California Environmental Protection Agency
Department of Pesticide Regulation

2021

California School & Child Care Pesticide Use Report Summary

THE HEALTHY SCHOOLS ACT

Legal Reference and Intent

Food and Agricultural Code section 13182: It is the policy of the state that effective least toxic pest management practices should be the preferred method of managing pests at schoolsites and that the state, in order to reduce children's exposure to toxic pesticides, shall take the necessary steps, pursuant to this article, to facilitate the adoption of effective least toxic pest management practices at schoolsites.

Lead Agency for Compliance Assistance

California Environmental Protection Agency (CalEPA)

Department of Pesticide Regulation (DPR)

Integrated Pest Management (IPM) Branch

School and Child Care IPM Programs
1001 I Street, P.O. Box 4015
Sacramento, CA 95812-4015

Key Contacts for DPR

Aimee Norman- IPM Branch Chief

Lisa Estridge- Education and Outreach Unit Manager

How To Get More Info

E-mail: school-ipm@cdpr.ca.gov

Website at: www.cdpr.ca.gov

dpr Department of Pesticide Regulation

SCHOOL AND CHILD CARE IPM PROGRAMS

The California Department of Pesticide Regulation is the lead state agency providing Healthy Schools Act (HSA) compliance support for public K – 12 schools and child care centers, collectively referred to as schoolsites. Additionally, the Department's School and Child Care Integrated Pest Management (IPM) Programs are mandated to facilitate reduced-risk pest management practices at schoolsites, which we do through a combination of outreach and education activities. Our School and Child Care IPM Programs promote the use of safe, effective, and sustainable IPM practices in order to protect children's health and the environment.

In 2021, most schools and child care centers fully reopened following closures in 2020 due to the COVID-19 pandemic.

This year's report highlights the most significant trends occurring with rodenticide, insecticide, and herbicide use at California schools and child care centers.

