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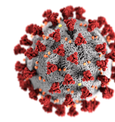


What do Pesticides have to do with SARS-CoV-2 and COVID-19?

By: Diana R. Simmes, MPH and Rebecca Belloso, MPH
PERC-med in Collaboration with the National Pesticide Information Center
www.pesticideresources.org/med

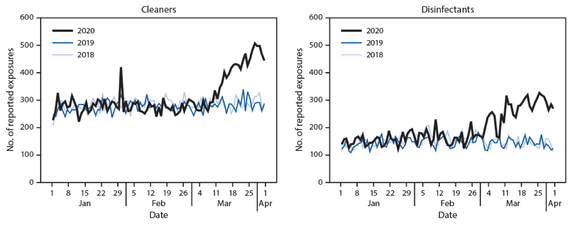
Originally Published March 2020
in the Northwest Regional Primary Care Association (NWRPCA) Newsletter
Updated November 2020

You may be surprised to learn that many infection control products commonly used in healthcare are actually pesticides.

More specifically, they are antimicrobial pesticides. Antimicrobial pesticides are essential public health tools because we use them in hospitals, schools, bathrooms and food preparation areas to prevent the spread of germs that can cause disease. So, what exactly constitutes a pesticide? A pesticide is defined as any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest. Microorganisms, bacteria and viruses are included in the definition of pests. Pesticides help protect our food, water, and health. However, there are always risks related to their use.

Given global challenges with the COVID-19 pandemic, an increasing number of antimicrobial pesticides are being used to help control the spread of the novel coronavirus, SARS-CoV-2, that causes COVID-19. Since the emergence of COVID-19, the demand for antimicrobial pesticides has risen sharply. A recent CDC Morbidity and Mortality Weekly Report, found that U.S. poison centers received an increase in calls (45,550) related to exposure to cleaners (28,158) and disinfectants (17,392) from January–March 2020, compared to January–March 2019 (37,822) and January–March 2018 (39,122). Although this data does not provide a definite link between exposures and COVID-19 related cleaning activity, a clear temporal association can be seen (Chang, 2020).

FIGURE. Number of daily exposures to cleaners and disinfectants reported to U.S. poison centers — United States, January–March 2018, 2019, and 2020*,†



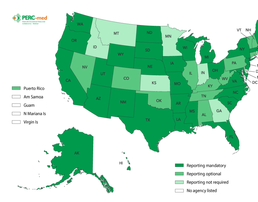
* Excluding February 29, 2020.
† Increase in exposures to cleaners on January 29, 2020, came from an unintentional exposure to a cleaning agent within a school. (Chang, 2020.)

Antimicrobial pesticide products kill or slow the spread of microorganisms including bacteria, viruses, protozoans, and fungi such as mold and mildew. Antimicrobial pesticide products may be found in workplaces, homes or schools. These products are divided into two categories based on the type of microbial pest against which the product works; (a.) public health products and (b.) non-public health products. Public health antimicrobial products are intended to control microorganisms infectious to humans in any inanimate environment. Commonly used public health products are sterilants, sporicides, germicides, disinfectants and sanitizers. Note that sanitizers in particular are used to reduce but not necessarily eliminate microorganisms from inanimate surfaces to levels considered safe as determined by public health codes or regulations. Disinfectant products are further divided into two major types; general use and hospital type. A list of EPA registered antimicrobial pesticide products for use against SARS-CoV-2 was released by the EPA on March 3, 2020. Products on this list have qualified under the EPA's emerging viral pathogen program for use against SARS-CoV-2. Please note that this list is not specific to hospital disinfectant products.

Additionally, the CDC's interim infection prevention and control recommendations for patients with suspected or confirmed COVID-19 includes health care disinfection procedures in the recommended environmental infection control practices.

The National Pesticide Information Center has developed a non-health care guidance resource on how to effectively use disinfectants and wipes to control COVID-19 on surfaces and reduce exposure risk during their use. As with all pesticides, carefully reading and following label directions is critical. For example, paying close attention to the specific contact time for the product on the surface being treated.

Finally, while you likely are knowledgeable about pesticides, it is important to learn more about their widespread usage across occupational settings. In addition to agriculture, many occupations have a pesticide exposure risk such as those working in the healthcare, hospitality, construction, landscape, fishing and forestry industries. Healthcare providers may consider routinely including pesticide exposure histories for all patients. Of note for medical providers, some states have mandatory reporting of pesticide-related exposures and illnesses. The EPA Recognition and Management of Pesticide Poisonings manual is an essential and in depth resource for treating patients with pesticide-related illnesses or injuries.



References
Chang A, Schnall AH, Law R, et al. Cleaning and Disinfectant Chemical Exposures and Temporal Associations with COVID-19 — National Poison Data System, United States, January 1, 2020–March 31, 2020. MMWR Morb Mortal Wkly Rep 2020;69:496–498. DOI: http://dx.doi.org/10.15585/mmwr.mm6916e1external icon

Footnote: This article includes information from the National Pesticide Information Center, the U.S. EPA webpages on antimicrobial pesticides, and from the CDC. For information on preventing, recognizing, and treating pesticide-related illnesses, free resources are available from the Pesticide Educational Resources Collaborative – Medical (PERC-med). Please contact the authors Diana Simmes (drsimmes@ucdavis.edu) and Rebecca Belloso (rabelloso@ucdavis.edu) to explore collaboration opportunities. PERC-med is a cooperative agreement (#X-83935901) between the U.S. EPA's Office of Pesticide Programs and University of California Davis Extension, in collaboration with Oregon State University.

About the Authors

Diana Simmes, MPH is the Pesticide Medical Education Director for PERC-med.
drsimmes@ucdavis.edu

Rebecca Belloso, MPH is the Public Education Specialist for PERC-med.
rabelloso@ucdavis.edu