

PESTICIDE USE ANNUAL REPORT

Data Access, References, and Definitions Guide



California Department of Pesticide Regulation
P.O. Box 4015 Sacramento, CA 95812-4015



**STATE OF CALIFORNIA
GAVIN NEWSOM, GOVERNOR**

**CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
YANA GARCIA, SECRETARY FOR ENVIRONMENTAL
PROTECTION**

**DEPARTMENT OF PESTICIDE REGULATION
JULIE HENDERSON, DIRECTOR**

January 2023



This report may not be reproduced for any profit-making purposes. For information on obtaining electronic data files, see [How to Access Pesticide Use Report Data](#)

This report is available on [DPR's Web site](http://www.cdpr.ca.gov/docs/pur/purmain.htm) <www.cdpr.ca.gov/docs/pur/purmain.htm>.

If you have questions concerning this report, [email DPR's PUR program](mailto:PUR.Inquiry@cdpr.ca.gov)

<PUR.Inquiry@cdpr.ca.gov>

Contents

Table of Contents

How to Access Pesticide Use Report Data	1
Data Definitions	2
Terminology, Comments, and Clarifications of Data	8
Product, active, and inert ingredients	8
Number of applications	8
Cumulative Acres Treated.....	9
Types of Pesticide Use Reported.....	9
Agricultural (Ag) versus Nonagricultural (NonAg) Pesticide Uses.....	10
Site Codes.....	12
Unregistered Use	13
Adjuvants.....	13
Over-counting Pesticide Use	13
Acronyms and Abbreviations	16

How to Access Pesticide Use Report Data

The Pesticide Use Report (PUR) data can be accessed in multiple ways:

1. [California Pesticide Information Portal](http://calpip.cdpr.ca.gov/main.cfm) (CalPIP) at <<http://calpip.cdpr.ca.gov/main.cfm>>
Use this online query tool to retrieve PUR data. The most current three years of CalPIP data are refreshed from the internal database at least once a year to incorporate any updates to the PUR database that were submitted after the Pesticide Use Annual Report was published.
2. [Pesticide Use Annual Report Summaries by Year](https://www.cdpr.ca.gov/docs/pur/purmain.htm) at <<https://www.cdpr.ca.gov/docs/pur/purmain.htm>> includes:
 - a. Pesticide Use Annual Reports and Highlights Reports
 - b. Tables of data summarized or ranked
 - c. County Summary Reports
3. Pesticide Use Report Data files for download:
 - a. Files with the following pesticide use report data can be downloaded from the Department's [File Site](https://files.cdpr.ca.gov/pub/outgoing/pur_archives/) at <https://files.cdpr.ca.gov/pub/outgoing/pur_archives/>:
 - i. *Pesticide Use Annual Report Data*: The PUR data used in the Pesticide Use Annual Reports from 1989 to current. The files are in text (comma-delimited) format and do not include updates that occur after the respective year's Pesticide Use Annual Report was released.
 - ii. *Pesticide Use Data 1974 - 1989*: Pesticide use data from 1974 to 1989 vary by year in the type and quality of data collected and are kept in a separate database from the more standardized "full-use" data collected since 1990. They are available as text files.
 - iii. *Microfiche Pesticide Use Data 1970 - 1973*: Files of summarized pesticide use data from 1970 to 1973 are available as PDF scans of microfiche.
 - b. Starting with the year 2016, the data from each figure or table in the Pesticide Use Annual Report and other tables available on the yearly Pesticide Use Report Summary web pages can be found at the [text file data file site](https://files.cdpr.ca.gov/pub/outgoing/pur/data/) <<https://files.cdpr.ca.gov/pub/outgoing/pur/data/>>.
4. [Email DPR's PUR program](mailto:PUR.Inquiry@cpdr.ca.gov) <PUR.Inquiry@cpdr.ca.gov> with your data request.

Please direct any questions regarding the reports and tables on the Pesticide Use Report Summary web pages to the Department of Pesticide Regulation, Integrated Pest Management Branch, P.O. Box 4015, Sacramento, California 95812-4015, or you may request copies of the data by [emailing DPR's PUR program](mailto:PUR.Inquiry@cpdr.ca.gov) <PUR.Inquiry@cpdr.ca.gov>.

Data Definitions

Table 1 lists the data fields available through the pesticide use report (PUR) database and a selection of data fields from DPR’s Product Label database that is typically used in conjunction with the PUR database.

