%	<2.5%
Daikon	**	<i>other states (56%)</i>	**	**	**	**	**
Ginger	CDPR (2013-2017)	CA (--%)	--	<500	100%	100%	20%
Ginger	**	<i>other states (--%)</i>	**	**	**	**	**
Kohlrabi	CDPR (2013-2017)	CA (--%)	--	<500	<1%	<2.5%	<1%
Kohlrabi	**	<i>other states (--%)</i>	**	**	**	**	**

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Crop Acres Grown†	Avg. Annual Pounds AI Applieda	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Turnip	CDPR (2013-2017)	CA (6%)	<500	<500	<1%	10%	<2.5%
Turnip	**	<i>other states (94%)</i>	**	**	**	**	**
<i>Other Root Vegetables (except sugar beets, and radishes)</i>	**	**	**	**	**	**	**
Tuberous and Corm Vegetables	+	+	+	+	+	+	+
Potatoes	Kynetec (2014-2018)	CA	20,000	(S)	0%	15%	10%
Potatoes	Kynetec (2014-2018)	CO	50,000	<500	0%	15%	10%
Potatoes	Kynetec (2014-2018)	FL	20,000	<500	0%	25%	15%
Potatoes	Kynetec (2014-2018)	ID	300,000	2,000	<2.5%	15%	10%
Potatoes	Kynetec (2014-2018)	ME	50,000	700	10%	25%	15%
Potatoes	Kynetec (2014-2018)	MI	50,000	700	10%	30%	15%
Potatoes	Kynetec (2014-2018)	MN	40,000	2,000	25%	60%	45%
Potatoes	Kynetec (2014-2018)	MT	7,000	(S)	0%	50%	15%
Potatoes	Kynetec (2014-2018)	NY	6,000	<500	0%	25%	10%
Potatoes	Kynetec (2014-2018)	NC	6,000	(S)	0%	40%	15%
Potatoes	Kynetec (2014-2018)	ND	80,000	3,000	35%	60%	40%
Potatoes	Kynetec (2014-2018)	OR	8,000	(S)	0%	<2.5%	<1%
Potatoes	Kynetec (2014-2018)	WA	200,000	6,000	20%	50%	35%
Potatoes	Kynetec (2014-2018)	WI	70,000	2,000	20%	40%	30%
<i>Potatoes</i>	Kynetec (2014-2018)	NE, PA, TX	NR	NR	NR	NR	NR
Sweet Potatoes	CDPR (2013-2017)	CA (13%)	20,000	<500	<1%	<2.5%	<1%
Sweet Potatoes	**	<i>other states (87%)</i>	**	**	**	**	**
<i>Other tuberous and corm vegetables</i>	**	**	**	**	**	**	**

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Crop Acres Grown†	Avg. Annual Pounds AI Applieda	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Root and Tuber Vegetables (seed treatment)	+	+	+	+	+	+	+
Sugar Beets	Seed Treatment**	**	**	**	**	**	**
Carrots	Seed Treatment**	**	**	**	**	**	**
Potatoes	Seed Treatment**	**	**	**	**	**	**
Bulb Vegetables	+	+	+	+	+	+	+
Onions	Seed Treatment**	**	**	**	**	**	**
Leafy Vegetables	+	+	+	+	+	+	+
Arugula	CDPR (2013-2017)	CA (--%)	--	<500	#	#	#
Arugula	**	<i>other states (--%)</i>	**	**	**	**	**
Celery	Kynetec (2014-2018)	CA	30,000	1,000	30%	55%	35%
Celery	Kynetec (2014-2018)	MI	700	<500	0%	85%	35%
Cilantro	CDPR (2013-2017)	CA (--%)	--	<500	<1%	<2.5%	<1%
Cilantro	**	<i>other states (--%)</i>	**	**	**	**	**
Dandelion	CDPR (2013-2017)	CA (--%)	--	<500	<1%	<2.5%	<1%
Dandelion	**	<i>other states (--%)</i>	**	**	**	**	**
Endive	CDPR (2013-2017)	CA (65%)	2,000	<500	<1%	<2.5%	<1%
Endive	**	<i>other states (35%)</i>	**	**	**	**	**
Fennel	CDPR (2013-2017)	CA (--%)	--	<500	<1%	<2.5%	<1%
Fennel	**	<i>other states (--%)</i>	**	**	**	**	**
Gai Lon	CDPR (2013-2017)	CA (--%)	--	<500	<2.5%	<2.5%	<1%
Gai Lon	**	<i>other states (--%)</i>	**	**	**	**	**
Lettuce	Kynetec (2014-2018)	AZ	70,000	<500	<1%	15%	10%
Lettuce	Kynetec (2014-2018)	CA	200,000	5,000	20%	40%	30%