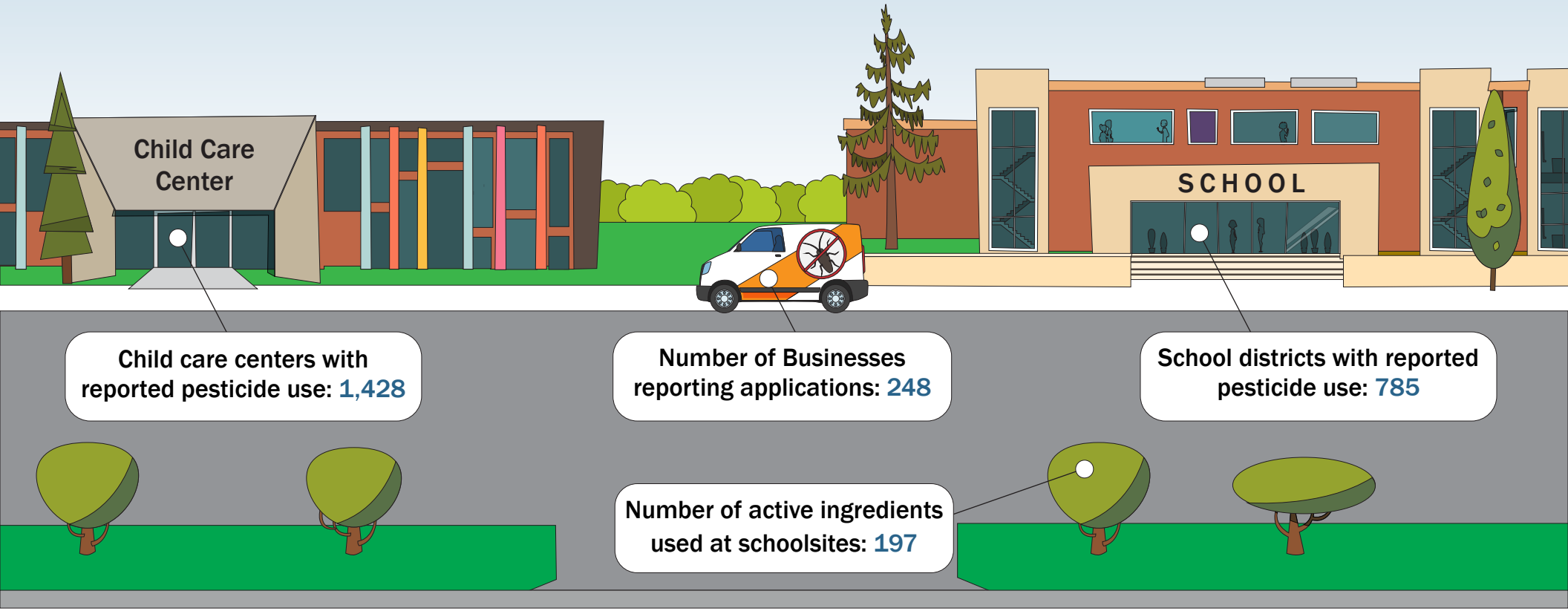
Sincerely,

Lisa Estridge

2021 DATA HIGHLIGHTS AT SCHOOLS AND CHILD CARE CENTERS

Pesticide applications reported at schoolsites: 88,894

Pesticide products used at schoolsites: 818



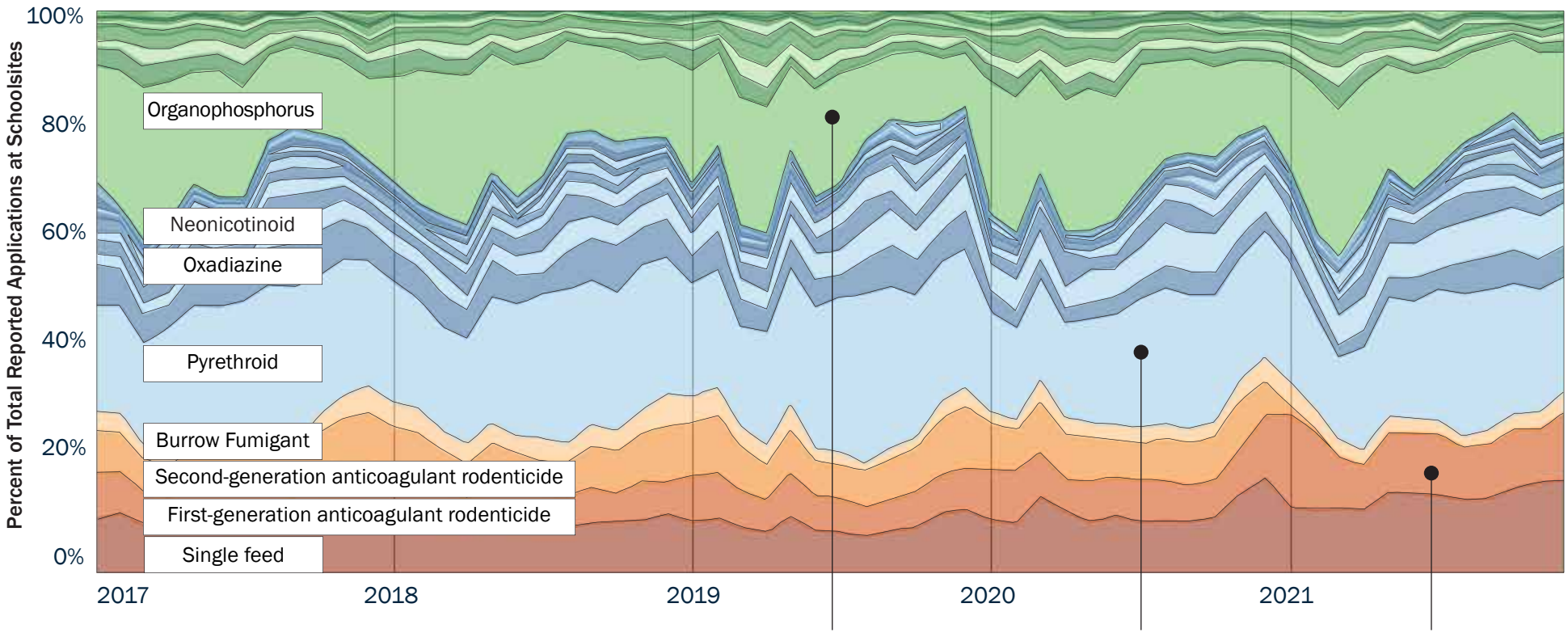
Child care centers with reported pesticide use: 1,428

Number of Businesses reporting applications: 248

School districts with reported pesticide use: 785

Number of active ingredients used at schoolsites: 197

EMERGING TRENDS BY PESTICIDE CLASS



Percent of total reported applications by chemical and pesticide class between 2017–2021.