Table 1. Commonly used data fields in the DPR’s Pesticide Use Report and Product Label databases. Data field names are those used in the publicly available CalPIP query tool. Data field names in parentheses are from the internal database, which may be found on data downloaded from the [File Site](#) or from requests to <PUR.inquiry@cdpr.ca.gov> for data. Data fields not available on CalPIP may be requested.

Data Field	Definition
Amount Planted (acre_planted)	<p>The area of an entire field or site upon which some portion received a pesticide application. See unit planted as this value is not always acres. Also referred to as Acre Planted or Area Planted.</p> <p><i>NOTE: Amount planted values in some counties may describe the area of an entire ranch (sometimes with multiple crops) rather than the field - this possibility is more likely for rotational crops than for permanent crops such as orchards. As of today, DPR is unable to identify which records are reporting “ranch” acreage and which are reporting field acreage of a specific crop. This data field is therefore of uncertain quality.</i></p>
Amount Treated (acre_treated)	<p>The area of a field or site to which a pesticide was applied.</p> <p><i>If 100 percent of the field or site was treated, then the amount treated will be the same value as the amount planted. The amount treated should always be less than or equal to the amount planted. Be sure to always check the unit treated field, since the amount treated value may not be acres. Also referred to as Acre Treated or Area Treated.</i></p>
Aerial Ground Indicator (aer_gnd_ind)	<p>Indicates whether the product was applied by air, ground, or other application method:</p> <ul style="list-style-type: none"> • A: Aerially applied • G: Ground (ground-based equipment) applied • O: Other application methods (paint, ear tag, dip, injection, chemigation, etc.) • F: Field fumigation (required to be reported starting 2008/2009)

Data Field	Definition
Amount Product Applied (amt_prd_used)	Amount of product applied in weight or volume (see unit of measure field).
Application Count (applic_cnt) Not available in CalPIP.	<p>Ag applications: each PUR equals a single application of a single product. The system automatically inserts a '1' for the applic_cnt data field.</p> <p>NonAg applications: each PUR is a monthly summary of the total number of applications of a single product used by an applicator during the reporting month. Data quality for reported NonAg application counts is uncertain due to variation in how applicators define a single application.</p> <ul style="list-style-type: none"> • <i>Structural (NonAg) applications: January 1, 2015, Senate Bill 1244 (Chapter 560, Statutes of 2014) became effective. It amended section 8505.17(c) of the Business and Professions Code (BPC) to eliminate the requirement that monthly summary structural PUR's include the number of applications made.</i>
Date (applic_dt)	<p>Date that the Ag pesticide application was completed. Not required for NonAg applications.</p> <p><i>The application date value for NonAg monthly summary PURs generally has a default day of the month of 01 or 28 – note that days of the month are meaningless default values for NonAg PURs since they are summaries of all the applications that took place over the reporting month.</i></p>
Application Time (applic_time) Not available in CalPIP.	Time that the agricultural pesticide application was completed. Not required for NonAg applications.
Chemical Code (chem_code)	Identifies the active ingredient (AI) contained in the applied product. The chemical code is sequentially assigned for each new active ingredient during the registration process.
Chemical Name (chemname)	The common chemical name for each active ingredient. Usually as listed on the product label.

Data Field	Definition
COMTRS	<p>An identification code for the approximately 1x1 square mile sections from the Public Land Survey System.</p> <p><i>The PUR does not have exact addresses or locations of pesticide applications; therefore the COMTRS is the finest spatial resolution available in the PUR. It is not reported for NonAg monthly summary reports. The COMTRS data field of NonAg PURs will either be blank or will have only the two digit county code.</i></p> <p><i>The COMTRS acronym stands for</i></p> <ul style="list-style-type: none"> • CO: County code • M: Base line and meridian • T: Township and township direction • R: Range and range direction • S: Section <p><i>The COMTRS can be used to map pesticide use at the section level using shapefiles or KMZ files located on the GIS Shapefile webpage: <http://www.cdpr.ca.gov/docs/emon/grndwtr/gis_shapefiles.htm></i></p>
County Name (coname)	County of pesticide application.
County Code (county_cd)	County code established by numbering an alphabetized list of California's 58 counties.
Outlier (error_code)	<p>The outlier data field identifies the PUR as having a pesticide use value high enough to be a statistical outlier compared to other similar values.</p> <p><i>An error code (not available on CalPIP) identifies a record with a potential outlier or other error which can be identified using the Error Descriptions field.</i></p>
Fumigation Code (fume_cd) Not available in CalPIP.	Code that links to a description of fumigation method, required starting in 2008.
Fumigation Method (fume_method) Not available in CalPIP.	Description of fumigation method, required starting in 2008 for fumigation applications in five “nonattainment” areas (NAA) that do not meet air quality standards for pesticide volatile organic compounds (VOCs)s: San Joaquin Valley NAA, Sacramento Metro NAA, South Coast NAA, Southeast Desert NAA, and Ventura NAA (see NAA maps < https://www.cdpr.ca.gov/docs/emon/vocs/voc_areas_affected.pdf >.

