

APPENDIX A: Tribufos Usage Data from the California Department of Pesticide Regulation Pesticide Use Reporting (CDPR PUR, 1999-2006) Database.

Purpose

- (1) Average annual pounds applied **across eight years (1999-2006)**,
- (2) Average annual area treated **across eight years (1999-2006)**,
- (3) Average, Maximum, 95th Percentile, and 99th Percentile for the application rate **across all observations** for eight years (1999-2006).

Notes on Calculating Average Annual Values

When calculating Average annual pounds applied and Average annual area treated (but not Application rates) across eight years, zeros are added when no usage or area is reported for a certain year. Records with missing values for a certain year (i.e., unknown non-zero values) remain as missing.

Application Rate Estimation

Application rate is calculated as "pounds of active ingredient applied" divided by "acres treated"

Data Source

Pesticide Use Report Data, California Department of Pesticide Regulation

<http://calpip.cdpr.ca.gov/cfdocs/calpip/prod/main.cfm>

Data Description

Years: 1999 through 2006

58 counties for each year

Date Created:

16-Apr-08

Estimation Steps for Pesticide Use 1999_2006 and Total Annual Usage

- 1. Combine pesticide usage data for 58 counties for all eight years.**
- 2. Keep information only on 13 chemicals of interest.**
- 3. Application Rate: Calculate across all observations for eight years for each chemical-county-site-unit treated combination:**
 - Average, Maximum, 95th Percentile, 99th Percentile for application rates, and the Number of records.
 - The number of records represents the number of non-missing records used to calculate average/max/percentile values.
- 4. Pounds Applied and Area Treated:** Calculate for each year and chemical-county-site-unit treated combination: Total pounds applied, Total area treated, and the Number of records.
 - The number of records represents the number of non-missing records used to calculate average pounds applied and average area treated.
- 4a. Combine estimated values for all eight years.**
- 4b. Calculate eight-year Average annual pounds applied and Average annual area treated.**
- 5. Populate chemical, county, and site names.**

Estimation Steps for Aggregated Usage

- 1. Combine pesticide usage data for 58 counties for all eight years.**
- 2. Keep information only on 13 chemicals of interest.**
- 3. Application Rate: Calculate across all observations for eight years for each chemical-county-unit treated combination:**
 - Average, Maximum, 95th Percentile, 99th Percentile for application rates, and the Number of records.
 - The number of records represents the number of non-missing records used to calculate average/max/percentile values.
- 4. Pounds Applied and Area Treated:** Calculate for each year and chemical-county-unit treated combination: Total pounds applied, Total area treated, and the Number of records.

The number of records represents the number of non-missing records used to calculate average pounds applied and average area treated.

4a. Combine estimated values for all eight years.

4b. Calculate **eight-year** Average annual pounds applied and Average annual area treated.

5. Populate chemical and county names.

Output variables

Pesticide Use_1999_2006

Active Ingredient, County, Site Name, Average Annual Pounds Applied, Number Records Pounds, Average Annual Area Treated, Unit Area Treated, Number Records Area, Average Application Rate, 95th Percentile Application Rate, 99th Percentile Application Rate, Maximum Application Rate, Number Records Rate.

Total Annual Usage (same as above plus additional variables)

Active Ingredient, County, Site Name, Total Pounds 1999, Total Pounds 2000, Total Pounds 2001, Total Pounds 2002, Total Pounds 2003, Total Pounds 2004, Total Pounds 2005, Total Pounds 2006, Average Annual Pounds Applied, Number Records Pounds, Total Area 1999, Total Area 2000, Total Area 2001, Total Area 2002, Total Area 2003, Total Area 2004, Total Area 2005, Total Area 2006, Average Annual Area Treated, Unit Area Treated, Number Records Area, Average Application Rate, 95th percentile Application Rate, 99th percentile Application Rate, Maximum Application Rate, Number Records Rate.

Aggregated_Usage

Active Ingredient, County, Average Annual Pounds Applied, Number Records Pounds, Average Annual Area Treated, Unit Area Treated, Number Records Area, Average Application Rate, 95th Percentile Application Rate, 99th Percentile Application Rate, Maximum Application Rate, Number Records Rate.

Notes on the Output

Missing values are presented as blanks.

Error Notes

Errors identified in the process of estimating outliers by California Department of Pesticide Regulation are treated as follows:

Application rate, area treated and pounds applied values are replaced with missing values when the "error" file indicated a potential error:

"Pounds of AI per area treated is greater than 200 for non-fumigants or 1,000 for fumigants, or pounds of product per area treated is greater than 50 times the median rate for this product on this commodity."

"Pounds of product divided by the area treated is greater than an outlier limit set by a neural network procedure".

Errors are reported for all eight years.

The "outliers" files for 2001 is in a different format than that for other years. Error data were brought to the same format for processing.

TABLE A.1: Total Annual Usage for Tribufos Use on Cotton Per California County.