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Crop Acres Grown†	Avg. Annual Pounds AI Applieda	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Mizuna	CDPR (2013-2017)	CA (--%)	--	<500	<1%	<2.5%	<1%
Mizuna	**	other states (--%)	**	**	**	**	**
Mustard	CDPR (2013-2017)	CA (--%)	--	<500	<1%	<2.5%	<1%
Mustard	**	other states (--%)	**	**	**	**	**
Mustard Greens	CDPR (2013-2017)	CA (9%)	5,000	<500	<1%	<2.5%	<1%
Mustard Greens	**	other states (91%)	**	**	**	**	**
Parsley	CDPR (2013-2017)	CA (66%)	3,000	<500	<1%	<2.5%	<1%
Parsley	**	other states (34%)	**	**	**	**	**
Radicchio	CDPR (2013-2017)	CA (--%)	--	<500	<1%	5%	<2.5%
Radicchio	**	other states (--%)	**	**	**	**	**
Rapini	CDPR (2013-2017)	CA (--%)	--	<500	<1%	<2.5%	<1%
Rapini	**	other states (--%)	**	**	**	**	**
Spinach	Kynetec (2014-2018)	AZ	7,000	(S)	0%	50%	20%
Spinach	Kynetec (2014-2018)	CA	30,000	<500	<2.5%	10%	10%
Spinach	Kynetec (2014-2018)	TX	<500	(S)	0%	45%	10%
Spinach	Kynetec (2014-2018)	CO, NJ, OK	NR	NR	NR	NR	NR
Swiss Chard	CDPR (2013-2017)	CA (--%)	--	<500	<1%	<2.5%	<1%
Swiss Chard	**	other states (--%)	**	**	**	**	**
Upland Cress	CDPR (2013-2017)	CA (30%)	20,000	<500	<1%	<2.5%	<1%
Upland Cress	**	other states (70%)	**	**	**	**	**
Watercress	CDPR (2013-2017)	CA (71%)	<500	<500	<1%	<2.5%	<1%
Watercress	**	other states (29%)	**	**	**	**	**
Other Leafy Vegetables	**	**	**	**	**	**	**

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Crop Acres Grown†	Avg. Annual Pounds AI Applieda	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Leafy Vegetables (seed treatment)	+	+	+	+	+	+	+
<i>Leafy Vegetables</i>	Seed Treatment**	**	**	**	**	**	**
Brassica Vegetables	+	+	+	+	+	+	+
Bok Choy	CDPR (2013-2017)	CA (--%)	--	<500	#	#	#
Bok Choy	**	<i>other states (--%)</i>	**	**	**	**	**
Broccoli	Kynetec (2014-2018)	CA	100,000	4,000	25%	40%	35%
Brussels Sprouts	CDPR (2013-2017)	CA* (90%)	8,000	500	#	#	#
Cabbage	Kynetec (2014-2018)	AZ	1,000	(S)	0%	65%	25%
Cabbage	Kynetec (2014-2018)	CA	10,000	500	10%	55%	30%
Cabbage	Kynetec (2014-2018)	MI	4,000	<500	10%	60%	25%
Cabbage	Kynetec (2014-2018)	NY	9,000	<500	5%	15%	10%
Cabbage	Kynetec (2014-2018)	NC	2,000	(S)	0%	20%	10%
Cabbage	Kynetec (2014-2018)	TX	2,000	(S)	0%	65%	20%
Cabbage	Kynetec (2014-2018)	WI	2,000	<500	0%	20%	10%
<i>Cabbage</i>	Kynetec (2014-2018)	CO, FL, GA	NR	NR	NR	NR	NR
Cauliflower	Kynetec (2014-2018)	AZ	900	(S)	0%	30%	10%
Cauliflower	Kynetec (2014-2018)	CA	40,000	2,000	30%	45%	35%
Collard Greens	CDPR (2013-2017)	CA (5%)	600	<500	<2.5%	10%	5%
Collard Greens	**	<i>other states (95%)</i>	**	**	**	**	**
Kale	CDPR (2013-2017)	CA (46%)	7,000	<500	<1%	<2.5%	<1%
Kale	**	<i>other states (54%)</i>	**	**	**	**	**
Napa Cabbage	CDPR (2013-2017)	CA (--%)	--	<500	<2.5%	5%	5%
Napa Cabbage	**	<i>other states (--%)</i>	**	**	**	**	**
<i>Other Brassica Vegetables</i>	**	**	**	**	**	**	**