Data Field	Definition
Grower ID (grower_id)	<p>Number assigned to a grower or property operator by the County Agricultural Commissioner (CAC). Also known as the permit number or operator identification number.</p> <p><i>The number is composed of:</i></p> <ul style="list-style-type: none"> • Reporting county code: two digits representing the county where the pesticide application occurred. • Application year: the last two digits of the year when the application occurred • Home county code: two digits representing the county where the owner/operator resides. • Permit number: an arbitrary five-digit number assigned to the owner/operator. <p><i>The last seven digits of the grower ID may be used to identify an individual owner/operator. DPR does not collect names and addresses; that information is only available from the CAC. The grower ID plus the site location ID can be used together to identify a unique agricultural parcel or field.</i></p>
Pounds Chemical Applied (lbs_ai, lbs_chm_used)	<p>Pounds of the active ingredient (AI) in the applied product. This value is calculated by multiplying the pounds of product used by the percent AI in the product.</p> <p><i>Products with liquid formulations are first converted to pounds of product used and then to pounds of AI used.</i></p>
Pounds Product Applied (lbs_prd_used)	<p>Pounds of product applied for each application is calculated based on the product's formulation (liquid or dry), specific gravity (if applicable), unit of measure, and amount of product reported used.</p>
License Number (license_no)	<p>Pest Control Operator (PCO) license number.</p>
Month in Year or Application Month (month)	<p>Month of application.</p> <p><i>Application Month is the name of the month while Month in Year is formatted as a number between 1 and 12.</i></p>
Product Chemical Percent (prodchem_pct)	<p>The percentage of AI found in the product as shown on the product label.</p> <p><i>To determine the pounds of each AI, the percentage must first be formatted as a decimal (e.g. a value of 50 should be changed to 0.5) and then multiplied by the pounds of product (Pounds Product Applied).</i></p>

Data Field	Definition																
Product Number (prodno)	A code used by DPR to identify products.																
Product Name (product_name)	<p>The name of the product taken from the registered product label, which may have been modified by DPR's Registration Branch to ensure uniqueness.</p> <p><i>These values come from DPR's label database and are not included in the original PURs.</i></p>																
Record ID (record_id, Ag/NonAg)	<p>The Record ID identifies the agency that loaded the PUR, and whether the record is an Ag PUR or NonAg PUR.</p> <p><i>Currently, only record IDs A, B, and C are used since CACs currently receive all PUR information and forward the required information to DPR. However, historically, input agencies included:</i></p> <ul style="list-style-type: none"> • <i>DPR: Department of Pesticide Regulation</i> • <i>CAC: County Agricultural Commissioner's office</i> • <i>PIA: Prison Industries Authority</i> <table border="1" data-bbox="440 1066 1492 1220"> <thead> <tr> <th><i>Record ID</i></th> <th><i>DPR</i></th> <th><i>CAC</i></th> <th><i>PIA</i></th> </tr> </thead> <tbody> <tr> <td><i>Daily Production Ag</i></td> <td><i>1</i></td> <td><i>A</i></td> <td><i>E</i></td> </tr> <tr> <td><i>Monthly Production Ag</i></td> <td><i>4</i></td> <td><i>B</i></td> <td><i>F</i></td> </tr> <tr> <td><i>Non-production Ag Summary</i></td> <td><i>2</i></td> <td><i>C</i></td> <td><i>G</i></td> </tr> </tbody> </table> <p><i>Ag PUR Record IDs = 1, A, E, 4, B, F</i> <i>NonAg PUR Record IDs = 2, C, G</i></p> <p><i>Note: Both Daily Production Ag and Monthly Production Ag are categorized as "Ag" PURs. Non-production Ag Summary PURs, also called MSPURs or NonAg, are monthly summaries of all NonAg applications in a county for a single product by an applicator.</i></p> <p><i>See Agricultural (Ag) versus Nonagricultural (NonAg) Pesticide Uses section for more detailed information on how Ag and NonAg PURs are defined.</i></p>	<i>Record ID</i>	<i>DPR</i>	<i>CAC</i>	<i>PIA</i>	<i>Daily Production Ag</i>	<i>1</i>	<i>A</i>	<i>E</i>	<i>Monthly Production Ag</i>	<i>4</i>	<i>B</i>	<i>F</i>	<i>Non-production Ag Summary</i>	<i>2</i>	<i>C</i>	<i>G</i>
<i>Record ID</i>	<i>DPR</i>	<i>CAC</i>	<i>PIA</i>														
<i>Daily Production Ag</i>	<i>1</i>	<i>A</i>	<i>E</i>														
<i>Monthly Production Ag</i>	<i>4</i>	<i>B</i>	<i>F</i>														
<i>Non-production Ag Summary</i>	<i>2</i>	<i>C</i>	<i>G</i>														
Registration Number (show_regno)	<p>The California Registration Number of the product.</p> <p><i>Consists of a four-part key composed of the manufacturer firm number, label sequence number, revision number, and the registration firm number.</i></p>																

