





HAPA and PAN: Hawai'i Pesticide Analysis

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Hawaii is a hotbed for the use and testing of genetically modified crops and dangerous pesticides. Restricted Use Pesticides (RUPs) are a particularly dangerous type of pesticide unavailable for public purchase which can lead to health effects such as asthma, birth defects, and cancer based on the active ingredient. Following a FOIA request, the nonprofits Hawaii Alliance for Progressive Action (HAPA), Pesticide Action Network - North America (PAN), and their partners received access to 7796 disclosed records of RUPs that were applied across the islands in 2019. The Data Clinic team helped HAPA and PAN clean, augment, and analyze this data through descriptive and geospatial analyses. In collaboration with HAPA and PAN, the Clinic team cleaned, standardized, and merged the pesticide records with other datasets related to demographics, school locations, and pesticide regulations to conduct an exploratory data analysis. Through this analysis, the team sought to elucidate findings about legal standards governing pesticides in different states and which demographics were most impacted by the use of RUPs.

The team produced a digital final with findings, descriptive report visualizations, and interactive, threedimensional maps. The report was designed to help HAPA and PAN advocate for state legislation to strengthen pesticide disclosure requirements, increase the size of no-spray buffer zones, and serve as a resource to help local communities better understand what RUPs are applied in their areas. As part of the report, the team conducted a regulatory comparison and found that the use of active ingredients



1,3-Dichloropropene Applied in Hawai'i (lb/ac)



like 1,3-Dichloropropene and Sodium Methyldithiocarbamate in the pesticides applied in Hawai'i in 2019 surpassed the legal limits set in California by a significant margin. Demographic analysis revealed that census block groups with the highest proportion of residents younger than 10 tended to contain or neighbor parcels where RUPs were applied—a critical finding, as children's still-developing bodies are especially vulnerable to adverse health effects from pesticide poisoning. Analysis of school locations revealed a similar pattern, where over half of schools within buffer zones of 0.5, 1, and 5 miles were elementary schools. Additionally, many of the parcels where RUPs



Figure 2. Map of school site locations and RUP parcels in Honolulu county

were applied by agrichemical companies or farms were proximate to the areas with the highest proportion of Native Hawaiian and Islander Pacific residents, whereas demographics around hotels, golf courses, and research sites skewed white. High levels of income stratification also characterize the block groups nearest RUP parcels-the block groups with the highest and lowest per capita income levels across the state tended to contain parcels where RUPs were administered, typically for hotels and golf courses and for agricultural purposes, respectively.