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Crop Acres Grown†	Avg. Annual Pounds AI Applieda	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Brassica Vegetables (seed treatment)	+	+	+	+	+	+	+
<i>Brassica Vegetables</i>	Seed Treatment**	**	**	**	**	**	**
Legumes (except soybeans) (seed treatment)	+	+	+	+	+	+	+
<i>Legumes (except soybeans)</i>	Seed Treatment**	**	**	**	**	**	**
Soybeans	+	+	+	+	+	+	+
Soybeans	Kynetec (2014-2018)	AR	1,400,000	1,000	0%	5%	<1%
Soybeans	Kynetec (2014-2018)	IL	8,300,000	7,000	0%	5%	<2.5%
Soybeans	Kynetec (2014-2018)	IN	3,600,000	600	0%	<2.5%	<1%
Soybeans	Kynetec (2014-2018)	IA	9,900,000	3,000	<1%	<2.5%	<1%
Soybeans	Kynetec (2014-2018)	KS	1,800,000	1,000	0%	<2.5%	<1%
Soybeans	Kynetec (2014-2018)	KY	400,000	(S)	0%	<2.5%	<1%
Soybeans	Kynetec (2014-2018)	LA	1,400,000	4,000	<1%	15%	10%
Soybeans	Kynetec (2014-2018)	MN	7,800,000	10,000	5%	10%	5%
Soybeans	Kynetec (2014-2018)	MO	3,300,000	700	0%	<2.5%	<1%
Soybeans	Kynetec (2014-2018)	NE	3,300,000	900	0%	<2.5%	<1%
Soybeans	Kynetec (2014-2018)	NC	1,400,000	<500	0%	<2.5%	<1%
Soybeans	Kynetec (2014-2018)	OH	2,000,000	(S)	0%	<2.5%	<1%
Soybeans	Kynetec (2014-2018)	OK	200,000	(S)	0%	65%	20%
Soybeans	Kynetec (2014-2018)	SD	5,200,000	3,000	<1%	10%	<2.5%
Soybeans	Kynetec (2014-2018)	TN	400,000	(S)	0%	<2.5%	<1%
Soybeans	Kynetec (2014-2018)	TX	30,000	(S)	0%	<2.5%	<1%
Soybeans	Kynetec (2014-2018)	WI	1,200,000	<500	0%	<2.5%	<1%
<i>Soybeans</i>	Kynetec (2014-2018)	AL, GA, MD, MI, MS, NY, ND, PA, SC, VA	NR	NR	NR	NR	NR

