

USE TRENDS OF BIOPESTICIDES.

Table 19: *The reported pounds of pesticides used that are biopesticides. Biopesticides include microorganisms and naturally occurring compounds, or compounds similar to those found in nature that are not toxic to the target pest (such as pheromones). Use includes both agricultural and reportable nonagricultural applications. Data are available at <ftp://transfer.cdpr.ca.gov/pub/outgoing/pur/data/ >.*

AI	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
(3S, 6R)-3-METHYL-6-ISOPROPENYL-9-DECEN-1-YL ACETATE	<1	None	None	<1	None	<1	None	<1	7	25
(3S, 6S)-3-METHYL-6-ISOPROPENYL-9-DECEN-1-YL ACETATE	<1	None	None	<1	None	<1	None	<1	7	25
(E)-4-TRIDECEN-1-YL-ACETATE	80	96	None	None	None	23	None	None	None	<1
(E)-5-DECEN-1-OL	None	None	None	<1	<1	<1	1	8	1	2
(E)-5-DECENOL	1	1	<1	2	3	1	33	8	95	5
(E)-5-DECENYL ACETATE	4	5	2	10	7	4	25	134	84	48
(E,E)-9, 11-TETRADECADIEN-1-YL ACETATE	11	2	6	3	4	3	3	1	12	2
(E,Z)-7,9-DODECADIEN-1-YL ACETATE	None	50	249	270	24	24	None	None	None	None
(S)-KINOPRENE	276	277	191	300	285	311	429	327	253	377
(S)-VERBENONE	None	None	None	55	None	None	781	633	28	5
(Z)-11-HEXADECEN-1-YL ACETATE	681	None	1	None	None	None	None	<1	98	34
(Z)-11-HEXADECENAL	None	None	None	None	None	None	1	1	98	33
(Z)-4-TRIDECEN-1-YL-ACETATE	3	3	None	None	None	1	None	None	None	<1
(Z)-9-DODECENYL ACETATE	<1	<1	<1	<1	<1	<1	<1	None	None	None
(Z,E)-7,11-HEXADECADIEN-1-YL ACETATE	3	2	None	None	None	None	None	None	None	None
(Z,Z)-11,13-HEXADECADIENAL	None	<1	571	271	321	619	969	1,072	1,086	1,404
(Z,Z)-7,11-HEXADECADIEN-1-YL ACETATE	3	3	None	None	None	None	None	None	None	None
1,4-DIMETHYLNAPHTHALENE	1,544	1,152	544	893	1,163	1,085	891	660	133	836
1,7-DIOXASPIRO-(5,5)-UNDECANE	<1	<1	<1	<1	1	<1	1	None	None	None
1-METHYLCYCLOPROPENE	<1	<1	<1	1	1	<1	1	1	1	1
1-NAPHTHALENEACETAMIDE	32	25	20	20	19	22	18	14	11	17
2,4-DECADIENOIC ACID, ETHYL ESTER, (2E,4Z)-	None	None	None	None	None	<1	4	3	3	2
2-METHYL-1-BUTANOL	None	None	None	None	<1	<1	<1	<1	1	<1
3,13 OCTADECADIEN-1-YL ACETATE	None	1	12	None	<1	None	<1	142	None	None
3,7-DIMETHYL-6-OCTEN-1-OL ACETIC ACID	5	23	12	28	54	42	49	72	95	98
AGROBACTERIUM RADIOBACTER	142	124	507	28	230	271	137	2,561	64	59
AGROBACTERIUM RADIOBACTER, STRAIN K1026	1	<1	<1	<1	34	<1	<1	<1	None	None
ALLYL ISOTHIOCYANATE	None	None	None	<1	None	None	None	<1	None	None