Pesticide Class:

- Herbicide
- Insecticide
- Rodenticide

Herbicides

2019–2021: Glufosinate-ammonium use continued to increase as glyphosate decreased; both are organophsphorus herbicides.

Insecticides

2020–2021: Pyrethroids are down in 2021 while neonicotinoid applications have steadily increased.

Rodenticides

2021: First-generation anticoagulant rodenticides and Single Feed applications significantly increased. This occurred after AB 1788 banned the use of second generation anticoagulant rodenticides in 2021.

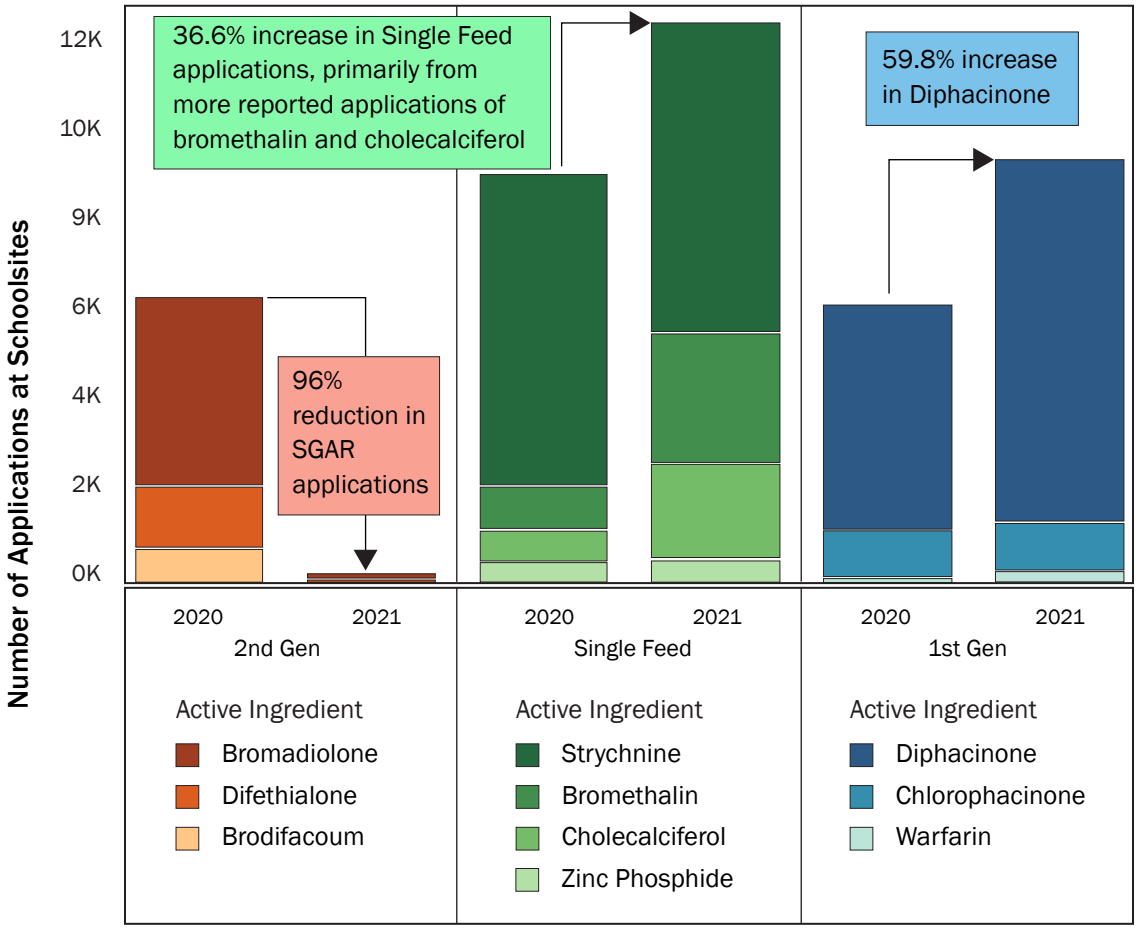
2021 SECOND-GENERATION ANTICOAGULANT RODENTICIDE RESTRICTIONS SHIFTS RODENTICIDE USE

Assembly Bill (AB) 1788 went into effect January 1, 2021, and prohibiting the use of second-generation anticoagulant rodenticides (SGARs) containing brodifacoum, bromadiolone, difenacoum, and difethialone in order to protect wildlife—with few exceptions.