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Crop Acres Grown†	Avg. Annual Pounds AI Applieda	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Soybeans (seed treatment)	+	+	+	+	+	+	+
<i>Soybeans</i>	Seed Treatment**	**	**	**	**	**	**
Fruiting Vegetables	+	+	+	+	+	+	+
Eggplant	CDPR (2013-2017)	CA (13%)	700	<500	<1%	10%	10%
Eggplant	**	<i>other states (87%)</i>	**	**	**	**	**
Peppers	Kynetec (2014-2018)	AZ	<500	(S)	0%	55%	15%
Peppers	Kynetec (2014-2018)	CA	30,000	1,000	20%	55%	35%
Peppers	Kynetec (2014-2018)	FL	10,000	1,000	35%	95%	65%
Peppers	Kynetec (2014-2018)	GA	1,000	<500	0%	55%	20%
Peppers	Kynetec (2014-2018)	NJ	600	(S)	0%	20%	5%
Peppers	Kynetec (2014-2018)	NM	7,000	<500	0%	85%	40%
Peppers	Kynetec (2014-2018)	NC	<500	(S)	0%	<2.5%	<1%
Peppers	Kynetec (2014-2018)	OH	600	(S)	0%	15%	<2.5%
<i>Peppers</i>	Kynetec (2014-2018)	TX	NR	NR	NR	NR	NR
Tomatoes	Kynetec (2014-2018)	CA	300,000	9,000	10%	30%	20%
<i>Tomatoes</i>	Kynetec (2014-2018)	FL	NR	NR	NR	NR	NR
Tomatillo	CDPR (2013-2017)	CA (--%)	--	<500	15%	60%	30%
Tomatillo	**	<i>other states (--%)</i>	**	**	**	**	**
<i>Other Fruiting Vegetables</i>	**	**	**	**	**	**	**
Cucurbits	+	+	+	+	+	+	+
Cantaloupes	Kynetec (2014-2018)	CA	30,000	800	10%	20%	20%
Cantaloupes	Kynetec (2014-2018)	FL	2,000	<500	0%	95%	35%
<i>Cantaloupes</i>	Kynetec (2014-2018)	AZ, GA, IN, NC, SC, TX	NR	NR	NR	NR	NR
Cucumbers	Kynetec (2014-2018)	CA	9,000	<500	<2.5%	10%	5%
Cucumbers	Kynetec (2014-2018)	FL	20,000	800	0%	55%	25%

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Crop Acres Grown†	Avg. Annual Pounds AI Applieda	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Cucumbers	Kynetec (2014-2018)	MI	7,000	(S)	0%	15%	<2.5%
Cucumbers	Kynetec (2014-2018)	TX	2,000	(S)	0%	65%	15%
Cucumbers	Kynetec (2014-2018)	WI	4,000	(S)	0%	25%	10%
<i>Cucumbers</i>	Kynetec (2014-2018)	DE, GA, MD, MO, NJ, NC, SC, WA	NR	NR	NR	NR	NR
Honeydew	NASS (2014, 2016, 2018)	CA	10,000	800	(D)	50%	50%
<i>Honeydew</i>	NASS (2014, 2016, 2018)	AZ	NR	NR	NR	NR	NR
Pumpkins	Kynetec (2014-2018)	CA	6,000	<500	5%	35%	10%
Pumpkins	Kynetec (2014-2018)	CT	500	<500	0%	35%	10%
Pumpkins	Kynetec (2014-2018)	IL	4,000	<500	0%	35%	10%
Pumpkins	Kynetec (2014-2018)	MI	3,000	(S)	0%	30%	15%
Pumpkins	Kynetec (2014-2018)	NY	2,000	(S)	0%	30%	10%
Pumpkins	Kynetec (2014-2018)	NC	700	(S)	0%	<2.5%	<1%
Pumpkins	Kynetec (2014-2018)	OH	3,000	(S)	0%	5%	<2.5%
Pumpkins	Kynetec (2014-2018)	PA	3,000	<500	0%	20%	10%
Pumpkins	Kynetec (2014-2018)	TN	<500	(S)	0%	20%	5%
Pumpkins	Kynetec (2014-2018)	VA	1,000	(S)	0%	75%	20%
Pumpkins	Kynetec (2014-2018)	WI	1,000	<500	0%	35%	15%
<i>Pumpkins</i>	Kynetec (2014-2018)	CO, IN, MD, MA, MN, MO, NJ, NM, OR, TX, WA	NR	NR	NR	NR	NR
Squash	Kynetec (2014-2018)	CA	5,000	<500	0%	40%	20%
Squash	Kynetec (2014-2018)	CT	<500	(S)	0%	15%	5%
Squash	Kynetec (2014-2018)	FL	1,000	<500	0%	45%	10%

