Economic analysis of proposed changes to regulations regarding decontamination sites and eyewash stations

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California Department of Food and Agriculture
Office of Pesticide Consultation and Analysis
May 2026

Background

The Department of Pesticide Regulation (DPR) proposes to modify sections of the California Code of Regulations (CCR) related to required training and safety equipment for employees working with pesticides, specifically CCR sections 6720, 6724, 6732, 6734, 6738.4, 6771, and 6793. DPR asked California Department of Food and Agriculture's (CDFA) Office of Pesticide Consultation and Analysis (OPCA) to analyze the economic impact of these changes for agricultural operations. This report is part of the interagency consultation between DPR and CDFA OPCA specified in California Food and Agricultural Code, Section 11454.2. Accordingly, the analysis is limited to evaluations of the pest management and economic effects on California agricultural operations of regulations regarding pesticide and pesticide use under consideration by DPR.

Proposed changes

CCR 6720 Safety of Employed Person

Changes to CCR 6720 simply add CCR 5162 to the list of exemptions for "when antimicrobial agents, used only as sanitizers, disinfectants, or medical sterilants, or pool and spa chemicals are handled." This change does not affect agricultural operations.

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CCR 6724 Handler Training

Changes to CCR 6724 update the requirements for content in pesticide handler training. These trainings are provided by the employer for any employee who handles pesticides. Proposed updates add a requirement for the trainings to cover when and why an eyewash station is required and how to use them. Because this is a small additional component of trainings that already exist, the increase in cost to take the training is minimal. However, all affected businesses, include sole proprietors, will need to invest time to review and revise their current trainings.

CCR 6732 Change Area and 6734 Decontamination Sites for Employees Handling Pesticides

Changes to CCR 6732 simply update the reference to section 6734. Changes to CCR 6734 update the requirements for decontaminations sites. Exact specifications for the amount of water, soap, and towels have been updated; these are not anticipated to generate costs as similar amounts of items were already required.

The most significant change is that when eyewash stations are required, those stations must now "must bear evidence of compliance with American National Standard for Emergency Eyewash and Shower Equipment ANSI Z358.1-2014" and "must be used and maintained in accordance with the manufacturer's instructions." Applicators that need to have access to an eyewash station for specific applications and do not yet own a compliant station will need to purchase one. These changes will affect many agricultural operations and applicators.

CCR 6734 also covers which applications require the applicator to have a compliant eyewash station. For agricultural applications, if the product label requires protective eyewear or the use of a closed system for mixing and loading the pesticide, a compliant eyewash station is required at the mixing/loading site. If the product requires protective eyewear during application, the applicator must have a personal eyewash unit compliant the ANSI standard from 1981 (ANSI Z358.1-1981) for emergency flushing. The 1981 standard allows for the use of personal water bottles as eyewash units as should not necessitate most applicators to purchase new equipment for this purpose.

For non-agricultural applications, including those made by CDFA's pest prevention programs to residential areas, compliant eyewash stations are required when mixing or loading products with the signal words "DANGER" or "DANGER/POISON". If the product label requires protective eyewear, the applicator must have a personal eyewash unit for emergency flushing. Outside of the impact on CDFA's programs, the changes for non-

agricultural applications are not likely to impact agriculture, though they may cause significant costs to be incurred by structural pest control and/or vector control operations.

CCR 6738.4 Personal Protective Equipment Exemptions

Changes to CCR 6738.4 reword the exemptions for chemical-resistant gloves and protective eyewear for handling liquid fumigants. The changes are unlikely to change practices on the ground because there is not a substantive change in the regulation.

CCR 6771 Requirements for Early Entry Employees

Changes to CCR 6771 add the requirement that an employee who needs re-enter a treated area early needs to have access to a personal eyewash unit that meets the 1981 ANSI standard (ANSI Z358.1-1981). While this may lead to some businesses having to purchase additional personal eyewash units, this is a practice that was already in use in many instances.

CCR 6793 Minimal Exposure Pesticide Safety Use Requirements

The only change to this section removes the sentence “the employer shall provide washing facilities, as specified in section 6734, where minimal exposure pesticides are mixed or loaded, regardless of the toxicity category of the product used.” This change brings this section into agreement with the other proposed changes that now define more clearly when and what types of eyewash stations and decontamination sites are required for each type of application.

Analysis of Economic Impact

There are two components of this regulation that may increase costs for California agricultural businesses. One is that all businesses with employees who apply pesticides will need to spend time learning about the new requirements and determining if they are compliant. We refer to these as administrative burden costs. The second is taking corrective action to become compliant, including revising current trainings, updating decontamination sites, and purchasing an eyewash station if necessary.

