



MICROBIAL PEST CONTROL

- **AMANDA COUTURE**
- **BOARD OF PESTICIDES CONTROL**

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- **MAINE BOARD OF PESTICIDES CONTROL**
- **PESTICIDES@MAINE.GOV**
- **(207)287-2731**
- **Thinkfirstspraylast.org**

WHO NEEDS A COMMERCIAL LICENSE?

- ANYONE WHO APPLIES ANY PESTICIDE...
 - FOR ANY TYPE OF COMPENSATION
 - IN AREAS OPEN TO THE PUBLIC
 - AS A GOVERNMENT EMPLOYEE, INCLUDING SCHOOL EMPLOYEES
 - ALSO INCLUDES APPLICATION OF RESTRICTED USE PESTICIDES FOR OTHER THAN AGRICULTURAL PURPOSES (E.G., TERMITE CONTROL)



No endorsement intended or implied



CERTIFICATION & LICENSING FOR COMMERCIAL APPLICATORS

YOU MUST BECOME CERTIFIED TO BE ELIGIBLE FOR A LICENSE (COA)

CERTIFICATION = PASSING EXAMS

- CORE EXAM
- CATEGORY EXAM—IN THIS CASE 7C3

MUST SCORE AT LEAST 80%

THIS WILL CERTIFY YOU TO APPLY FOR A COMMERCIAL OPERATOR APPLICATOR LICENSE



CERTIFICATION & LICENSING FOR COMMERCIAL APPLICATORS

EVERY SCHOOL SYSTEM WISHING TO USE POWERED APPLICATION EQUIPMENT MUST HAVE AT LEAST ONE COMMERCIAL MASTER APPLICATOR (CMA)

CERTIFICATION = PASSING EXAMS

- CORE EXAM
- CATEGORY EXAM—IN THIS CASE 7C3
- WRITTEN REGULATIONS EXAM
- VERBAL EXAM WITH A BPC STAFF MEMBER

MUST SCORE AT LEAST 80%

THIS WILL CERTIFY YOU TO APPLY FOR A COMMERCIAL MASTER APPLICATOR LICENSE



HOW DO YOU COMPLY?

- COMMERCIAL APPLICATOR EXAMS ARE NORMALLY OFFERED IN AUGUSTA
- THE BPC WILL WORK WITH SCHOOL EMPLOYEES TO OFFER EXAMS AT ADDITIONAL LOCATIONS WHEN NEEDED
 - SEND IN A PAPER APPLICATION
 - PESTICIDES@MAINE.GOV
 - EXAMS WILL BE SCHEDULED IN AN AREA NEAR YOU



WHAT TYPES OF USES ARE EXEMPT FROM REQUIRING A LICENSE ?

- ROUTINE “HAND” CLEANING BY CUSTODIAL STAFF



- APPLICATION OF PAINTS, STAINS OR WOOD PRESERVATIVES



Training for Category 7C3

1. Microorganisms

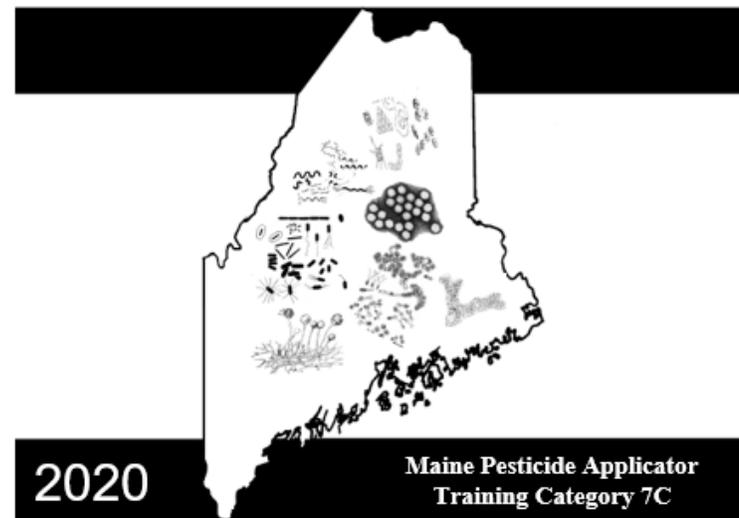
2. Antimicrobial Pesticides

3. Mold Remediation

This manual can be purchased through the University of Maine Cooperative Extension Office.