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Crop Acres Grown†	Avg. Annual Pounds AI Applieda	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Squash	Kynetec (2014-2018)	MI	5,000	<500	0%	25%	15%
Squash	Kynetec (2014-2018)	NY	800	<500	0%	90%	20%
Squash	Kynetec (2014-2018)	OR	1,000	(S)	0%	10%	<2.5%
Squash	Kynetec (2014-2018)	WI	<500	(S)	0%	30%	10%
<i>Squash</i>	Kynetec (2014-2018)	GA, MA, NJ, NC, OH, PA, SC, TN, TX	NR	NR	NR	NR	NR
Watermelons	Kynetec (2014-2018)	CA	10,000	<500	10%	50%	20%
Watermelons	Kynetec (2014-2018)	FL	10,000	<500	0%	35%	15%
Watermelons	Kynetec (2014-2018)	TX	10,000	(S)	0%	30%	10%
<i>Watermelons</i>	Kynetec (2014-2018)	AL, AZ, GA, IN, MD, MS, MO, NC, OK, SC	NR	NR	NR	NR	NR
<i>Other Cucurbits</i>	**	**	**	**	**	**	**
Cucurbits (seed treatment)	+	+	+	+	+	+	+
<i>Cucurbits</i>	Seed Treatment**	**	**	**	**	**	**
Citrus	+	+	+	+	+	+	+
Grapefruit	Kynetec (2014-2018)	FL	40,000	2,000	20%	70%	45%
Grapefruit	Kynetec (2014-2018)	TX	4,000	(S)	0%	15%	<2.5%
Kumquat	CDPR (2013-2017)	CA (74%)	<500	<500	10%	15%	10%
Kumquat	**	<i>other states (26%)</i>	**	**	**	**	**
Lemon	Kynetec (2014-2018)	AZ	2,000	(S)	0%	<2.5%	<1%
Lemon	Kynetec (2014-2018)	CA	50,000	1,000	25%	40%	30%
Lime	CDPR (2013-2017)	CA (77%)	1,000	<500	20%	30%	20%
Lime	**	<i>other states (23%)</i>	**	**	**	**	**
Orange	Kynetec (2014-2018)	CA	200,000	9,000	35%	55%	45%
Orange	Kynetec (2014-2018)	FL	400,000	10,000	20%	45%	25%

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Crop Acres Grown†	Avg. Annual Pounds AI Applieda	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Pomelo	CDPR (2013-2017)	CA (--%)	--	<500	10%	30%	20%
Pomelo	**	other states (--%)	**	**	**	**	**
Tangerine	CDPR (2013-2017)	CA* (86%)	70,000	600	10%	15%	15%
Tangelo	CDPR (2013-2017)	CA (70%)	5,000	<500	15%	35%	30%
Tangelo	**	other states (30%)	**	**	**	**	**
Quince	CDPR (2013-2017)	CA (--%)	--	<500	10%	10%	<2.5%
Quince	**	other states (--%)	**	**	**	**	**
<i>Other Citrus</i>	**	**	**	**	**	**	**
Pome Fruit	+	+	+	+	+	+	+
Apples	Kynetec (2014-2018)	MI	40,000	2,000	40%	70%	55%
Apples	Kynetec (2014-2018)	NY	50,000	2,000	50%	80%	65%
Apples	Kynetec (2014-2018)	NC	3,000	(S)	0%	15%	5%
Apples	Kynetec (2014-2018)	OH	900	(S)	0%	10%	<2.5%
Apples	Kynetec (2014-2018)	PA	20,000	<500	<2.5%	40%	20%
Apples	Kynetec (2014-2018)	VA	10,000	<500	20%	75%	50%
Apples	Kynetec (2014-2018)	WA	100,000	<500	0%	5%	<1%
Apples	Kynetec (2014-2018)	WV	1,000	(S)	0%	100%	20%
<i>Apples</i>	Kynetec (2014-2018)	CA, OR	NR	NR	NR	NR	NR
Pears	Kynetec (2014-2018)	CA	2,000	<500	0%	35%	10%
Pears	Kynetec (2014-2018)	WA	20,000	800	25%	50%	35%
<i>Pears</i>	Kynetec (2014-2018)	OR	NR	NR	NR	NR	NR
<i>Other Pome Fruit</i>	**	**	**	**	**	**	**