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AI	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
ALMOND, BITTER	<1	<1	<1	<1	<1	<1	<1	None	<1	<1
AMINO ETHOXY VINYL GLYCINE HYDROCHLORIDE	543	1,024	1,194	1,368	1,444	1,757	2,011	1,380	1,296	2,532
AMMONIUM BICARBONATE	<1	9	14	7	51	34	42	None	None	None
AMMONIUM NITRATE	39,544	40,065	52,070	66,520	86,022	88,037	91,564	89,252	86,910	78,171
AMMONIUM NONANOATE	None	None	None	None	1,937	3,131	3,399	27,356	19,625	17,272
AMPELOMYCES QUISQUALIS	<1	<1	None	None	None	None	None	None	None	None
ASPERGILLUS FLAVUS STRAIN AF36	None	None	<1	4	4	8	9	14	15	16
AUREOBASIDIUM PULLULANS STRAIN DSM 14940	None	None	None	None	81	458	356	1,095	2,493	3,947
AUREOBASIDIUM PULLULANS STRAIN DSM 14941	None	None	None	None	81	458	356	1,095	2,493	3,947
AZADIRACHTIN	2,502	1,885	2,215	3,417	3,387	4,323	5,108	4,774	4,883	4,387
BACILLUS AMYLOLIQUEFACIENS STRAIN D747	None	None	None	869	84,957	177,589	131,295	209,773	395,702	272,675
BACILLUS AMYLOLIQUEFACIENS STRAIN MBI 600	None	None	None	<1	<1	None	None	15	79	275
BACILLUS FIRMUS (STRAIN I-1582)	None	None	None	None	None	42	190	170	212	160
BACILLUS MYCOIDES ISOLATE J	None	None	None	None	None	None	None	None	1,085	568
BACILLUS POPILLIAE	None	None	None	None	<1	<1	<1	<1	None	<1
BACILLUS PUMILUS, STRAIN QST 2808	6,987	6,783	7,558	6,752	6,245	7,957	8,123	7,889	9,239	7,551
BACILLUS SPHAERICUS 2362, SEROTYPE H5A5B, STRAIN ABTS 1743 FERMENTATION SOLIDS, SPORES AND INSECTICIDAL TOXINS	18,178	13,013	10,602	9,123	10,500	10,499	12,357	13,122	16,362	10,652
BACILLUS SUBTILIS GB03	<1	<1	<1	1	1	2	3	3	4	3
BACILLUS SUBTILIS STRAIN IAB/BS03	None	None	None	None	None	None	None	None	None	5
BACILLUS SUBTILIS VAR. AMYLOLIQUEFACIENS STRAIN FZB24	None	None	None	2	94	119	178	6	<1	None
BACILLUS THURINGIENSIS (BERLINER)	4	6	26	18	11	4	29	21	14	17
BACILLUS THURINGIENSIS (BERLINER), SUBSP. AIZAWAI, GC-91 PROTEIN	27,539	20,397	11,666	17,042	13,265	18,776	16,771	18,882	34,097	44,961
BACILLUS THURINGIENSIS (BERLINER), SUBSP. AIZAWAI, SEROTYPE H-7	894	824	814	714	359	333	184	73	118	48
BACILLUS THURINGIENSIS (BERLINER), SUBSP. ISRAELENISIS, SEROTYPE H-14	17,202	11,401	22,640	12,632	9,269	11,779	15,761	15,839	17,733	14,132

Table 19: (continued) *The reported pounds of pesticides used that are biopesticides. Biopesticides include microorganisms and naturally occurring compounds, or compounds similar to those found in nature that are not toxic to the target pest (such as pheromones).*

