

Ventura County Grand Jury 2018 - 2019



Final Report

Pesticide Monitoring Near Schools and Day-Care Centers

April 25, 2019

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Pesticide Monitoring Near Schools and Day-Care Centers

Summary

The 2018-2019 Ventura County Grand Jury (Grand Jury) conducted a study of Ventura County (County) government monitoring of pesticide, herbicide and fumigant agricultural use in close proximity to school and day-care campuses, measuring the effectiveness of implementation of recent regulation.

The Grand Jury concluded that the Ventura County Agricultural Commissioner (VCAC) and the California Department of Pesticide Regulation (CDPR), by implementation of regulations, since 2018 has been effective in reducing exposure of students and faculty in campuses adjacent to agricultural use of pesticides, herbicides and fumigants.

The Grand Jury determined that there is only one monitoring site in the County. The Grand Jury therefore recommends the establishment of additional monitoring facilities for detecting pesticide and fumigant overspray and drift. This would help to reassure the public regarding the safety of agricultural activities in proximity to day-care and school sites.

Background

Agriculture in the County is a more than \$2-billion business that supplies the country with agricultural products. The industry uses toxic fumigants and pesticides to control soil pests for most of its fruit and vegetable crops, as well as nursery plants. (Ref-01)

These fumigants and pesticides present risks to the health of farmworkers and to those in proximity to agricultural activities, including people at schools and day-care centers. (Ref-02)

Studies of workers in agricultural fields where applications of pesticides and fumigants were made during crop production have indicated short- and long-term negative effects of exposure to these substances. A 2014 study of women and their two-year-old children exposed to organophosphate pesticides demonstrated that high levels of organophosphate metabolites in the children's blood inhibited mental development. By age five, the children were found to have decreased attention spans. (Ref-12)

Fumigants and pesticides, including chlorpyrifos; methyl bromide; 1,3-dichloropropene (1,3-D); and chloropicrin, utilized in agriculture fields near schools and day-care centers in the County, pose both chronic and acute health issues. In a 1990 study, the California Environmental Health Tracking Program concluded that the County had the highest number of schools (12) and the highest number of students (13,045) exposed to pesticides applied within a quarter-mile of the schools. The amount of pesticides applied within this area ranged from 2,635 to 28,979 pounds. (Ref-02)

A notable County aerial overspray event where students were directly impacted occurred in 2000. An agricultural field immediately adjacent to Mound Elementary School and Balboa Middle School was sprayed as students were arriving, and spray fell directly on students, adversely affecting some of them. (Ref-04)

Currently, the regulation of pesticide and fumigant application is conducted by the VCAC and the CDPR. The VCAC has jurisdiction over all agricultural uses of pesticides, herbicides and fumigants in the County. The VCAC is responsible for issuing permits and conditional-use permits for products deemed by the CDPR as restricted materials that pose the most risk to handlers, the public or the environment. The application of a pesticide, herbicide or fumigant can only be made on specific favorable conditions of temperature, wind, humidity and timing so that students and faculty on a school campus are least likely to be affected. (Ref-03)

New regulations controlling the use of these pesticides near schools and day-care centers, spelled out in Title 3, Section 6692 of the California Code of Regulations, became effective in the State of California (State) on January 1, 2018. Under the new rules, application of pesticides, herbicides and fumigants are prohibited within a quarter mile of public K-12 schools and licensed day-care centers from 6 AM to 6 PM, Monday through Friday, and during other times school or day-care campuses are in use. (Ref-03, Ref-05)

These rules allow applications of fumigants within a quarter mile of school or day-care campuses if they are not in session and will not be in session for at least 36 hours after the application. Schools and day-care centers must be given at least a 24-hour notice before application. A potential pesticide or fumigant applicant must also annually provide notice to the VCAC and the schools located close to the agricultural operations. (Ref-03, Ref-05)

The pesticides of greatest public health concern in California (chloropicrin; 1,3-D, chlorpyrifos and methyl bromide) are or have been utilized in the County. For more than a decade, there has been increasing evidence of the carcinogenic effects of these pesticides. (Ref-10)