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Crop Acres Grown†	Avg. Annual Pounds AI Applieda	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Stone Fruit	+	+	+	+	+	+	+
Cherries	Kynetec (2014-2018)	CA	30,000	<500	0%	15%	10%
Cherries	Kynetec (2014-2018)	MI	40,000	3,000	55%	75%	65%
Cherries	Kynetec (2014-2018)	WA	40,000	<500	<1%	15%	10%
<i>Cherries</i>	Kynetec (2014-2018)	OR	NR	NR	NR	NR	NR
Peaches	Kynetec (2014-2018)	CA	10,000	(S)	0%	<2.5%	<1%
Peaches	Kynetec (2014-2018)	MI	3,000	<500	5%	55%	30%
Peaches	Kynetec (2014-2018)	NY	<500	(S)	0%	50%	10%
Peaches	Kynetec (2014-2018)	PA	5,000	<500	40%	85%	60%
Peaches	Kynetec (2014-2018)	SC	7,000	(S)	0%	40%	15%
<i>Peaches</i>	Kynetec (2014-2018)	AL, CO, GA, IL, NJ, TX, WA	NR	NR	NR	NR	NR
Plums/Prunes	Kynetec (2014-2018)	CA	10,000	(S)	0%	<2.5%	<1%
Apricot	CDPR (2013-2017)	CA* (85%)	10,000	<500	<1%	<2.5%	<1%
Nectarine	CDPR (2013-2017)	CA* (87%)	20,000	<500	#	#	#
<i>Other Stone Fruit</i>	**	**	**	**	**	**	**
Berries and Small Fruit	+	+	+	+	+	+	+
Small Fruit Vine Climbing Subgroup (except Fuzzy Kiwi Fruit and Gooseberry)	+	+	+	+	+	+	+
Grapes	+	+	+	+	+	+	+
Grapes, Raisin	Kynetec (2014-2018)	CA	30,000	(S)	0%	<2.5%	<1%
Grapes, Table	CDPR (2013-2017)	CA* (82%)	900,000	<500	<1%	<2.5%	<1%
Grapes, Wine	Kynetec (2014-2018)	CA	600,000	2,000	<1%	5%	<2.5%
<i>Grapes, Wine</i>	Kynetec (2014-2018)	NY, WA	NR	NR	NR	NR	NR
<i>Other Vine Fruit</i>	**	**	**	**	**	**	**

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Crop Acres Grown†	Avg. Annual Pounds AI Applieda	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Bushberries	+	+	+	+	+	+	+
Blueberries	NASS (2015)	NJ	10,000	(D)	--	--	(D)
Blueberries	NASS (2015)	OR	10,000	<500	--	--	30%
Blueberries	NASS (2015)	WA	10,000	(D)	--	--	(D)
<i>Blueberries</i>	NASS (2015)	GA, MI, NC	NR	NR	NR	NR	NR
<i>Other bushberries</i>	**	**	**	**	**	**	**
Low Growing Berries (except cranberries)	+	+	+	+	+	+	+
Strawberries	Kynetec (2014-2018)	CA	40,000	1,000	20%	50%	35%
Strawberries	Kynetec (2014-2018)	FL	10,000	<500	35%	100%	65%
Strawberries	Kynetec (2014-2018)	NY	<500	<500	0%	20%	5%
<i>Strawberries</i>	Kynetec (2014-2018)	MI, OR, PA, WA	NR	NR	NR	NR	NR
<i>Other low growing berries</i>	**	**	**	**	**	**	**
Caneberries	+	+	+	+	+	+	+
Caneberries	Kynetec (2014-2018)	CA	1,000	(S)	0%	<2.5%	<1%
<i>Caneberries</i>	Kynetec (2014-2018)	OR, WA	NR	NR	NR	NR	NR
<i>Other caneberries</i>	**	**	**	**	**	**	**
Cranberries	**	**	**	**	**	**	**
Tree Nuts	+	+	+	+	+	+	+
Pecans	Kynetec (2014-2018)	GA	20,000	(S)	0%	15%	5%
Pecans	Kynetec (2014-2018)	OK	60,000	<500	0%	<2.5%	<1%
Pecans	Kynetec (2014-2018)	TX	30,000	(S)	0%	<2.5%	<1%
<i>Pecans</i>	Kynetec (2014-2018)	AL, AZ, LA, MN	NR	NR	NR	NR	NR
Pistachios	CDPR (2013-2017)	CA* (97%)	300,000	<500	#	#	#
Walnuts	CDPR (2013-2017)	CA* (99%)	400,000	<500	#	#	#
Almonds	CDPR (2013-2017)	CA* (100%)	1,300,000	<500	#	#	#