AI	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BACILLUS THURINGIENSIS (BERLINER), SUBSP. KURSTAKI STRAIN SA-12	12,128	7,424	4,689	10,361	8,246	7,971	8,579	9,804	2,218	562
BACILLUS THURINGIENSIS (BERLINER), SUBSP. KURSTAKI, SEROTYPE 3A,3B	402	150	244	234	53	41	18	34	76	83
BACILLUS THURINGIENSIS (BERLINER), SUBSP. KURSTAKI, STRAIN EG 2348	118	66	478	44	500	514	344	645	396	8
BACILLUS THURINGIENSIS (BERLINER), SUBSP. KURSTAKI, STRAIN EG2371	None	<1	<1	None	None	None	None	None	None	None
BACILLUS THURINGIENSIS (BERLINER), SUBSP. KURSTAKI, STRAIN SA-11	80,565	75,074	115,679	52,421	77,932	80,401	80,953	74,963	96,271	118,790
BACILLUS THURINGIENSIS (BERLINER), SUBSP. SAN DIEGO	<1	<1	None	None	None	None	None	None	None	None
BACILLUS THURINGIENSIS SUBSPECIES KURSTAKI STRAIN BMP 123	118	14	None	None	None	None	None	None	None	None
BACILLUS THURINGIENSIS SUBSPECIES KURSTAKI, GENETICALLY ENGINEERED STRAIN EG7841 LEPIDOPTERAN ACTIVE TOXIN	42	1	75	298	116	65	3	43	3	1
BACILLUS THURINGIENSIS VAR. KURSTAKI STRAIN M-200	<1	None	None	None	None	None	<1	None	<1	1
BACILLUS THURINGIENSIS VAR. KURSTAKI, GENETICALLY ENGINEERED STRAIN EG7826	95	None	None	528	None	None	None	7	None	15
BACILLUS THURINGIENSIS, SUBSP. AIZAWAI, STRAIN ABTS-1857	31,043	26,250	24,314	30,648	29,863	49,186	55,914	72,261	92,917	88,345
BACILLUS THURINGIENSIS, SUBSP. AIZAWAI, STRAIN SD-1372, LEPIDOPTERAN ACTIVE TOXIN(S)	243	130	88	1	18	6	43	13	6	16
BACILLUS THURINGIENSIS, SUBSP. ISRAELENIS, STRAIN AM 65-52	53,778	71,050	52,787	173,153	49,682	42,763	46,599	70,128	61,729	66,598

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AI	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BACILLUS THURINGIENSIS, SUBSP. KURSTAKI, STRAIN ABTS-351, FERMENTATION SOLIDS AND SOLUBLES	69,620	96,988	83,048	95,294	83,409	111,388	95,431	117,645	134,263	120,926
BACILLUS THURINGIENSIS, SUBSP. KURSTAKI, STRAIN HD-1	3,747	3,589	2,549	3,187	2,323	1,928	1,916	441	646	536
BACILLUS THURINGIENSIS, VAR. KURSTAKI DELTA ENDOTOXINS CRY 1A(C) AND CRY 1C (GENETICALLY ENGINEERED) ENCAPSULATED IN PSEUDOMONAS FLUORESCENS (KILLED)	28	<1	<1	4	None	<1	None	<1	None	5
BACTERIOPHAGE ACTIVE AGAINST XANTHOMONAS CAMPESTRIS PV. VESICATORIA AND PSEUDOMONAS SYRINGAE PV. TOMATO	None	None	<1	<1	<1	<1	None	None	<1	None
BALSAM FIR OIL	None	<1	None	<1	<1	<1	1	<1	None	<1
BEAUVERIA BASSIANA HF 23	None	None	None	None	None	None	None	37	55	67
BEAUVERIA BASSIANA STRAIN GHA	378	357	622	1,220	1,796	2,749	3,511	2,850	5,688	7,031
BETA-CONGLUTIN	None	None	None	None	None	None	6,762	6,099	7,383	4,314
BUFFALO GOURD ROOT POWDER	1	11	None	1	25	5	6	8	3	73
BURKHOLDERIA SP STRAIN A396 CELLS AND FERMENTATION MEDIA	None	None	None	None	None	2,829	58,593	53,655	115,528	216,044
BUTYL MERCAPTAN	None	None	None	<1	None	None	None	None	None	None
CANOLA OIL	17	131	26	15	28	61	97	247	286	2,175
CAPSICUM OLEORESIN	2	4	4	12	10	27	92	125	203	635
CARBON DIOXIDE	7,727	17,550	21,239	30,826	15,739	18,297	17,675	25,366	26,359	36,307
CASTOR OIL	21	7	<1	2	<1	8	<1	4	None	3
CHENOPODIUM AMBROSIODES NEAR AMBROSIODES	20,367	10,336	7,897	10,231	20,261	17,504	12,828	10,207	8,300	387
CHROMOBACTERIUM SUBTSUGAE STRAIN PRAA4-1	None	None	None	1,169	30,262	46,419	45,894	31,445	36,385	42,397
CINNAMALDEHYDE	None	None	1	None	None	None	None	None	59	1
CITRAL	None	<1	None	None	None	None	None	None	None	None
CITRIC ACID	55,421	74,232	90,830	94,968	128,798	114,942	126,174	142,111	136,398	152,231
CLARIFIED HYDROPHOBIC EXTRACT OF NEEM OIL	106,271	115,931	71,139	77,254	119,298	197,351	222,694	166,062	173,094	137,951
CODLING MOTH GRANULOSIS VIRUS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
CONIOTHYRIUM MINITANS STRAIN CON/M/91-08	127	80	176	245	611	641	786	657	665	424