For this analysis we focus on six specific types of licenses: qualified applicator licenses (QAL), Qualified Applicator Certificate (QAC), private applicator certificates (PAC), and aircraft operators. For QALs, we only include those with at least one category related to agriculture

(D, E, F, G, H, I, J, L, and/or M).[1] We also include members of the California Agricultural Aircraft Association as a count of aerial applicator businesses. The business licenses include in this analysis are Pest Control Business main (PCM) and Pest Control Business branch (PCB). QAL, QAC, PCM, and PCB data were obtained from DPR. PAC counts were obtained from California Agricultural Commissioners and Sealers Association Table 1 reports the number in each category.

Table 1: Number of Affected License Holders by License Type

License Type	Number*
Qualified Applicator License (categories D, E, F, G, H, I, J, L, and/or M)	5,591
Qualified Applicator Certificates (categories D, E, F, G, H, I, J, L, and/or M)	2,365
PCM and PCB	2,582
Private Applicator Certificate	8,199
Members of California Agricultural Aircraft Association (businesses)	40

*Number of each license type from October 2025

Certified applicator types:

QALs are issued by DPR and are required for an applicator to do any of the following:

- Apply or supervise the application of federally restricted use pesticides or state restricted materials for any purpose or on any property other than that provided by the definition of a private applicator (Title 3 of California Code of Regulations [3 CCR], section 6000)
- Supervise the pesticide applications made by a licensed pest control business and are responsible for its safe and legal operation. The QAL shall include the categories of pest control activities they supervise (Food and Agricultural Code [FAC] sections 11701-11709)

QACs are issued by DPR and are required for an applicator to do any of the following:

- Apply or supervise the application of federally restricted use pesticides or state restricted materials for any purpose or on any property other than that provided by the definition of a private applicator (Title 3 of California Code of Regulations [3 CCR], section 6000).

[1] https://www.cdpr.ca.gov/wp-content/uploads/2025/06/qal.pdf

PACs are issued by County Ag Commissioners or the DPR director for counties that do not have a commissioner. Title 3 CCR section 6000 defines:

- Private applicator as an individual who uses or supervises the use of a pesticide for the purpose of producing an agricultural commodity as defined by Title 40 Code of Federal Regulations, section 171.3 (July 1, 2019), hereby incorporated by reference, on property owned, leased, or rented by him/her or his/her employer.
- Certified private applicator as a private applicator holding a valid private applicator certificate issued by the commissioner (or the director in any county where there is no commissioner).

PACs are primarily held by growers and their direct employees who perform their own pest control operations.

Pest Control Aircraft Pilot Certificates are required if someone operates an aircraft to conduct pest control in California, pursuant to Food and Agricultural Code section 11901 (FAC 11901). Examples include the following: pilots employed by a licensed Pest Control Business, pilots employed by vector control agencies or districts, and pilots who do pest control on their own property (private applicators). For this analysis we use the number of businesses that are members of the California Agricultural Aircraft Association, not the number of pilots, because the compliant eyewash stations and trainings would all be at the take-off sites, not on the aircrafts themselves.

It is possible that people applying only pesticides that are not federally or state restricted do not hold a certified applicator permit (QAL, QAC, or PAC). Nonetheless they may use a product that requires protective eyewear, and thus an eyewash station, for mixing and loading activities. Those potential users are not counted in this analysis.

Pest control business license types:
Businesses must possess a pest control license if they do pest control for hire.
PCMs are for the main site and PCBs are for business branches. These licenses are issued by DPR and described here https://www.cdpr.ca.gov/wp-content/uploads/2024/12/pcb.pdf.

Administrative burden costs and training costs

All businesses with employees who handle pesticide will need to spend time learning the new regulations and determining if they are not compliant and taking actions to become compliant. In addition to these administrative burden costs, we are including the cost of

revising trainings in this section because it is also an hourly cost. The equipment costs of compliance, mainly compliant eyewash stations, are estimated separately below.

We estimate that the administrative burden and training updates will be a series of one-time actions totaling around three and a half hours that will be needed for all affected businesses: understanding the regulations and standards (1.5 hour), evaluating operations (30 minutes), and undertaking corrective action for each license holder (1.5 hours). The necessary actions include reading and understanding the revised regulations and the relevant sections of both ANSI standards referenced, assessing whether or not corrective actions are necessary, and then undertaking corrective actions including updating trainings and decontamination sites and purchasing equipment, including eyewash stations and personal eyewash units. These are one-time costs because they will only be necessary at the onset of the new regulation. Time required to understand the regulations includes time for reading both the ANSI Z358.1-2014 standards and locating and read section 6 of the ANSI Z358.1-1981 standards.