Data Field	Definition
Site Code (site_code)	A code used by DPR to identify sites of pesticide applications. Also known as the Commodity Code.
Site Location ID (site_loc_id)	<p>A code assigned by the CAC on the use permit which indicates a particular location (field) where an application may occur.</p> <p><i>It was designed to uniquely identify geographic field locations, but is currently assigned at the discretion of individual CACs and growers and therefore may not consistently refer to the same geographic field location from year to year or between seasons in the case of seasonal crop rotations.</i></p>
Site Name (site_name)	<p>Identifies the name of the site (i.e. strawberries, wine grapes, tomatoes, etc.). Also known as commodity name, although there are non-agricultural sites as well, such as structural, landscape maintenance, etc.</p> <p><i>Note that crop names on PURs with nonagricultural record IDs are likely either post-harvest treatments (ex: commodity fumigation in an industrial setting) or treatments to NonAg parts of the crop's field, such as irrigation ditches.</i></p>
Unit of Product Applied (unit_of_meas)	<p>Refers to the unit of measure in conjunction with the reported amount of product used. Possible values:</p> <ul style="list-style-type: none"> • OZ: Ounces • LB: Pounds • PT: Pints • QT: Quarts • GA: Gallons • ML: Milliliters • LI: Liters • GR: Grams • KG: Kilograms
Unit Planted (unit_planted)	<p>Refers to the type of units planted in conjunction with the reported acre planted. Possible values:</p> <ul style="list-style-type: none"> • A: Acres • S: Square feet • C: Cubic feet • K: Thousand cubic feet • U: Miscellaneous units such as bins, tree holes, bunches, pallets, etc.

Data Field	Definition
Unit Treated (unit_treated)	<p>Refers to the type of units treated in conjunction with the reported acres treated field. Possible values:</p> <ul style="list-style-type: none"> • A: Acres • S: Square feet • C: Cubic feet • K: Thousand cubic feet • P: Pounds • T: Tons • U: Miscellaneous units such as bins, tree holes, bunches, pallets, etc.
Use Number (use_no)	<p>System assigned sequential number to uniquely identify a pesticide product use record within a year.</p> <p><i>The use number, in conjunction with the year, can be helpful in identifying a single PUR when that PUR has more than one row of data associated with it, as can be the case when a product has more than one AI. It is therefore an important tool to prevent over-counting in tables of PUR data where information may be repeated for each active ingredient (see Over-counting Pesticide Use section for more information). Use number values are only unique within a calendar year – use numbers with the same value in a different year are not related to each other in any way.</i></p>

Terminology, Comments, and Clarifications of Data

When analyzing the data contained in the Pesticide Use Annual Report and other tables on the Pesticide Use Report Summary webpages, it is important to consider the following characteristics of the PUR database information.

Product, active, and inert ingredients

A pesticide product is the complete, finished mixture of active and inert (inactive) ingredients that are combined into a specific formulation to control specified pests. An active ingredient (AI) is a component of a pesticide product that prevents, destroys, repels, or mitigates a pest, or is a plant regulator, defoliant, desiccant, or nitrogen stabilizer. There can be more than one AI in a product. Inert ingredients are all the other ingredients of the product which are not intended to directly target the pest but rather to enhance product performance, application, or worker safety. PURs include the pesticide product registration number. DPR then identifies the AIs of these products for trend analysis. Inert ingredients are confidential.