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AI	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
CORN SYRUP	2,891	3,026	4,377	4,766	3,216	3,344	4,342	4,850	14,767	22,753
COTTONSEED OIL	79,268	153,038	318,868	114,610	105,083	132,464	87,451	55,082	45,678	35,072
COYOTE URINE	None	<1	1	2	3	9	6	3	6	3
CYTOKININ (AS KINETIN)	None	None	<1	<1	<1	<1	<1	<1	<1	<1
DIALLYL DISULFIDE	None	None	None	None	None	None	None	103	94	None
DIHYDRO-5-HEPTYL-2(3H)-FURANONE	<1	<1	None	None	None	None	None	None	None	None
DIHYDRO-5-PENTYL-2(3H)-FURANONE	<1	<1	None	None	None	None	None	None	None	None
E,E-8,10-DODECADIEN-1-OL	4,978	1,942	1,376	1,995	2,276	1,395	1,445	1,079	5,420	1,209
E-11-TETRADECEN-1-YL ACETATE	312	100	172	133	142	61	73	32	294	40
E-8-DODECENYL ACETATE	606	898	195	283	273	224	769	390	1,712	270
ENCAPSULATED DELTA ENDOTOXIN OF BACILLUS THURINGIENSIS VAR. KURSTAKI IN KILLED PSEUDOMONAS FLUORESCENS	18	None	1	<1	None	None	None	None	None	None
ESSENTIAL OILS	<1	<1	<1	1	<1	15	12	20	24	11
ETHYLENE	None	97	1,018	954	1,359	1,333	1,683	1,299	1,248	953
EUCALYPTUS OIL	None	22	<1	None	None	None	None	None	None	None
EUGENOL	None	None	None	1	<1	1	<1	1	<1	<1
FARNESOL	3	10	5	11	21	17	20	29	38	39
FENUGREEK	17	1	5	8	2	1	7	None	<1	10
FERRIC SODIUM EDTA	None	None	1,979	6,351	5,855	6,790	8,000	12,449	12,329	8,082
FISH OIL	None	None	1,657	5,466	4,114	None	None	1,078	None	None
FORMIC ACID	280	223	241	634	66	337	2,606	1,243	984	953
FOX URINE	None	<1	<1	2	1	4	3	1	4	2
GAMMA AMINOBUTYRIC ACID	177	118	40	133	28	15	15	None	None	None
GARLIC	36	423	29	1,905	2,832	1,392	667	849	529	1,126
GERANIOL	5	23	12	28	54	42	49	72	95	98
GERMAN COCKROACH PHEROMONE	<1	<1	<1	<1	<1	<1	None	<1	<1	<1
GIBBERELLINS	22,917	21,536	22,687	23,214	41,103	27,422	27,409	23,142	27,103	28,619
GIBBERELLINS, POTASSIUM SALT	None	<1	<1	5	None	None	None	None	1	None
GLIOCLADIUM VIRENS GL-21 (SPORES)	356	945	649	1,957	3,538	2,989	4,586	4,395	2,829	2,707
GLUTAMIC ACID	177	118	40	133	28	15	15	None	None	None
GS-OMEGA/KAPPA-HXTX-HV1A (VERSITUDE PEPTIDE)	None	None	None	None	None	None	None	<1	None	3
HARPIN PROTEIN	14	13	11	1	1	<1	None	<1	<1	None
HEPTYL BUTYRATE	None	<1	<1	<1	14	6	4	3	13	4
HYDROGEN PEROXIDE	21,750	69,179	59,387	36,302	47,236	49,826	74,419	130,417	312,058	345,059
HYDROPRENE	1,664	6,382	11,261	3,948	7,352	5,734	6,456	3,920	3,155	2,913
IBA	6	7	9	12	15	14	13	10	19	17

