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Retail Nursery and Garden Center

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Using Disinfectants and Sanitizers Safely

In order to stay healthy and keep our spaces clean during the COVID-19 pandemic, many people are using disinfectants and sanitizers more than they may have before. The Centers for Disease Control and Prevention say to limit the spread of the COVID-19 virus, people should wash hands often with soap and water, and for surfaces, clean first with soap and water then disinfect (cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/disinfecting-your-home.html). When used according to label directions, this will reduce the virus particles present that could infect people.

Disinfectants are pesticides

Disinfectants are designed to kill germs, including viruses, on surfaces and are designated by law to be pesticides. These antimicrobial pesticides are vital to prevent the spread of germs that cause diseases, including COVID-19.

Disinfectants, like any other pesticide, must be used carefully to avoid personal injury during exposure and for them to work as intended.

Always read the label and follow the directions carefully. Many people neglect to leave a disinfectant wet on the surface for long enough to properly disinfect (the contact time) or may not rinse the surface after disinfection when required. For more information, see the blog post on this topic at ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=40929.

Hand sanitizers vs. surface sanitizers

Some antimicrobial products are used to prevent infection by killing or reducing the growth of microorganisms on living things. Alcohol-based hand sanitizers are one example. These products are considered drugs. Hand sanitizers are products intended for use on your skin and aren't for use on surfaces.

Surface sanitizers are registered for use on hard surfaces and are considered pesticides. They should only be used on surfaces, not on your skin. Disinfecting wipes labeled for use on surfaces (Figure 1) are not the same as cleansing wipes, such as baby wipes, intended for use on the skin.

If you're unsure about the product and its intended uses, check the label or packaging. See our blog post on reading pesticide labels at ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=30243.

Protect yourself

You may have heard a lot about "PPE" or personal protective equipment recently. Medical professionals use PPE to protect themselves and others from spreading the COVID-19 virus and other germs, but did you know PPE is also listed on a pesticide label? Wearing PPE when applying pesticides helps to prevent or limit exposure to the chemicals in the pesticide product. For more information about what to wear when using

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Figure 1. Disinfecting wipes contain different pesticide ingredients such as the ammonia compound shown here.

pesticides, see ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=31383.

Health risks

There are health risks from using disinfectants and sanitizers improperly. With the recent nationwide increase in disinfectant use, poison centers have seen a surge in people becoming ill from exposure to disinfectants. When using a surface disinfectant like bleach, remember that you must never apply it to yourself or others. Do not ingest disinfectant products; this includes spraying the product directly on food.

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Disinfectant Safety *...continued from p.1*

Take care not to inhale fumes from a disinfectant product as you use it to disinfect surfaces. As with any pesticide, wash your hands after using sanitizer and disinfectant products.

See the factsheet from the American Association of Poison Control Centers at piper.filecamp.com/uniq/tWyujn4aphIEG7lh.pdf and the infographic from the National Pesticide Information Center on page 3 for more information.

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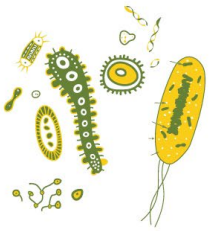
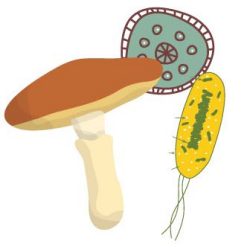
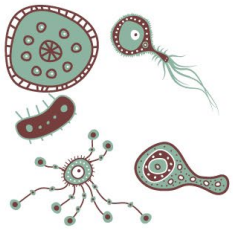
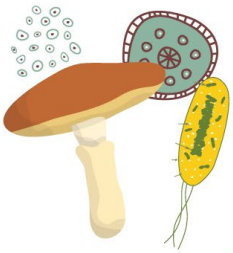
What are the differences between these types of products?