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Crop Acres Grown†	Avg. Annual Pounds AI Applieda	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Filberts	Kynetec (2014-2018)	OR	NR	NR	NR	NR	NR
<i>Other Tree Nuts</i>	**	**	**	**	**	**	**
Cereal Grains	+	+	+	+	+	+	+
Barley	**	**	**	**	**	**	**
Cereal Grains (seed treatment)	+	+	+	+	+	+	+
Barley	Seed Treatment**	**	**	**	**	**	**
Corn	+	+	+	+	+	+	+
Field, Corn	Seed Treatment**	**	**	**	**	**	**
Pop, Corn	Seed Treatment**	**	**	**	**	**	**
Sweet, Corn	Seed Treatment**	**	**	**	**	**	**
Rice	Seed Treatment**	**	**	**	**	**	**
Sorghum	Seed Treatment**	**	**	**	**	**	**
Wheat, Spring	Seed Treatment**	**	**	**	**	**	**
Wheat, Winter	Seed Treatment**	**	**	**	**	**	**
<i>Other Cereal Grains</i>	**	**	**	**	**	**	**
Oil Seeds	+	+	+	+	+	+	+
Cotton	Kynetec (2014-2018)	AL	400,000	<500	<1%	5%	<2.5%
Cotton	Kynetec (2014-2018)	AZ	40,000	(S)	0%	<2.5%	<1%
Cotton	Kynetec (2014-2018)	AR	400,000	10,000	20%	75%	40%
Cotton	Kynetec (2014-2018)	CA	100,000	<500	0%	5%	<2.5%
Cotton	Kynetec (2014-2018)	GA	1,000,000	3,000	0%	10%	5%
Cotton	Kynetec (2014-2018)	LA	200,000	2,000	<2.5%	30%	20%
Cotton	Kynetec (2014-2018)	MS	500,000	7,000	10%	45%	25%
Cotton	Kynetec (2014-2018)	MO	300,000	4,000	10%	40%	20%
Cotton	Kynetec (2014-2018)	NC	300,000	800	0%	10%	5%
Cotton	Kynetec (2014-2018)	OK	300,000	<500	0%	<2.5%	<1%

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Crop Acres Grown†	Avg. Annual Pounds AI Applieda	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Cotton	Kynetec (2014-2018)	SC	200,000	600	0%	15%	10%
Cotton	Kynetec (2014-2018)	TN	300,000	7,000	25%	65%	45%
Cotton	Kynetec (2014-2018)	TX	6,100,000	10,000	5%	10%	5%
Cotton	Kynetec (2014-2018)	FL, KS, NC	NR	NR	NR	NR	NR
Oil Seeds (seed treatment)	+	+	+	+	+	+	+
Cotton	Seed Treatment**	**	**	**	**	**	**
Sunflower	Seed Treatment**	**	**	**	**	**	**
Oil Seeds (black mustard seed, borage seed, crambe seed, field mustard seed, flax seed, Indian mustard seed, Indian rapeseed seed, rapeseed seed, and safflower seed) (except sunflower and cotton)	Seed Treatment**	**	**	**	**	**	**
Tropical Fruit	**	**	**	**	**	**	**
Avocado	CDPR (2013-2017)	CA* (89%)	60,000	<500	<1%	<2.5%	<1%
Canistel	**	**	**	**	**	**	**
Mamey Sapote	**	**	**	**	**	**	**
Mango	**	**	**	**	**	**	**
Papaya	**	**	**	**	**	**	**
Sapodilla	**	**	**	**	**	**	**
Star Apple	**	**	**	**	**	**	**
Other Crops	+	+	+	+	+	+	+
Artichokes	Kynetec (2014-2018)	CA	7,000	<500	10%	65%	30%
Hops	**	**	**	**	**	**	**
Mint	**	**	**	**	**	**	**
Tobacco	Kynetec (2014-2018)	KY	80,000	700	5%	15%	10%
Tobacco	Kynetec (2014-2018)	NC	100,000	<500	0%	10%	<2.5%

Thiamethoxam National and State Summary Use and Usage Matrix (10-16-20 (revised 6-3-21))