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AI	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
INDOLE	None	None	None	None	<1	None	<1	<1	<1	<1
IRON HEDTA	None	None	None	43	92	120	91	170	213	113
IRON PHOSPHATE	1,435	2,351	2,874	2,327	2,119	2,007	2,071	2,250	3,477	2,835
KAOLIN	2,376,194	3,040,482	1,686,874	2,007,204	2,473,768	2,854,542	3,411,740	3,591,408	3,193,218	3,268,360
KINOPRENE	3	3	9	3	8	33	17	10	1	<1
LACTIC ACID	None	None	None	None	None	None	2	3	12	10
LACTOSE	9,191	7,984	9,285	6,554	7,143	6,616	7,855	8,501	8,889	7,903
LAGENIDIUM GIGANTEUM (CALIFORNIA STRAIN)	None	None	None	5	None	None	None	None	None	None
LAURYL ALCOHOL	432	736	497	755	449	293	501	319	2,566	309
LAVANDULYL SENECIOATE	462	437	6,120	586	477	3,166	507	1,029	1,150	2,282
LIMONENE	56,495	56,406	62,925	74,369	61,293	68,137	72,906	67,550	92,320	106,938
LINALOOL	62	1,104	95	136	72	62	93	15	11	2
MARGOSA OIL	None	579	7,886	9,106	12,189	22,585	26,019	32,493	25,028	13,553
MENTHOL	None	5	<1	None	20	None	None	None	None	None
METARHIZIUM ANISOPLIAE STRAIN F52	None	None	None	116	89	121	20	54	2	1
METARHIZIUM ANISOPLIAE, VAR. ANISOPLIAE, STRAIN ESF1	None	<1	<1	None	None	None	None	None	None	None
METHOPRENE	1,568	1,492	1,809	1,304	1,350	3,556	1,390	1,271	1,064	763
METHYL ANTHRANILATE	312	343	448	300	1,237	634	672	789	1,118	958
METHYL EUGENOL	None	None	5	None	9	None	None	126	386	1,149
METHYL NONYL KETONE	<1	<1	None	None	<1	<1	<1	<1	<1	1
METHYL SALICYLATE	<1	None	None	None	None	None	None	None	<1	<1
MUSCALURE	20	15	15	16	13	17	23	29	44	60
MYRISTYL ALCOHOL	88	150	102	155	91	60	102	65	520	63
MYROTHECIUM VERRUCARIA, DRIED FERMENTATION SOLIDS & SOLUBLES, STRAIN AARC-0255	23,273	22,813	27,757	25,556	26,005	17,675	30,810	26,033	22,923	23,021
N6-BENZYL ADENINE	168	217	129	168	183	184	230	221	161	198
NAA	3	5	4	9	15	12	18	11	100	11
NAA, AMMONIUM SALT	1,203	976	839	1,400	1,056	945	996	125	181	335
NAA, ETHYL ESTER	3	6	23	4	3	5	3	38	10,502	13,162
NAA, POTASSIUM SALT	None	None	None	None	53	15	2	934	1,017	607
NAA, SODIUM SALT	2	None	None	None	2	1	<1	<1	None	None
NATAMYCIN	None	None	None	None	<1	1	1	1	<1	None
NEROLIDOL	6	24	12	28	54	42	49	72	95	98
NITROGEN, LIQUEFIED	2,181	135	216	74	594	6	None	None	None	None
NONANOIC ACID	9,063	17,322	17,939	18,200	21,545	17,530	14,482	13,301	14,610	12,755
NONANOIC ACID, OTHER RELATED	477	912	944	958	1,134	923	762	700	769	671