Number of applications

The number of applications is only included in the Pesticide Use Annual Report for agricultural applications (“Ag”). Ag PURs must include certain information for each application by law. Non-agricultural applications (“NonAg”) are reported in a monthly summary PUR and are only required to

include monthly totals for all applications of a pesticide product, site or commodity, and applicator within a county.

Furthermore, the definition of a single application for NonAg PUR purposes has varied widely, with some applicators defining a city block as a single application, while other applicators might count each treated patch of weeds on the block as a single application. In addition, the application count for pesticides used on structural sites is no longer required to be reported due to an amendment to section 8505.17 of the Business and Professions Code (BPC) brought about by the passage of Senate Bill 1244 (Chapter 560, Statutes of 2014). Since the number of applications in the NonAg monthly summary PURs is not consistently reported, it is not included in the Pesticide Use Annual Report¹.

Note that in tables of the Pesticide Use Annual Report, the total number of agricultural applications for the site or commodity may not equal the sum of all applications of the listed AIs. The discrepancies occur when application totals include pesticide products that have more than one AI. A product comprised of two AIs will result in the single application being assigned to both AIs. Hence, summing the agricultural applications for these two AIs would result in an incorrect total of two applications. The total applications value at the bottom of each commodity section removes the possibility of over-counting applications for products with more than one AI, and is therefore a more accurate value. For more information on over-counting pesticide use data, see the [Over-counting Pesticide Use section](#).

Cumulative Acres Treated

The cumulative acres treated is the sum of the acres treated with an AI (applications reported in square feet are converted to acres). The cumulative acres treated for a crop may be greater than the planted acres of the crop since this measure accounts for a field being treated with the same AI more than once in a year. For example, if a 20-acre field is treated three times in a calendar year with an AI, the cumulative acres treated would be reported as 60 acres while the acres planted would be reported as 20 acres.

It is important, however, to be aware of the potential to over-count acreage when summing cumulative acres for products that have more than one AI. If a 20-acre field is treated with a product that contains three different pesticide AIs, the PUR record will correctly show that the *product* was applied to 20 acres, but that 20 acre value will also be attributed to each of the three AIs in any AI summary reports. Adding these values across the AIs results in a total of 60 acres treated instead of the 20 acres actually treated. For more information on over-counting pesticide use data, see [Over-counting Pesticide Use section](#).

Types of Pesticide Use Reported

The following specific pesticide uses are required to be reported to the CAC who, in turn, reports a subset of the data to DPR:

- Production of any agricultural commodity except livestock (where livestock is defined in FAC section 18663 as “any cattle, sheep, swine, goat, or any horse, mule or other

¹ NonAg PURs were included in the Pesticide Use Annual Reports before 1997, however each NonAg monthly summary PUR was counted as one application.

- equine, whether live or dead”),
- Treatment of postharvest agricultural commodities,
- Landscape maintenance in parks, golf courses, cemeteries, and similar sites defined in the Food and Agricultural Code as agricultural use,
- Roadside and railroad rights-of-way,
- Poultry and fish production,
- Application of a restricted material,
- Application of a pesticide listed in regulation as having the potential to pollute ground water when used outdoors in industrial and institutional settings, and
- Application by licensed pest control operators, including agricultural and structural applicators and maintenance gardeners.

Agricultural (Ag) versus Nonagricultural (NonAg) Pesticide Uses

Pesticide Use Report (PUR) classification: for PUR purposes, pesticide use is grouped into two classes: Ag PURs and NonAg PURs. Note PUR classifications for Ag and NonAg PURs differ from the State classification for agricultural and non-agricultural use, which incorporates an additional “non-production agriculture” distinction. PUR classifications are reflective of the differing reporting requirements and should be considered independent of the use classification distinctions.