Our estimate of affected businesses includes PCM, PCB, PAC, and aircraft operators. We included all PCM and PCB license holders as they all employ at least one certified applicator. PAC holders would not need to be registered as a pest control business. Industry communications estimate that around half of PAC holders are owners who employ another PAC or other certified applicator on their property. As such, we have included 50% of the total PAC holder number as an estimate of PAC holders who are employees and thus subject to these changes. All agricultural aircraft operators would be affected.

The mean hourly wage for first-line supervisors of pesticide applicators in the first quarter of 2025 was $30.88 according to the California Employment Development Department's Occupational Employment and Wage Statistics program.[2] We applied this wage rate to 3.5 hours per business that has covered employees. In total, the administrative burden and revising the trainings are estimated to cost $1,160,833 for the initial Table).

[2] The OWES job category we used is 37-1011 " First-Line Supervisors of Farming, Fishing, and Forestry Workers. Not all licenses are in this same category. Alternative categories include 37-3102 "Pesticide Handlers, Sprayers, and Applicators, Vegetation" at $24.29 per hour and 11-9013 " Farmers, Ranchers, and Other Agricultural Managers" at $59.40 per hour (California EDD OEWS).

Table *2*: Year 1 Administrative Burden Costs by License Type

License Type	Number*	Total Labor Cost
PCM and PCB	2,582	$279,063
Private Applicator Certificate	8,119**	$877,447
Aircraft operator	40	$4,323

*Number of each license type from October 2025

**Assuming 50% of total PAC holders are affected.

There are several important caveats to this estimate. The time spent revising trainings may be substantially more than the 1.5 hrs we specify for undertaking all necessary corrective actions. For high-quality, professional trainings, we received an estimate of 6 to 7 hours just to do the revision. While that upper bound is likely an overestimate for many PAC holders, it is not unreasonable for large businesses. We used the lower estimate for PAC holders because there are more PAC holders than PCMs and PCBs. However,1.5 hrs is likely an underestimate of the time spent on updating trainings for the latter two groups. Additionally, these time estimates do not include the time spent in formal trainings on the new regulations or taking the revamped trainings as those will fit into continuing education and already existing requirements.

Compliant eyewash stations

Licensed individuals (QALs, QAC, and PACs) may work for pest control businesses, but each license holder would need to have access to their own decontamination site and eyewash because they could all be applying at the same time in different locations. They will need to have access to a certified eyewash station if they are mixing and loading a pesticide that requires protective eyewear. Mixing and loading into equipment used for applications is often done on-site at a field.

There are a couple considerations when determining how many applicators will need protective eyewear and an eyewash station. First, information on protective eyewear is available on individual pesticide labels, but label requirements for this are not easily categorized, making it difficult to determine whether any applicators would never require protective eyewear based on pesticide use data. While most pesticide products that require the signal words DANGER or POISON/DANGER require protective eyewear, some do not, including some commonly used pesticides. On less hazardous products requiring signal words like WARNING or CAUTION, requirements for protective eyewear are even more variable. Second, some common, widely used pesticides do require protective eyewear. For example, sulfur is an active ingredient in fungicides that are widely used across California crops, including organic crops, and requires protective eyewear.

Pyrethroids are a class of widely used insecticides that often require protective eyewear. These two examples alone are sufficient to conclude that any QAL, QAC, or PAC could be mixing and loading a product that requires an eyewash that bears "evidence of compliance with American National Standard for Emergency Eyewash and Shower Equipment ANSI Z358.1-2014." Given this, we make the conservative assumption that all licensed individuals will need access to a compliant eyewash station at some point. Because it would delay critical pest control to have to monitor pesticide plans and purchase a compliant eyewash only when a product first triggered the requirement, we assume that QAL, QAC, and PAC holders will proactively comply by purchasing compliant eyewashes. In summary, we assume all QAL, QAC, and PAC holders will have or acquire compliant eyewash stations.

Some QALs are likely to already have compliant stations because the safest way to comply with current regulations is to purchase an eyewash station and most stations for sale are ANSI compliant and would meet the standards of the proposed regulation. QALs are often supervising other applicators and are more likely to invest in purchasing a station to ensure compliance and limit liability. For our base analysis, we assume that 50% of agricultural QALs will already have compliant stations and 50% will need to purchase them. Table 5 in the appendix reports the estimated cost for the upper bound of 100% of agricultural QALs having to purchase new compliant stations.