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NOSEMA LOCUSTAE SPORES	<1	<1	<1	1	<1	<1	<1	1	<1	<1
OIL OF ANISE	None	None	<1	<1	<1	<1	<1	<1	<1	<1
OIL OF BLACK PEPPER	1	<1	<1	<1	1	1	<1	<1	<1	<1
OIL OF CEDARWOOD	None	<1	None	None	None	None	<1	<1	None	None
OIL OF CITRONELLA	None	5	46	None	None	1	5	<1	1	<1
OIL OF GERANIUM	None	<1	None	None	None	None	None	None	None	None
OIL OF JOJOBA	3,418	4,176	1,232	507	135	376	44	19	2	None
OIL OF LEMON EUCALYPTUS	None	None	<1	3	None	None	None	None	None	None
OIL OF ORANGE	None	None	None	None	None	None	198	386	1,360	479
OIL OF PEPPERMINT	None	<1	None	None	None	None	None	None	None	None
OXYPURINOL	None	None	None	None	None	<1	None	None	None	None
PAECILOMYCES FUMOSOROSEUS AOPKA STRAIN 97	None	None	None	507	3,302	5,951	5,624	8,947	8,659	5,100
PANTOEA AGGLOMERANS STRAIN E325, NRRL B-21856	33	4	1	1	1	None	None	None	None	None
PHENYLETHYL PROPIONATE	500	822	423	535	701	712	185	96	140	34
PHOSPHORIC ACID, MONOPOTASSIUM SALT	12	6,984	9,079	3,927	1,918	374	9,585	15,002	11,445	10,125
PIPERINE	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
POLYHEDRAL OCCLUSION BODIES (OB'S) OF THE NUCLEAR POLYHEDROSIS VIRUS OF HELICOVERPA ZEA (CORN EARWORM)	1	1	51	6	1	2	4	20	41	41
POLYOXIN D, ZINC SALT	397	1,296	3,513	4,738	6,731	7,412	8,613	10,306	10,431	11,333
POTASSIUM BICARBONATE	180,858	275,648	358,255	228,900	239,609	223,547	318,099	462,830	488,686	349,173
POTASSIUM PHOSPHITE	141,395	287,730	279,896	281,601	390,300	708,940	666,576	952,539	1,167,365	1,203,727
POTASSIUM SILICATE	231	39	1,412	988	5,407	23,582	36,525	25,901	33,039	13,821
POTASSIUM SORBATE	<1	65	None	None	None	None	None	None	None	None
PROPYLENE GLYCOL	25,792	54,233	48,494	58,461	86,296	90,353	87,136	87,865	103,903	107,437
PROPYLENEGLYCOL MONOLAUATE	7	12	None	None	203	44	None	None	None	None
PSEUDOMONAS FLUORESCENS, STRAIN A506	328	217	274	59	92	270	87	123	111	113
PSEUDOMONAS SYRINGAE, STRAIN ESC-10	None	<1	None	None	3	None	None	None	None	None
PURPUREOCILLIUM LILACIUNUM STRAIN 251	None	252	515	840	4,073	5,031	6,408	6,273	5,463	3,805
PUTRESCENT WHOLE EGG SOLIDS	143	3	1	1	1	1	1	6	5	6
PYTHIUM OLIGANDRUM DV74	None	None	<1	<1	<1	None	None	None	None	None
QST 713 STRAIN OF DRIED BACILLUS SUBTILIS	16,203	21,464	23,960	23,504	24,590	20,969	20,916	21,063	21,952	21,153

Table 19: (continued) *The reported pounds of pesticides used that are biopesticides. Biopesticides include microorganisms and naturally occurring compounds, or compounds similar to those found in nature that are not toxic to the target pest (such as pheromones).*