CLEANER	SANITIZER	DISINFECTANT	VIRUCIDE	STERILANT
Aids in Soil Removal	Reduces the Number of Bacteria	Kills Fungi, Bacteria, and Viruses	Kills Viruses	Eliminates all Fungi, Bacteria Viruses, and Spores
				
Simply aids in the removal of soil from a surface. Although cleaning does remove germs from a surface, it doesn't kill them.	Lowers the number of bacteria on surfaces to levels that are considered safe by public health orgs.	Kills infectious fungi, bacteria, and viruses but not bacterial spores on hard environmental surfaces.	Destroys or irreversibly inactivates viruses in the inanimate environment.	A sterilant is used to destory or eliminate all forms of microbial life including fungi, viruses, and all forms of bacterial spores.

INFOGRAPHIC COURTESY OF ENVIROXYCLEAN.

Any product that claims to kill bacteria, viruses, molds, or fungi must be registered with the U.S. EPA as a pesticide.

Check out our UC IPM urban pest management blog!

Our blog provides readers with timely information about pests in and around homes, gardens, landscapes, and structures in California. We post short pieces about common seasonal pests, invasive pests, beneficials, and new UC IPM resources, including new and revised *Pest Notes*, training events, and other educational materials for residential audiences and pest management professionals. View or subscribe to the blog at ucanr.edu/blogs/ucipmurbanpests/.

Disinfectant Safety *...continued from p.2*

USING DISINFECTANTS AND WIPES AGAINST COVID-19

npic NATIONAL PESTICIDE INFORMATION CENTER

WHAT ARE THEY?

Disinfectants kill viruses, bacteria, and fungi on surfaces. Products on EPA's "List N" are expected to control COVID-19. To see if your product is on List N, look for the EPA Registration Number on your label. If you have questions, call NPIC M-F 8am-12pm PT at 800-858-7378.

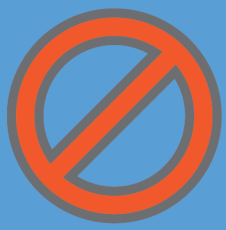
HOW DO I USE THEM?

Disinfectants may not work on unlisted surfaces. Follow your label carefully.

Follow the contact time (how long the surface must stay wet).

Pre-clean surfaces with soap and water first.

CAN I USE THEM ANYWHERE?



Do not use wipes on food. Only use on food contact surfaces if the label says so. Check for rinsing instructions on the label.

Do not let children (under age 18) use disinfectant wipes.

Do not use them to clean hands.

Do not use as baby wipes.

HOW DO I MINIMIZE RISK?

Never mix cleaning products. Leave them in their original container.

Wear protective gear like gloves, masks, and eyewear. Do not reuse disposable gear if contaminated with disinfectant.

Wash hands after use.

Always follow the label, including listed surfaces and contact times.

Store out of reach of kids.

Open windows and use fans to ventilate. Step away from odors if they become too strong.

INFOGRAPHIC COURTESY OF NATIONAL PESTICIDE INFORMATION CENTER

Lawn Problems: Diseases Are Not Always To Blame

Your customers want their lawns to be beautiful and functional (Figure 1) but dead patches or other problems sometimes occur. Figuring out the cause of turfgrass damage can be a challenge since many plant pathogens affect grasses as well as numerous abiotic (non-living) disorders can impact the quality of lawns, playing fields, and other turf areas.

Keeping turfgrass healthy is essential for reducing damage due to both diseases and abiotic disorders. Following recommended practices regarding irrigation scheduling, integrated pest management, fertility, mowing height, soil aeration, and other measures is your customer's best line of defense.

Identify the cause of unhealthy grass

Ask your customer the following questions to help determine whether the cause is due to abiotic or biotic issues.

- Is the problem confined to one area or across the entire lawn?
- When did the problem begin? Could it be seasonal?
- Have there been unusual changes in the climate or microclimate?
- What are the lawn care practices? Have there been recent changes?

Some answers to these questions include:

- Too much or too little water that may impact several plant species irrigated on the same valve as the turf.
- Herbicide injury and fertilizer applications can also impact several plant species growing in the lawn area.
- Many fungi resulting in plant diseases are confined to one species of turf and often do not impact surrounding plants.

Knowing that damage from abiotic causes does not spread can be helpful. Disease and insect infestations almost always spread outward from the initial point of damage. Also, diseases and insects can often be identified by specific symptoms.