In 2015 the CDPR qualified chlorpyrifos a “restricted material” and in 2018 issued a proposal to list chlorpyrifos as a toxic air contaminant. As a result, use of this pesticide has diminished in the County in the last few years. In 2017 there was use of 29,000 pounds of chlorpyrifos; in 2018 there was 9,000 pounds in use. Currently, chlorpyrifos is not being utilized. It appears currently that no permits have been issued for its use due to a ban imposed by the State. The ban was challenged by the EPA and is currently before the Ninth Circuit Court of Appeals, to be heard en banc. (Ref-07, Ref-08, Ref-09)

The Grand Jury is aware of more general statewide studies of the use of toxic pesticides that pose substantial health risks to farm workers, bystanders and nearby residents, as well as significant environmental impacts. However, the Grand Jury narrowed its focus to only regulation of pesticide use in agricultural fields in proximity to school campuses, including day-care centers in the County. (Ref-10)

Methodology

The Grand Jury sent surveys to all County school districts inquiring as to whether any pesticide or fumigant overspray complaints had been received in the last two years. Inquiry was also made whether sufficient notice was given of the types and timing of pesticides and fumigants utilized, in compliance with current regulations. The VCAC and the Ventura County District Attorney’s office were asked whether any complaints had been received in the last two years.

The Grand Jury met with representatives of both the VCAC and CDPR, inquiring into the licensing of pesticides and fumigants utilized, the licensing of applicators, inspection and application practices, and air monitoring around schools and day-care centers. The Grand Jury conducted a site visit of the only County air-quality monitoring site, which is located at Rio Mesa High School.

Additionally, the Grand Jury performed internet searches, reviewed websites and conducted interviews

Facts

- FA-01.** A 2014 University of California at Davis study of women and their two-year-old children exposed to organophosphate pesticides demonstrated high levels of organophosphate metabolites in the children’s blood, which inhibited mental development. By age five, the children were found to have decreased attention spans. (Ref-12)
- FA-02.** A 1990 California Environmental Health Tracking Program study concluded that the County had the highest number of schools (12) and the highest number of students (13,045) exposed to pesticides applied within a quarter-mile radius. The pesticide application ranged from 2,635 to 28,979 pounds annually. (Ref-05)
- FA-03.** The only air collection monitoring station in the County is operated by the CDPR on the campus of Rio Mesa High School in Oxnard. Weekly sorbent samples are taken and analyzed. The air samples taken are random in timing. There are multiple schools and day-care centers within two miles of the collection site: City Kids Pre-school, Magic Carousel Preschool, Children R Us CDC, Citrus Glen Elementary School, Princeton Academy, Las Posas Children’s Center-Citrus Glen, Ventura Children’s Learning Center, Sunshine Preschool, Las Posas Children’s Center-Serra, Junipero Serra Elementary School, Providence Court School, Rio Del Mar Elementary School, Rio Plaza Head Start, Rio Plaza Elementary School, Rio Del Valle Junior High School, Julie Irving Head Start Center, Child Development Center Rio Real, Rio Real Elementary School, City Kids Preschool, Portola Elementary School, Fellowship Church Preschool, Little Scholars Montessori, Mesa School, Mary B. Perry High School and Marshall Elementary School. (Ref-05)

- FA-04.** The amount of 1,3-D, measured by the monitoring station on the campus of Rio Mesa High School for the six years from 2012 to 2017 inclusive, averaged 0.14 parts per billion (ppb). The highest year was 2012, with 0.19 ppb, and the lowest year was 2014, at 0.09 ppb. (Ref-11)
- FA-05.** The CDPR estimate is that the 70-year lifetime cumulative effect of 1,3-D in the Oxnard monitoring area would be 0.56 ppb, which is 5% of the level considered to be a health hazard. Methyl bromide and chloropicrin results also showed levels substantially less than regulatory targets. (Ref-11)
- FA-06.** After a letter survey by the Grand Jury, it was established that none of the 18 school districts surveyed in the County had received any complaints of overspray or drift of a pesticide or fumigant within the last two years.
- FA-07.** After a letter survey by the Grand Jury, it was established that all of the school districts surveyed had received annual notices of pesticides, fumigants and herbicides to be applied in the coming year, and/or notice of applications 48 hours prior to pesticide use.
- FA-08.** An interview with staff of the VCAC revealed that the VCAC has 15 inspectors in the County who make inspections of agricultural properties, applicators, and application conditions such as wind velocity, weather, temperature, and timing to prevent public and animal exposure due to overspray or drift.
- FA-09.** Three fumigant materials are collected and analyzed by the CDPR in the County: chloropicrin, 1,3-D and methyl bromide. Future collections and analysis will include chlorpyrifos, which has been used on strawberry fields in the past. Up to 31 additional pesticides and fumigants are to be collected in future monitoring plans by the CDPR. (Ref-11)
- FA-10.** On interview with the staff of VCAC, while the pesticide chlorpyrifos is to be monitored along with 30 other substances beginning 2019, it has been banned and is not used in the County due to strict conditions of application. (Ref-11)