Subsequently, applications of SGARs decreased by 96% at schoolsites as licensed applicators switched to first-generation anticoagulant rodenticides (FGARs) and single feed rodenticides as alternative options. DPR received some pesticide use reports of SGAR applications, which were referred to DPR's Enforcement Regional Offices Branch.

Overall, the total number of rodenticide applications remained consistent with past years.

Shifts seen in rodenticide use. This dual bar graph depicts which FGARs and single feed active ingredients increased after SGAR use was banned. Each color represents a rodenticide class and each shade of color an active ingredient within the rodenticide class.



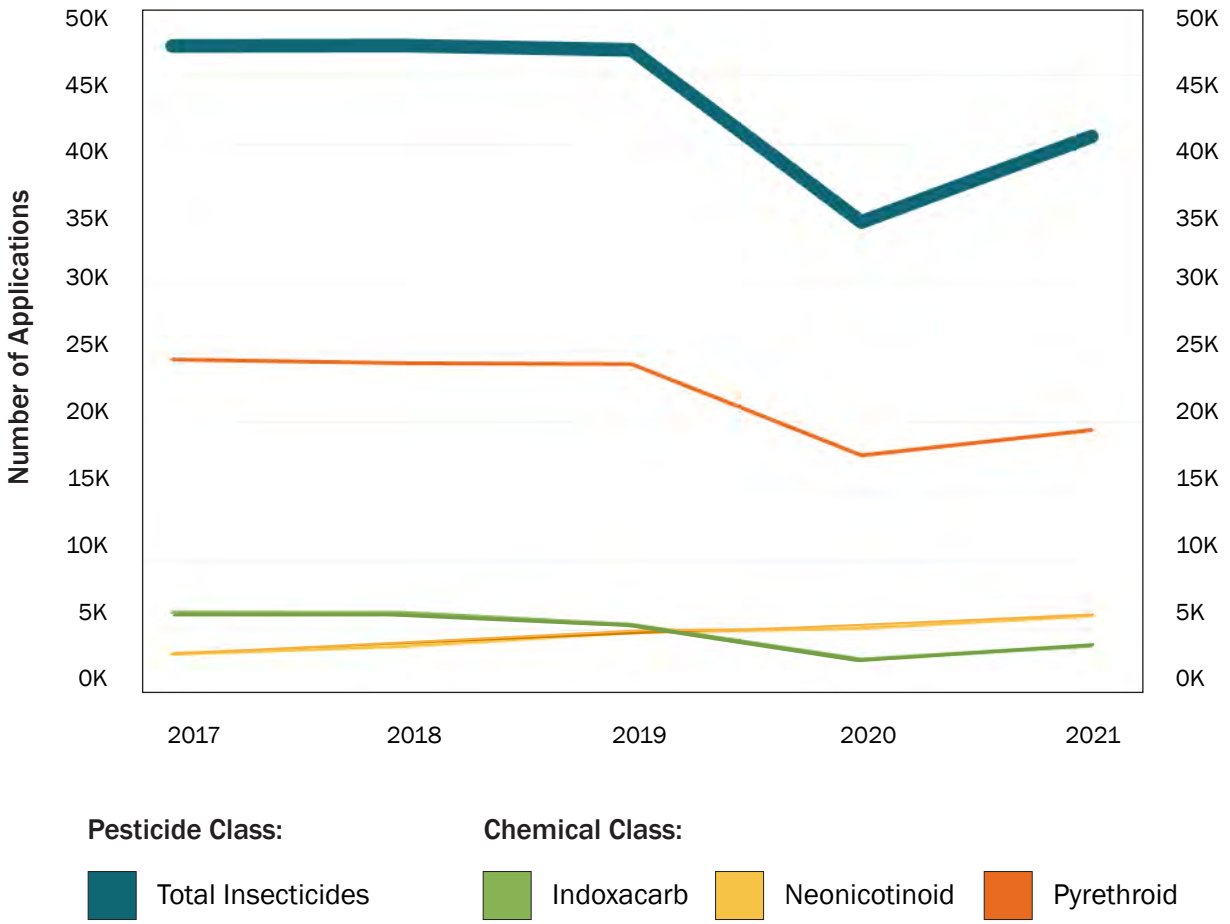
CHANGING INSECTICIDE PATTERNS AT SCHOOLSITES

While pyrethroids continued to be the most applied chemical class of insecticides reported at schools and child care centers, applications in 2021 remained lower in past years despite schools and child care centers being required to fully reopen in the 2021/22 school year.