CA REYNOLDS, UCIPM

Figure 1. A healthy backyard lawn.

J JARTIN, UCCE

Figure 2. Brown spot on turf on a slope caused by uneven sprinkler coverage.

In addition to the symptoms, damage from diseases often leave telltale signs of the pathogen. Examples include light colored cotton-like growth on leaves, areas of chlorotic (yellow) grass surrounding healthy appearing grass, rotted roots and crowns, and hard structures called sclerotia.

Common causes of abiotic disorders

Irrigation. Uneven irrigation is a very common cause of discolored lawns (Figure 2). It is important to fix broken sprinklers and conduct "catch can tests" to determine the amount of water applied by the sprinkler system and the output rate of the system. The UC ANR *Lawn Watering Guide for California* (see Resources) explains how to implement these practices and how much water a lawn needs based on the local climate, the type of grass, and the month. Following these guidelines saves water, reduces soil-borne pathogens common in waterlogged soil, and beautifies lawns.

Nutrients. While over-fertilized lawns often show no damage symptoms, nitrogen-deficient lawns appear chlorotic, thin, and are more prone to fungal diseases such as dollar spot. Most turfgrass needs nitrogen fertilization during the active growing season to stay healthy and attractive. For specific turf recommendations, see the *UC Guide to Healthy Lawns* at ipm.ucanr.edu/TOOLS/TURF/.

Micronutrients such as iron and zinc may also be required. Keep in mind that these and other micronutrients may be temporarily "tied up" in the soil due to high pH (alkaline) but become available to the plant if pH is reduced by adding sulfur or ammonium sulfate.

Another common type of fertilizer damage occurs from uneven application of nitrogen-containing fertilizers across the turf. This results in streaks of dark green grass next to skipped areas that remain light green and later turn yellow (Figure 3).

J JARTIN, UCCE

Figure 3. Turf damaged by uneven application of fertilizer.

Dog urine. Damage from animal urine (especially dogs) occurs most often on dry turf, especially during periods of high temperatures and prolonged drought. Cool season grasses tend to be more impacted since they require 25% more water than warm season grasses. Damaged turf appears wilted and

... continued on page 5

Lawn Problems ...continued from p.4

grayish-green initially. Soon it becomes brown and may die depending on concentration, type of grass, turf hydration, and water leaching. Typical damage is a small center of brown grassless than 6 inches apart surrounded by a dark green ring (Figure 4). Contrary to popular lore, female dogs are not the only canine culprit, since puppies of both sexes squat the first year or so of life.

While damage from animal urine can resemble that from dollar spot and other fungal diseases, it has a darker green outer ring that is often much taller than the surrounding grass and does not have fungal structures (mycelium or mushrooms).

For specific information on managing lawn damage caused by dog urine, see UC ANR Publication 8255 *Lawns 'n' Dogs* at anrcatalog.ucanr.edu/Details.aspx?itemNo=8255.

Remember that proper turf maintenance can greatly reduce the incidence of abiotic and biotic disorders and that more than one factor may be responsible for the damage. Since both insects and diseases often attack plants already stressed by abiotic factors, addressing abiotic disorders is essential to reducing the impact of insects and diseases. Grass that is already suffering from abiotic disorders can be susceptible to disease. This can result in pest and disease outbreaks that otherwise may have been avoided. See to ipm.ucanr.edu for UC IPM *Pest Notes* that can help you identify both biotic and abiotic problems.

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EJ PERRY, UCCE

Figure 4. Turfgrass killed by dog urine.

Resources

Lawn Watering Guide for California
ucanr.edu/files/47995.pdf

UC Guide to Healthy Lawns
ipm.ucanr.edu/TOOLS/TURF/

Pesticide Brief: Using Pesticides Safely

In addition to helping customers select the right pesticide for their pest issues, retail nursery and garden center employees play an important role in helping customers understand how to apply the material correctly.

CA REYNOLDS, UCIPM

You can start by advising them to read the label. Point out any risks associated with using the product as indicated by the signal word, usually located on the front of the label. Signal words can be CAUTION, WARNING, or DANGER with danger being the most toxic and caution being the least. Be sure to show them where to find the directions for use so they use the correct amount of product and method of application.