Conclusions

- C-01.** The Grand Jury concluded that the use of pesticides, herbicides and fumigants in close proximity to school campuses and day-care centers in the County is of concern for the health and welfare of children, faculty and members of the public associated with these campuses. (F-01, F-02)
- C-02.** The Grand Jury concluded that, with the implementation of current regulations concerning pesticide application and fumigation near schools and day-care centers by the VCAC, students and faculty at the public schools and campuses are afforded a measure of safety from overspray or drift of pesticides or fumigants. (F-03, F-04, F-05, F-06, F-07, F-08, F-09, F-10)
- C-03.** The Grand Jury concluded that the lack of any complaints from school or day-care campuses of overspray or drift from pesticide applications and

fumigations in the last two years suggests that the level of regulation appears to be effective. (F-06)

- C-04.** The Grand Jury concluded that the monitoring of fumigants like 1,3-D, methyl bromide and chloropicrin utilized in County agriculture demonstrates that levels of drift are below cumulative harmful levels. (F-04, F-05)
- C-05.** The Grand Jury concluded that increased sampling of additional County agricultural areas near schools, day-care centers or areas of concentrated population would provide additional public assurance of safety. (F-03, F-09)

Recommendations

- R-01.** The Grand Jury recommends that VCAC establish more comprehensive air sampling of pesticides and fumigants, either stationary or mobile, at additional locations in Ventura County where there are clusters of schools and day-care centers. This would give increased assurance of public health and safety intended by these regulations. (C-01, C-02, C-03, C-04, C-05)

Responses

Response Required From:

Ventura County Board of Supervisors (R-01)

Response Requested From:

Ventura County Agricultural Commissioner (C-01, C-02, C-03, C-04) (R-01)

References

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<http://www.environmentnow.org/pdf/Wishtoyo-Agritoxins-Report.pdf>
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- Ref-11.** Pesticide Air Monitoring Results Database-California Department of Pesticide Regulation
https://www.cdpr.ca.gov/docs/emon/airinit/pesticide_air_monitoring_database.htm
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- Ref-12.** UC Davis MIND Institute study finds association between maternal exposure to agricultural pesticides, autism in offspring
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Glossary

<u>TERM</u>	<u>DEFINITION</u>
1,3-D	1,3-Dichloropropene is a broad-spectrum antimicrobial fungicide, herbicide, insecticide and nematicide. The EPA classifies this a probable human carcinogen. It also demonstrates acute toxicity to humans when inhaled.
CDPR	California Department of Pesticide Regulation
Chlorpyrifos	An organophosphate pesticide used to kill pests, including insects and worms. It can affect the nervous system.
Chloropicrin	A broad spectrum antimicrobial fungicide, herbicide, insecticide and nematicide.
County	Ventura County
Grand Jury	2018-2019 Ventura County Grand Jury
Methyl Bromide	A soil fumigant and pesticide, colorless and odorless as a gas, highly toxic to humans, causing lung damage. It is used in agriculture for strawberries and tomatoes.
Organophosphates	Most commonly used insecticides in the world. Thirty-six of them are presently registered for use in the United States, and all can potentially cause acute and sub-acute toxicity.
Sorbent	A material that absorbs another substance; i.e. that has the capacity or tendency to take it up by either absorption or adsorption.
State	State of California
VCAC	Ventura County Agricultural Commission

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