Unfortunately, no data exist on the state of eyewash setups currently used by PACs. Industry communications indicate that the large majority comply without purchasing stations. For our base analysis, we assume that 50 percent of PAC holders (8,119 PACs) will need to purchase a new station. Table 7 in the appendix considers the case where 100% of PACs purchase a station.

There are many types of compliant eyewash stations. They range from $265 for the most basic self-contained, portable stations to $2,426 for a plumbed, heated, and/or pressurized one. For this analysis, we assume that PAC and QAC holders will buy the cheaper option. QALs may choose to purchase temperature- and pressure-controlled units to ensure compliance when they are unable to regularly check eyewash set-up compliance personally, or when the stations are repeatedly deployed to different fields with little time for maintenance. For our base analysis presented here, we assume that 50% of the agricultural QALs who need to buy stations (25% of all QALs) will buy the $2,426 model. Table 6 in the appendix reports the cost estimate for the upper bound when 100% all license-holders of any type who need to purchase a compliant station purchase the temperature- and pressure-controlled stations.

CDFA conducts many pest control operations as part of pest prevention and eradication plans. Pesticide applications directed by the department primarily occur on non-agricultural land because growers handle agricultural applications; therefore, most CDFA activities would fall under the rule that compliant eyewash stations are needed for mixing and loading pesticides with the signal words DANGER or POISON/DANGER. Some products used by CDFA currently have one of those signal words and others could in the future. Given that, for this analysis, we assume that all mixing and loading facilities at CDFA will need to become compliant. Across the department there are approximately 15 mixing and loading sites. Ten of these facilities would need to purchase a plumbed eyewash station at $2,470, while the remaining 5 would purchase the $265 portable option.

Table *3*: Eyewash Station Purchasing Costs

License Type	**Number of Purchasers**	**Eyewash Station Price**	**Total Cost of Purchasing Eyewash Stations**
QAL			
- temp + pressurized	1,398	$2,426	$3,391,548
- base model	1,397	$265	$370,205
QAC	2,365	$265	$626,725
Private Applicator Certificate	8,119	$265	$2,151,535
Aircraft operator	40	$265	$10,600
CDFA sites			
- plumbed	10	$2,470	$24,700
- portable	5	$265	$1,325
Total	**13,334**		**$6,576,638**

Purchasing eyewash stations as described above will cost $6,576,638 in total. Table 3 reports costs for applicators within each license type and CDFA sites. The largest costs are for private applicators, all of whom we estimate will purchase the cheapest type of station in this scenario, and for the half of QALs who purchase a temperature-controlled, pressurized station in this scenario.

Eyewash stations require ongoing service, including flushing and refills. The pressurized, temperature-controlled stations that QALs are more likely to purchase due to liability are complicated to service. They can be more time-consuming to clean and require access to an air pump or compressor to pressurize their contents following a refill. We assume that

plumbed stations do not require refills; testing and flushing them is covered below. Portable ones will need to be flushed and refilled. Portable eyewash stations can be refilled by: (1) flushing, cleaning, and filling with potable water weekly; (2) flushing, cleaning, and filling with potable water and antimicrobial solution every 3 to 6 months; or (3) using self-contained cartridges that last approximately 2 years and cost around $300. Bottles of antimicrobial solution cost $10 to $20. Considering the tradeoff between purchasing costs and the labor costs required for tracking and executing each of the options, we assume that all base model portable station users will choose option (2) and will refill their station every 3 months with potable water and an additive solution at a conservative purchase price of $20. Given that approximately 13,324 self-contained portable eyewash stations would need to be purchased, the estimated total refill costs for those stations requiring refills would be $1,065,920 annually beginning in Year. This does not include the labor required for the flush, clean, and refill procedure recommended by manufacturers, resulting in an underestimate of the cost for this aspect.

As part of servicing, all eyewash stations would need to be tested weekly and occasionally require additional maintenance. Operators can provide this service themselves or pay for a service contract through an independent provider. We assume that operators will opt to use their own labor. We include the one-time cost of learning how to test in the initial training costs. No added cost for weekly testing is included because the work will be incorporated into existing activities.

With proper maintenance and refills, plumbed and portable eyewash stations can last many years, even when being used. Most manufacturers do not specify a replacement date. If an eyewash station is used, most can simply be cleaned and refilled like a regular service. Given that, we did not include replacement costs in this analysis.