- **Ag PURs:** Registered pesticides applied for the "production of an agricultural commodity,” where an agricultural commodity is defined as any unprocessed product of farms, ranches, nurseries, or forests, except for livestock, poultry, and fish (3 CCR section 6000).
 - Examples of Ag PURs:
 - Pesticides applied to food and fiber crops in the field,
 - Agricultural soil or burrow fumigations,
 - Applications to nursery plants grown in greenhouses or raised in outdoor containers.
- **NonAg PURs:** Applications of registered pesticides that are not for the production of an agricultural commodity.
 - Examples of NonAg PURs:
 - Commodity fumigations at a processing facility,
 - Structural applications,
 - Landscape maintenance applications, including parks, cemeteries, golf courses, etc.,
 - Applications to rights-of-way and irrigation ditches,
 - Applications to uncultivated non-agricultural ground,
 - Vector control applications (Note that although vector control applications are technically exempt from PUR reporting, however PURs

are submitted based on a memorandum of understanding [MOU] with the California Department of Public Health [CDPH]),

- Applications for the animal-husbandry of bees, poultry, and fish.

- **Not required to be reported:**

- Residential applications by homeowners or residents (unless producing an agricultural commodity for sale),
- Applications of pesticides for, veterinary purposes,
- Industrial and institutional applications, unless restricted materials or pesticides known to contaminate ground water are applied by licensed professionals,
- Any pesticide used on livestock as defined by FAC section 18663 (Livestock is defined as “any cattle, sheep, swine, goat, or any horse, mule or other equine, whether alive or dead”).

The PUR classifications can be identified by the record ID, which reflects the types of information that are collected:

- **Ag PURs:** Each Ag PUR represents a single pesticide application, and can be identified in the PUR data by the record ID A, B, 1, E, 4, and F (See [“Record ID” Data Definition](#)). Ag PURs contain very detailed information compared to NonAg PURS including:
 - Date and time of application,
 - Geographic location including the county, meridian, township, range, and section,
 - Operator identification number or permit number - An operator identification number or permit number is issued by CAC to property operators. These numbers are needed to report pesticide use and, for permit numbers, to purchase restricted-use pesticides. DPR combines the reporting county code, the application year, the home county code, and the operator ID or permit number to form a data field called the “Grower ID,”
 - Operator name and address (this information is not submitted to DPR),
 - Site identification number - A site identification code must be assigned to each location or field where pesticides will be used for production of an agricultural commodity. This alphanumeric code is also recorded on any restricted material permit the grower obtains for the location,
 - Commodity, crop, or site treated,
 - Acres planted and treated,
 - Application method (e.g., by air, ground, or other means),
 - Fumigation methods - Since 2008, fumigation applications in nonattainment areas that do not meet federal air quality standards for pesticide VOC emissions

must be identified along with details on fumigation methods (for example, shallow shank injection with a tarp). This information allows DPR to estimate pesticide VOC emissions, which contribute to the formation of atmospheric ozone, an important air pollutant.

- Product name, U.S. EPA Registration Number (or the California Registration Number if the product is an adjuvant), and the amount of product applied.
- **NonAg PURs** are monthly summaries of all the applications of a single pesticide product, identified by record ID C, 2, and G ([See “Record ID” Data Definition](#)). NonAg PURs only include the month and county where the applications took place, rather than the date, time, and square mile location. Most NonAg PURs are not required to report acres treated or planted. Other data fields for NonAg PURs include:
 - Pesticide product name.
 - Product registration number,
 - Amount used of product over entire month,
 - Number of applications (except for structural applications, which were exempted from reporting number of applications in 2015),
 - Application site (e.g., rights-of-way, structural),
 - Month of application (rather than date and time), and
 - County (rather than square mile section location).

Site Codes

The site code refers to the site, commodity, or crop of the pesticide application. It is often referred to as the commodity code, although there are non-commodity site codes as well, such as a structural site code used for pesticide applications to buildings and other structures. DPR uses its [product label database](http://www.cdpr.ca.gov/docs/label/labelque.htm) <www.cdpr.ca.gov/docs/label/labelque.htm> to verify that products listed in PURs are registered for use on the reported site.

Certain commodities or sites may have more than one associated site code if different production methods or uses of the commodity result in different pesticide use. For example, greenhouse and nursery operations are divided into six different site codes:

1. Greenhouse-grown cut flowers or greens,
2. Outdoor-grown cut flowers or greens,
3. Greenhouse-grown plants in containers,
4. Outdoor-grown plants in container/field-grown plants,
5. Greenhouse-grown transplants/propagative material, and
6. Outdoor-grown transplants/propagative material.

Tomatoes and grapes are also separated into further subcategories because of public and processor interest in differentiating pesticide use. Tomatoes are assigned codes to differentiate between fresh market and processing categories. Grapes are assigned separate codes to differentiate table grapes and raisins from wine grapes.