Emphasize that pesticide containers need to be tightly sealed after use and stored in a locked cabinet away from children or pets. Pesticides should be kept in their original containers and never in any type of container commonly used for food, beverages, or other household products.

Every year, both adults and children become sick from being exposed to pesticides after not following the label instructions. You may have limited time to devote to each customer, but having a quick conversation on pesticide safety may help prevent potential misapplication and pesticide poisoning incidents.

For more about pesticide use and safety, see *Pesticides: Safe and Effective Use in the Home and Landscape* at ipm.ucanr.edu/PMG/PESTNOTES/pn74126.html.

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WHAT IS IPM? Integrated Pest Management (IPM) programs focus on long-term prevention of pests or their damage through a combination of techniques including resistant plant varieties, biological control, physical or mechanical control, and modification of gardening and home maintenance practices to reduce conditions favorable for pests. Pesticides are part of IPM programs but are used only when needed. Products are selected and applied in a manner that minimizes risks to human health, beneficial and nontarget organisms, and the environment.

New and Recently Revised *Pest Notes*

Armillaria Root Rot

In the new *Pest Notes: Armillaria Root Rot*, UCCE Advisor A. James Downer details research-based techniques for prevention and management of this common disease of landscape trees and plants, and provides color photographs to aid in identification.

ipm.ucanr.edu/PMG/PESTNOTES/pn74171.html

Carpet Beetles

Carpet beetles are pests in homes, museums, and warehouses and are difficult to control because of their preference for undisturbed locations and their wide range of food sources. See the recently updated *Pest Notes: Carpet Beetles* by UC Riverside entomologist Dong-Hwan Choe.

ipm.ucanr.edu/PMG/PESTNOTES/pn7436.html

Cockroaches

People are often at a loss about what to do to get rid of cockroaches. UC IPM Advisor Andrew Sutherland and UC Riverside entomologists Dong-Hwan Choe and Michael Rust tackle the problem of cockroach management in the newly revised *Pest Notes: Cockroaches*.

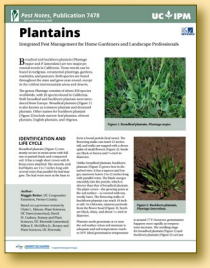
ipm.ucanr.edu/PMG/PESTNOTES/pn7467.html

Mosquitoes

The newly revised *Pest Notes: Mosquitoes* by UC Riverside entomologist William Walton and UC Davis entomologist Bruce Eldridge includes information about the *Aedes* genus, vectors of Zika virus and other deadly viral pathogens.

ipm.ucanr.edu/PMG/PESTNOTES/pn7451.html

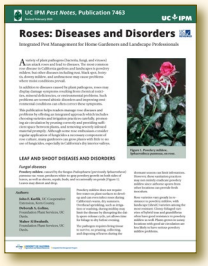
Plantains



Turfgrass managers and home gardeners alike struggle to control the perennial weeds buckhorn and broadleaf plantain. UCCE Advisor Maggie Reiter has updated *Pest Notes: Plantains* with tips on management and a table of currently registered herbicides.

ipm.ucanr.edu/PMG/PESTNOTES/pn7478.html

Roses: Diseases and Disorders



The newly revised *Pest Notes: Roses: Diseases and Disorders* by UCCE Advisor John Karlik provides an integrated approach to managing rose problems that includes careful variety choice, proper irrigation, correct pruning, and sanitation.

ipm.ucanr.edu/PMG/PESTNOTES/pn7463.html

Visit UC IPM's *Pest Notes* web page for these and many more titles.
ipm.ucanr.edu/PMG/PESTNOTES

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For more information about managing pests, contact your University of California Cooperative Extension office, or visit the UC IPM website at ipm.ucanr.edu.

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Always read and carefully follow all precautions and safety instructions provided on the pesticide container label, as well as any other regulations regarding the use of pesticides. Not following label directions, even if they conflict with information provided herein, is a violation of state and federal law. No endorsements of named products are intended, nor is criticism implied of products not mentioned.