Crop	Data Source	States with Reported Usage	Avg. Annual Crop Acres Grown†	Avg. Annual Pounds AI Applied ^a	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Tobacco	Kynetec (2014-2018)	TN	3,000	(S)	0%	5%	<1%
Tobacco	Kynetec (2014-2018)	VA	20,000	(S)	0%	10%	5%
<i>Tobacco</i>	Kynetec (2014-2018)	GA, OH, PA, SC	NR	NR	NR	NR	NR
Other Crops	+	+	+	+	+	+	+
Alfalfa	Seed Treatment**	**	**	**	**	**	**
Peanuts	Seed Treatment**	**	**	**	**	**	**

Notes	
Kynetec (YEARS)	Agricultural usage surveyed by market research firm(s).
NASS (YEARS)	Surveyed by United States Department of Agriculture National Agricultural Statistics Service.
CDPR (YEARS)	Surveyed by the California Department of Pesticide Regulation. Percent of crop 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 constituent crops below.
NR	Surveyed by the indicated source in the years listed, but no usage reported.
--	Data unavailable.
**	Site not surveyed at national level .
(D)	Data withheld by NASS to avoid disclosing data for individual operations.
(S)	Insufficient number of reports to establish an estimate.
Z	Defined by NASS as "Less than half of the unit shown".
#	Data withheld due to likely underestimate caused by reporting issue.

Table 3. National Thiamethoxam Non-Agricultural Usage by Crop. Data averaged over reported years. Values are rounded according to rounding rules provided in the Introduction.

Crop	Survey Status	Avg. Annual Pounds AI Applied ^a	Max Labeled Rate ^c (lb AI/A)
Ornamentals (including those grown in greenhouses, field nurseries, christmas tree plantations, nonbearing fruit/nut trees, and residential/commercial landscapes)	+	+	All: 1.31 lb/a; Trees: 0.002 lb/ft tree or ; 0.002 lb/in DBH (Diameter at Breast Height)
Ornamental Turf Grass (including sod farms, golf courses, residential lawns, athletic fields)	**	**	All: 1.31 lb/a
Building Premises and Contents (including structural/perimeter pest control (indoors and outdoors in warehouses, schools, apartments, etc.) and indoor environments for the control of bed bugs)	+	+	Outdoor: 0.009 lb/1,000 sq ft [0.391 lb/a]; Indoor: 0.01 lb/gal crack and crevice spray; 0.04 lb/gal voids
Food Handling Establishments	+	+	Indoor: 0.01 lb/gal crack and crevice spray; 0.04 lb/gal voids
Food Processing plants	Kline (2014) ^d	<500	Indoor: 0.01 lb/gal crack and crevice spray; 0.04 lb/gal voids
Food Warehouses	Kline (2014) ^d	<500	Indoor: 0.01 lb/gal crack and crevice spray; 0.04 lb/gal voids
Restaurants (eating establishments)	Kline (2014) ^d	<500	Indoor: 0.01 lb/gal crack and crevice spray; 0.04 lb/gal voids
Institutional Kitchens	Kline (2014) ^d	<500	Indoor: 0.01 lb/gal crack and crevice spray; 0.04 lb/gal voids
Livestock Pens and Poultry Houses	Kline (2015) ^e , NMRD (2017) ^f	<500	Indoor and Outdoor: 0.05 lb/1,000 sq ft [2.2 lb/a]
Transportation Vehicles	**	**	Indoor: 0.01 lb/gal crack and crevice spray

Notes	
Kline (YEAR)	Non-agricultural usage surveyed by market research firm(s).
NMRD (YEAR)	Non-agricultural usage surveyed by market research firm(s).
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 currently registered labels as of August 2020.
+	See constituent use sites below.
[]	Bracketed rates are calculated from small area rates.
**	Site not surveyed at national level
d	Kline 2014. Pest Control in Food-Handling Establishments 2014: U.S. Market Analysis and Opportunities - All Food Handling by End Use Segment Data Accessed August 2020.
e	Kline 2016. Pest Control in Production Animal Health 2016: U.S. Market Analysis and Opportunities. Accessed August 2020.
f	Non-agricultural usage surveyed by market research firm(s). Accessed August 2020.