Unregistered Use

The PUR database may contain records of pesticide use on a commodity or site for which the pesticide is not currently registered. Unregistered uses that are not detected by the error-checking process may be due to an error in the DPR product label database, where the product incorrectly lists a commodity or site as being registered. Other unregistered uses may be flagged as errors by the validation procedures, but left unchanged in the database.

The error-checking process does not check whether the product was registered at the time of application. It is therefore possible that an application flagged as an error due to a recent change in registration may have been legally applied at the time of application. In addition, the law sometimes allows the use of existing stocks of a pesticide product following its withdrawal from the market by the manufacturer, or suspension or cancellation by regulatory authorities, since the safest way to dispose of small quantities of pesticides is often to use them as they were intended.

Finally, some pesticide products do not list specific sites or commodities on their labels as they are designed to target specific pests across all sites, such as some soil fumigants, certain pre-plant herbicides, and rodenticides. In these cases, reporting an application of one of these types of pesticides on a specific commodity or site can result in an error. In 2015, an option was added in CalAgPermits that allows the user to designate any application as “pre-plant” and enter the commodity or site without generating any error messages.

Adjuvants

Use data on spray adjuvants (e.g., emulsifiers, wetting agents, foam suppressants, and other efficacy enhancers) were not reported before full-use reporting was required in 1990. Adjuvants are exempt from federal registration requirements but must be registered as pesticides in California. Examples of adjuvants include many alkyl groups and some petroleum distillates. Adjuvant product formulations are considered proprietary and are therefore confidential, however pesticide use totals for adjuvant AIs are included in the Pesticide Use Annual Report.

Over-counting Pesticide Use

Pesticide products may be composed of one or more AIs (plus any confidential inert ingredients). The PUR database includes information related to both the product and the AIs. Different types of analyses will use different subsets of information on the product, the AI, or both. Depending on the data subset chosen for analysis, one can unintentionally over-count pesticide use if the following three criteria are **all** true:

- **Criteria 1:** The chosen subset of PUR data includes products with more than one AI.
- **Criteria 2:** The chosen subset of PUR data includes both product and AI information.
- **Criteria 3:** The analysis sums treated or planted acres, pounds or amount of product, or number of applications.

Over-Counting Example: The following examples (Tables 2 and 3) show two different hypothetical pesticide use analyses of a fictitious product, “Generic Bug Killer,” which has two AIs: “chem1” and “chem2.” Both analyses sum pesticide use variables for the same three fictitious PUR records, however they use slightly different subsets of information from the PUR database – Table 2 has seven columns while Table 3 has 9 columns. The second analysis, shown in Table 3, over-counts certain pesticide use variables due to the two additional data columns (“AI” and Lbs AI”).

The first example (Table 2) does not meet all three criteria listed above, so it does not over-count pesticide use. Although Table 2 has PUR data for a product with two AIs (criteria 1) and is summing acres treated, product pounds, and applications (criteria 3), it does not include any information about “chem1” and “chem2,” the two AIs (criteria 2). Since the second criteria is not met, the sums of acres treated (“Acres”), pounds of product (“Lbs Prod”), and number of applications (“Apps”) are correct.

Table 2. Example of three PUR records for a fictitious product (Generic Bug Killer) with two AIs. Summing acres treated (Acres), pounds of product applied (Lbs Prod), or number of applications (Apps) from this table would be correct since the table does not contain AI information.

Year	Use no	Product	Acres	Units	Lbs Prod	Apps
2010	13322	Generic Bug Killer	5	A	20	1
2010	16609	Generic Bug Killer	10	A	30	1
2010	16610	Generic Bug Killer	15	A	40	2
Correct Totals:			30	A	90	4

Table Column Definitions:

Year: The calendar year of the pesticide application(s)

Use no: System assigned sequential number to uniquely identify a pesticide use report within a year

Product: The name of the pesticide product

Acres: the amount treated: The area of a field or site to which a pesticide was applied

Units: Acres or other unit reported in conjunction with the amount treated data field

Lbs Prod: Pounds product applied – the pounds of the pesticide product used

Apps: the number of pesticide applications reported in the pesticide use report

In the second example (Table 3), there are two additional columns: the AI name (“AI”) and the pounds of AI (“Lbs AI”). The addition of AI information satisfies criteria 2. Now all three criteria are fulfilled and over-counting becomes an issue for acres treated, pounds of product, and number of applications. Although Table 3 shows the same three PUR records as Table 2 (as identified by unique year - use number combinations), there are now six table rows instead of three because each PUR record has a row for each of the two AIs, “chem1” and “chem2.” The values for Year, Use no, Product, Acres, Units, Lbs Prod, and Apps are repeated in both rows of each PUR record. Summing acres treated (“Acres”), product amount (“Lbs Prod”), or number of applications (“Apps”) from Table 3 now results in doubled amounts. However, summing the total pounds of AI (“Lbs AI”) is correct.