AI	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
QUILLAJA	410	682	1,081	785	1,040	775	829	1,027	1,385	1,445
REYNOUTRIA SACHALINENSIS	179	8,996	14,844	14,803	15,354	16,105	18,358	23,508	23,610	19,946
S-ABSCISIC ACID	66	864	1,852	2,651	2,131	2,382	2,114	2,192	2,220	1,861
S-METHOPRENE	3,285	3,921	2,313	2,324	2,331	2,524	2,781	3,220	3,133	4,069
SAWDUST	<1	1	None	4	4	None	None	1	None	None
SESAME OIL	851	1,309	1,327	15	<1	None	None	None	None	2
SILVER NITRATE	None	<1	<1	<1	None	None	None	<1	<1	None
SODIUM BICARBONATE	27	3	515	146	44	479	420	13,604	3,679	3
SODIUM CARBONATE	114,653	101,714	298,763	300,693	295,762	463,448	244,233	261,347	165,621	329,252
PEROXYHYDRATE										
SODIUM CHLORIDE	3	2	169	111	119	211	216	128	81	110
SODIUM LAURYL SULFATE	146	96	458	884	431	570	1,749	507	1,200	1,329
SORBITOL OCTANOATE	2,007	None	35	None	None	None	None	None	<1	None
SOYBEAN OIL	28,801	24,110	24,109	22,022	45,973	59,297	69,771	84,295	80,999	82,505
STREPTOMYCES GRISEOVIRIDIS STRAIN K61	<1	<1	<1	<1	10	11	18	5	4	2
STREPTOMYCES LYDICUS WYEC 108	1	2	1	2	3	3	3	4	3	2
SUCROSE OCTANOATE	4,003	1,128	230	55	188	98	203	29	7	None
SUGAR	993	1,122	448	1,240	51	16	60	667	4	20
THYME	775	1,311	665	844	1,135	1,150	257	122	181	25
THYME OIL	None	None	None	None	None	None	1	3	12	7
THYMOL	1,675	1,539	265	181	398	314	278	570	564	667
TRICHODERMA HARZIANUM RIFAI STRAIN KRL-AG2	11	504	129	158	186	86	65	112	63	86
TRICHODERMA ICC 012 ASPERELLUM	None	None	13	19	43	2	2	9	4	1
TRICHODERMA ICC 080 GAMSII	None	None	13	19	43	2	2	9	4	1
TRIMETHYLAMINE	None	None	None	None	<1	None	<1	<1	<1	<1
ULOCLADIUM OUDEMANSII (U3 STRAIN)	None	None	None	None	29	792	516	155	34	2,131
VANILLIN	3	<1	1	1	<1	<1	1	None	<1	2
VEGETABLE OIL	196,078	323,401	514,884	276,278	315,218	267,446	485,628	517,951	666,055	824,829
XANTHINE	None	None	None	None	None	<1	None	None	None	None
YEAST	926	470	1,165	818	80	32	86	14	4	12
YUCCA SCHIDIGERA	169	634	1,649	7,147	12,327	5,652	2,565	3,130	2,173	5,733
Z,E-9,12-TETRADECADIEN-1-YL ACETATE	6,149	1	7	6	14	122	20	10	21	62
Z-11-TETRADECEN-1-YL ACETATE	9	9	4	8	8	<1	<1	<1	<1	<1
Z-8-DODECENOL	106	157	34	48	44	38	98	60	201	47
Z-8-DODECENYL ACETATE	9,262	13,964	3,010	4,005	3,467	3,248	4,461	4,300	6,457	4,138
TOTAL	3,916,545	5,149,768	4,432,836	4,295,143	5,084,339	6,167,980	6,882,941	7,686,714	8,117,822	8,375,195

Table 19: (continued) *The reported pounds of pesticides used that are biopesticides. Biopesticides include microorganisms and naturally occurring compounds, or compounds similar to those found in nature that are not toxic to the target pest (such as pheromones).*

AI	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
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