This analysis does not include costs for purchasing additional personal eyewash units. If the product requires protective eyewear during application, the applicator must have a personal eyewash unit compliant the ANSI standard from 1981 (ANSI Z358.1-1981) for emergency flushing. The 1981 standard should allow for the continuation of current practices for eyewash units. However, if people do need to purchase new compliant stations, those have an average cost of $47.20 for a 16 oz unit that will need to be replaced annually. The number of purchasers in Table 3 would be the minimum as eyewash stations could cover multiple applicators each needing their own eyewash unit. Just those 13,334 purchasers adding one eyewash unit each would be an additional $629,365 annually in costs that are not included in this analysis.

Total estimated economic impact

The total first year estimated cost is $8,803,391 Table 4 summarizes the components by compliance activity. Updating knowledge and trainings will cost an estimated $1,160,833 in Year 1 (Table 4). For agricultural pest control operations to come into compliance with the eyewash station requirements by purchasing new stations the estimated cost is $7,737,471 in Year 1 (Table 3 and included in Table 4) for 50% of QAL, 100% of QAC, and 50% of PAC holders. The annual cost of refilling and servicing these stations every three months would be approximately $1,065,920 annually, beginning in Year 1 (Table 4).

Table *4*: Summary of Costs

Item	**Incidence**	**Cost**
Training	One-time	$1,160,833
Initial eyewash station purchase	One-time	$6,576,638
Total one-time		$7,737,471
Eyewash station refills	Annual	$1,065,920
Total Year 1		$8,803,391
Eyewash station refills	Annual	$1,065,920
Total annual (Years 2+)		$1,065,920

Appendix: Supplemental Analyses

This appendix reports costs in cases where an upper bound on a cost category results in a significantly larger cost than under the base case specification. As the base scenario values are estimates, this appendix is meant to provide additional information on the possible scale of impact by providing upper estimates on a number of variables. Tables 5-7 show different scenarios for number of QAL and PAC holders purchasing stations. An important caveat is that these tables examine cost categories separately and do not include upper bounds for multiple dimensions. Table 8 and 9 present labor and total costs in a scenario where 100% of PACs require training.

Table *5*: Upper bound (100%) on the share of agricultural QALs purchasing compliant stations

License Type	**Number of Purchasers***	**Eyewash Station Price**	**Total Cost of Purchasing Eyewash Stations**
QAL			
- temp + pressurized	2,796	$2,426	$6,783,096
- base model	2,795	$265	$740,675
QAC	2,365	$265	$626,725
Private Applicator Certificate	8,119	$265	$2,151,535
Aircraft operator	40	$265	$10,600
CDFA sites			
- plumbed	10	$2,470	$24,700
- portable	5	$265	$1,325
Total	**16,130**		**$10,338,656**

*Assumes that 50% of all QALs purchased temp + pressurized eyewash stations, while the remaining 50% purchase base model eyewash stations.

Table 6: Upper bound (100%) on the share of applicators purchasing temperature and pressure-controlled stations

License Type	Number of Purchasers*	Eyewash Station Price	Total Cost of Purchasing Eyewash Stations
QAL	2,795	$2,426	$6,780,670
QAC	2,365	$2,426	$5,737,490
Private Applicator Certificate	8,119	$2,426	$19,696,694
Aircraft operator	40	$2,426	$97,040
CDFA sites			
- plumbed	10	$2,470	$24,700
- portable	5	$2,426	$12,300
Total	**13,334**		**$32,348,724**

*Assumes 50% of QALs already have a compliant station

Table 7: Upper bound (100%) on the share of PACs purchasing compliant stations

License Type	Number of Purchasers*	Eyewash Station Price	Total Cost of Purchasing Eyewash Stations
QAL			
- temp + pressurized	1,398	$2,426	$3,391,548
- base model	1,397	$265	$370,205
QAC	2,365	$265	$626,725
Private Applicator Certificate	16,237	$265	$4,302,805
Aircraft operator	40	$265	$10,600
CDFA sites			
- plumbed	10	$2,470	$24,700
- portable	5	$265	$1,325
Total	**21,452**		**$8,727,908**

*Assumes that 50% of all QALs purchased temp + pressurized eyewash stations, while the remaining 50% purchase base model eyewash stations

Table 8: Year 1 Administrative Costs by License Type with 100% of PACs requiring training

License Type	Number*	Total Labor Cost
PCM and PCB	2,582	$279,063
Private Applicator Certificate	16,237	$1,754,895
Aircraft operator	40	$4,323

*License type numbers from October 2025

Table 9: Summary of Costs with 100% of PACs requiring training

Item	Incidence	Cost
Training	One-time	$2,038,281
Initial eyewash station purchase	One-time	$7,867,453
Total one-time		$9,905,734
Eyewash station refills	Annual	$1,455,600
Total Year 1		$11,361,334
Total annual (Years 2+)	Annual	$1,455,600