Table 3. Example of three PUR records for a fictitious product (Generic Bug Killer) with two AIs. Summing acres treated (Acres), product amount (Lbs Prod), or number of applications (Apps) from this table would be incorrect since the table contains AI information and the product has two AIs. However, summing the total pounds of AI (“Lbs AI”) is correct.

Year	Use no	Product	Acres	Units	Lbs Prod	Apps	AI	Lbs AI
2010	13322	Generic Bug Killer	5	A	20	1	chem1	5
2010	13322	Generic Bug Killer	5	A	20	1	chem2	10
2010	16609	Generic Bug Killer	10	A	30	1	chem1	7.5
2010	16609	Generic Bug Killer	10	A	30	1	chem2	15
2010	16610	Generic Bug Killer	15	A	40	2	chem1	10
2010	16610	Generic Bug Killer	15	A	40	2	chem2	20
Incorrect Totals:			60	A	180	8	Correct total:	67.5

See Table 2 for definitions of the first seven columns.

AI: The common chemical name for each active ingredient (AI) - the AI name

Lbs AI: Pounds of the AI in the applied pesticide product

To avoid over-counting, it is important to identify individual PUR records by the unique combination of year and use number assigned to the record and be aware of whether or not any data values are being repeated for PUR records that span multiple rows before performing any aggregations.

Acronyms and Abbreviations Appendix

Table 4. Definitions of commonly used acronyms and abbreviations found in the reports and tables located on the Pesticide Use Report Summary webpages.

Acronym or Abbreviation	Definition
A	Acres
Ag	Refers to production agricultural PURs
AI	Active Ingredient
C	Cubic feet
CAC	California Agricultural Commissioner
CalPIP	California Pesticide Information Portal
CDA	California Department of Agriculture
CDFA	California Department of Food and Agriculture
COMTRS	An identification code for the approximately 1x1 square mile sections from the Public Land Survey System
DPR	California Department of Pesticide Regulation
FAC	Food and Agricultural Code
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FQPA	Food Quality Protection Act
GA	Gallons
GR	Grams
ID	Identification (usually as part of a reference code such as the Grower ID or the Site Location ID)
K	Thousand cubic feet
KG	Kilograms
LB	Pounds
LI	Liters
ML	Milliliters
MSPUR	Monthly Summary Pesticide Use Report
NAA	Nonattainment areas – geographic regions that do not meet certain air quality standards
NASS	National Agricultural Statistics Service
NonAg	Refers to all PURs that are not production agricultural (Ag) PURs
OZ	Ounces
P	Pounds
PCO	Pest Control Operator
PPE	Personal protective equipment
PT	Pints

Acronym or Abbreviation	Definition
PUR	Pesticide Use Report
QT	Quarts
S	Square feet
T	Tons
U	Miscellaneous units such as bins, tree holes, bunches, pallets, etc.
U.S. EPA	United States Environmental Protection Agency
USFDA	U.S. Food and Drug Administration
UC	University of California
USDA	U.S. Department of Agriculture
VOC	Volatile Organic Compound



Pesticide Use Annual Report References and Definitions Guide

Copyright January 2023 – All Rights Reserved

Editors: Kimberly Steinmann, Larry Wilhoit, Alejandro Merchan, Leslie Talpasanu
Published by the California Department of Pesticide Regulation
Integrated Pest Management Branch
Aimee Norman, Branch Chief

Photographs and graphic visuals were created by DPR staff unless otherwise noted.

Find us on [Facebook](http://www.facebook.com/CaPesticideRegulation) at <<http://www.facebook.com/CaPesticideRegulation>>

Follow us on [Twitter](https://twitter.com/CA_Pesticides) at <https://twitter.com/CA_Pesticides>

Follow us on [LinkedIn](https://www.linkedin.com/company/california-department-of-pesticide-regulation) at <<https://www.linkedin.com/company/california-department-of-pesticide-regulation>>

Watch us on [Youtube](http://www.youtube.com/CaliforniaPesticides) at <<http://www.youtube.com/CaliforniaPesticides>>