County	Total Pounds 1999	Total Pounds 2000	Total Pounds 2001	Total Pounds 2002	Total Pounds 2003	Total Pounds 2004	Total Pounds 2005	Total Pounds 2006
FRESNO	156,004	193,563	126,633	97,801	116,196	89,333	38,879	32,828
KINGS	79,764	91,571	45,767	30,555	32,220	26,649	23,131	20,272
MERCED	46,772	45,992	45,869	36,578	48,416	33,020	13,866	12,031
KERN	36,705	38,775	14,775	6,309	8,414	6,354	7,643	1,046
RIVERSIDE	9,045	5,440	7,948	9,241	12,403	10,732	8,707	5,338
MADERA	7,521	9,480	7,026	3,601	4,592	4,450	3,200	2,935
TULARE	5,175	5,237	2,017	1,861	7,044	3,883	1,559	425
IMPERIAL	3,138	4,807	6,764	3,979	4,038	5,023	2,034	2,257
SAN BERNARDINO	879	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COLUSA	300	943	80	0.00	0.00	0.00	0.00	0.00
GLENN	51	96	0.00	0.00	0.00	0.00	0.00	0.00
BUTTE	0.00	14	20	0.00	0.00	0.00	0.00	0.00
SAN JOAQUIN	0.00	0.00	11	0.00	0.00	244	0.00	0.00
YOLO	0.00	845	151	0.00	0.00	0.00	0.00	0.00
TOTAL	345,35	396,765	257,062	189,927	233,323	179,689	99,019	77,133

TABLE A.2. Total Annual Area Treated for Tribufos Use on Cotton Per California County.

County	Total Area 1999	Total Area 2000	Total Area 2001	Total Area 2002	Total Area 2003	Total Area 2004	Total Area 2005	Total Area 2006
FRESNO	96,632	121,250	79,289	62,551	66,450	55,687	25,753	19,809
KINGS	58,018	67,488	35,010	21,910	24,563	21,720	15,753	13,421
MERCED	34,378	32,053	34,470	26,648	36,143	25,534	9,916	7,000
KERN	30,312	34,722	13,922	5,019	6,707	5,334	5,892	800
RIVERSIDE	10,255	10,269	11,130	6,623	13,040	11,530	8,355	5,062
MADERA	5,454	6,213	4,662	2,236	2,899	3,198	2,625	1,713
TULARE	3,920	4,109	1,534	1,510	5,715	3,756	1,367	344
IMPERIAL	5,127	5,332	6,793	2,770	2,937	6,579	4,065	3,508
SAN BERNARDINO	635	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COLUSA	187	588	43	0.00	0.00	0.00	0.00	0.00
GLENN	50	65	0.00	0.00	0.00	0.00	0.00	0.00
BUTTE	0.00	15	20	0.00	0.00	0.00	0.00	0.00
SAN JOAQUIN	0.00	0.00	30.00	0.00	0.00	195	0.00	0.00
YOLO	0.00	571	102	0.00	0.00	0.00	0.00	0.00
TOTAL	244,968	282,674	187,004	129,266	158,454	133,533	73,726	51,658

TABLE A.3. Usage Data for Tribufos Use on Cotton Per California County (Aggregated Data from 1999-2006).

County	AVG Annual Pounds Applied	Number Records Pounds	AVG Annual Area Treated	Unit Area Treated	Number Records Area	AVG Application Rate	95 Percentile Application Rate	99 Percentile Application Rate	MAX Application Rate	Number Records Rate
ALAMEDA	40	1	0.00		0					0
BUTTE	4	2	4	Acres	2	0.97	0.99	0.99	0.99	2
COLUSA	165	12	102	Acres	12	1.70	1.85	1.85	1.85	12
FRESNO	106,405	5,822	65,928	Acres	5,822	1.61	1.87	4.44	15.19	5,822
GLENN	18	2	14	Acres	2	1.25	1.48	1.48	1.48	2
IMPERIAL	4,005	670	4,639	Acres	670	0.86	1.69	4.23	4.48	670
KERN	15,003	1,418	12,839	Acres	1,418	1.27	1.54	1.85	4.36	1,418
KINGS	43,756	2,062	32,248	Acres	2,062	1.39	1.85	1.87	11.98	2,062
MADERA	5,351	447	3,625	Acres	447	1.42	1.85	2.00	8.53	447
MERCED	35,318	3,622	25,768	Acres	3,622	1.40	1.85	1.89	4.44	3,622
RIVERSIDE	8,612	2,047	9,537	Acres	2,047	0.86	1.78	1.85	6.81	2,047
SAN BERNARDINO	110	10	79	Acres	10	1.41	1.51	1.51	1.51	10
SAN JOAQUIN	32	4	28	Acres	4	0.92	1.48	1.48	1.48	4
SUTTER	39	1	14	Acres	1	2.77	2.77	2.77	2.77	1
TULARE	3,402	293	2,783	Acres	293	1.25	1.66	1.85	1.85	293
YOLO	131	9	91	Acres	9	1.42	1.48	1.48	1.48	9