This can be attributed to the increased applications of neonicotinoids, which rose 93.9% in the prior 5 years. Insecticides containing neonicotinoids, which provide a comparable alternative to pyrethroids, were more frequently reported by some licensed applicators as they reduced pyrethroid applications.

Although pyrethroid and indoxacarb use reminaed below historical use norms, use for both decreased in 2020 and slightly increased in 2021. These patterns suggests indoxacarb was used in addition to pyrethroids, rather than as an alternative.

Top 3 chemical classes of insecticides applied at schools. Pyrethroids remained the most applied insecticide, but only increased slightly in 2021 despite schools reopening. Neonicotinoid applications have steadily increased, while indoxacarb patterns followed a similar trend as pyrethroids.



IMPROVING HERBICIDE EFFICACY SUCCESS STORY

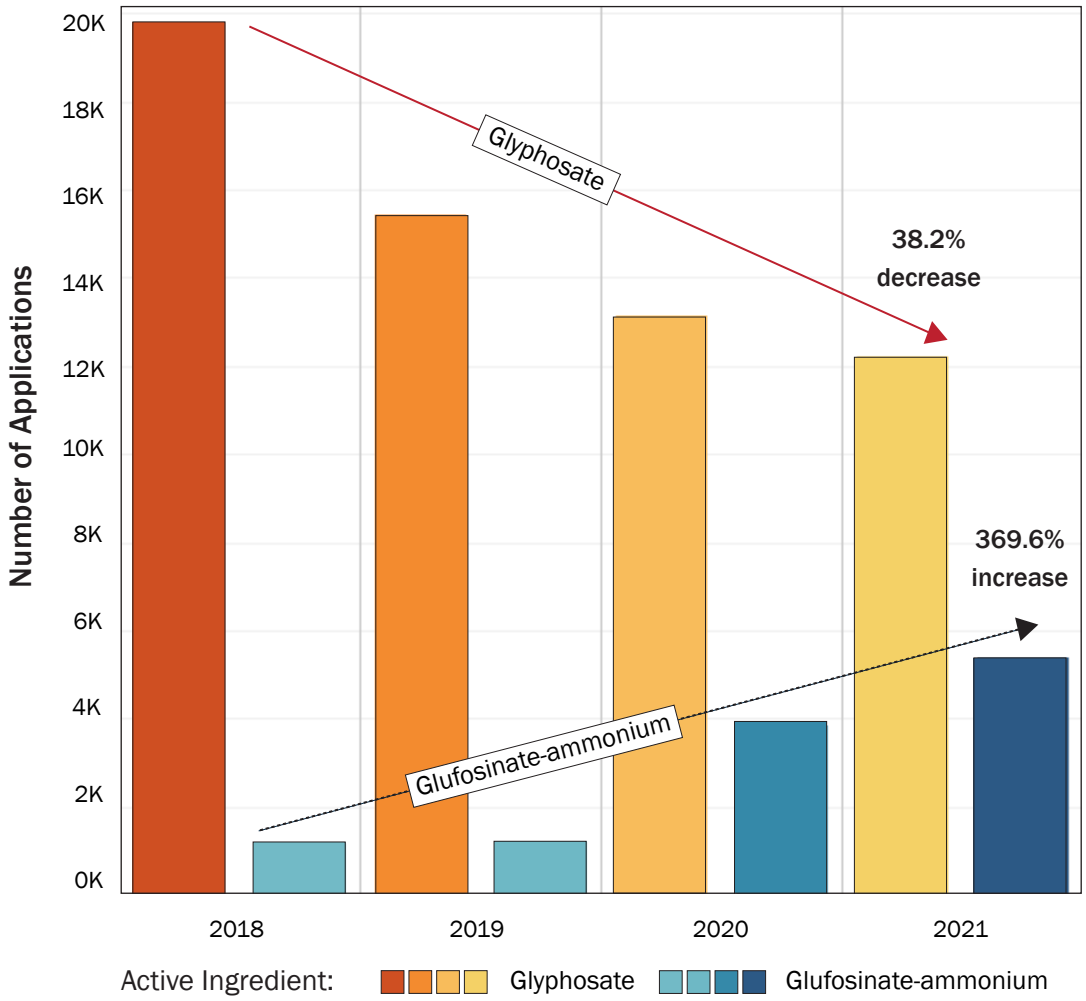
Glyphosate use continued to decrease as school-sites adopted glufosinate-ammonium as a chemical alternative.

IPM Achievement Award winner All Kids Academy (AKA) Head Start, Inc., an organization consisting of 14 child care centers, noticed poor control of weeds after switching from glyphosate to glufosinate-ammonium. The organization reached out to the School & Child Care IPM Programs for insight. Our teams performed weed identification, communicated with the manufacturer of the glufosinate-ammonium product being applied, and completed research to develop suggestions on improving herbicide efficacy.

Of the information provided to AKA Head Start, they found that *diluting glufosinate-ammonium in distilled water caused a significant improvement in efficacy*. The schoolsite had previously used tap water prior, which caused minerals in the hard water to bind with the herbicide thereby reducing its effectiveness. Likewise, as an alternative to distilled water dilution, adding an adjuvant such as Ammonium Sulfate to condition hard water can also improve efficacy.

DPR is proud to support our stakeholders in achieving our common goal of reduced risk and effective pest management.

Glufsosinate-ammonium use increases as glyphosate use continue to decrease. Glyphosate use significantly decreased for the 3rd consecutive year, with applications decreasing by 38.2% from 2018–2021. Glufosinate-ammonium is being adopted as an alternative herbicide with applications increasing by 369.6% during the same time period.



FIRE ANT CONTROL SUCCESS STORY

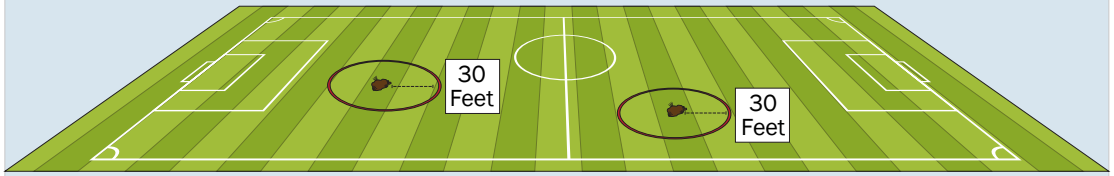
During 2021, the School IPM Program reached out to Bonita Unified School District after noticing high numbers of fire ant bait applications being reported. School IPM staff contacted the district's IPM Coordinator to gather information and offer assistance.

After gathering details of the district's fire ant management approaches, the School IPM Program collaborated with Siavash Taravetti Ph.D. of University of California Integrated Pest Management Program, who completed a study on Red Imported Fire Ant control, to develop a more effective management approach. The primary solution came from understanding that fire ants forage far beyond their nest, so spreading bait at least 30 feet away from the nest allows for more ants to consume the bait and share with the colony.

School IPM staff provided Bonita Unified with these suggestions. The district adjusted their application methods and experienced significantly improved fire ant control. Our Program remains available to serve as a pest management resource for the school district as they continue working on managing fire ants.

"This has been the most successful year yet for us managing fire ants."

-Robert Harrison IPM Coordinator, Bonita Unified, June 21, 2022



Improving fire ant bait effectiveness. Spreading fire ant bait at least 30 feet in all directions of a fire ant mound allows for more foraging ants to consume the bait. Applications of bait should always follow label directions, be made when the ground is dry, and occur when fire ants are actively foraging.

OUR MISSION

We protect human health and the environment by fostering sustainable pest management and regulating pesticides.

OUR VISION

Pest management that is safe, effective, and sustainable for all Californians and our environment.

dpr Department of Pesticide Regulation

www.cdpr.ca.gov