MICROBIAL PEST CONTROL



Microorganisms - Benefits

- Synthesize – Nutrients
- Digest – Carbohydrates
- Control – Harmful Microorganisms
- Manufacture – Antibiotics
- Waste Water -Treatment



Microorganisms - Benefits

- Fermentation – Beer
- Fix – Nitrogen
- Decomposition – Dead Organic material
- Production – Biofuels



Microorganisms - Detrimental

- Infections – Illness
- Plants – Crop destruction
- Animals - Toxins
- Disease - Cancer
- Spoilage - Food
- Metal - Corrosion
- Environment – Fish Kills



Pesticide Risks

- ❖ Direct Contact
 - ❖ Breathing
 - ❖ Skin
 - ❖ Eating
- ❖ Residues
 - ❖ Food
- ❖ Water Contamination
 - ❖ Ground Water
 - ❖ Surface Water



READ THE LABEL BEFORE...

- BUYING THE PESTICIDE
- STORING THE PESTICIDE
- MIXING AND APPLYING THE PESTICIDE
- DISPOSING OF UNUSED PESTICIDE AND EMPTY CONTAINERS



Disinfectants and Sanitizers are Pesticides

- ✓ Chemicals (including 'green' and 'natural' products)
- ✓ Regulated by Federal and State Agencies to protect human health



Antimicrobial Products

- ORGANIC ≠ SAFE

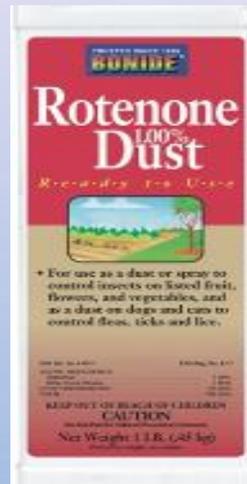


ALL PESTICIDES HAVE RISKS!!!

Synthetic ≠ Highly Toxic



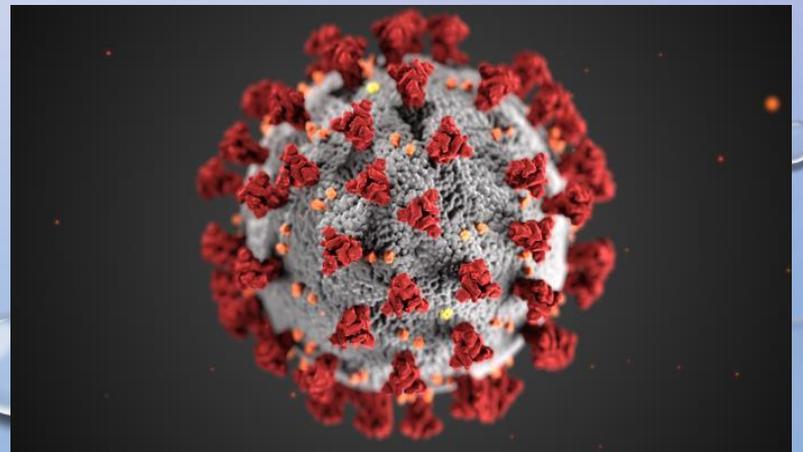
- NATURAL ≠ SAFE



No endorsement intended or implied

Microorganisms

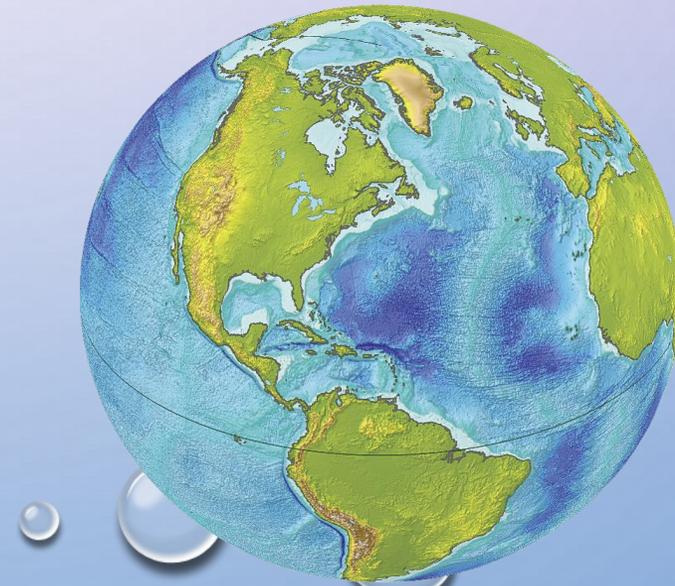
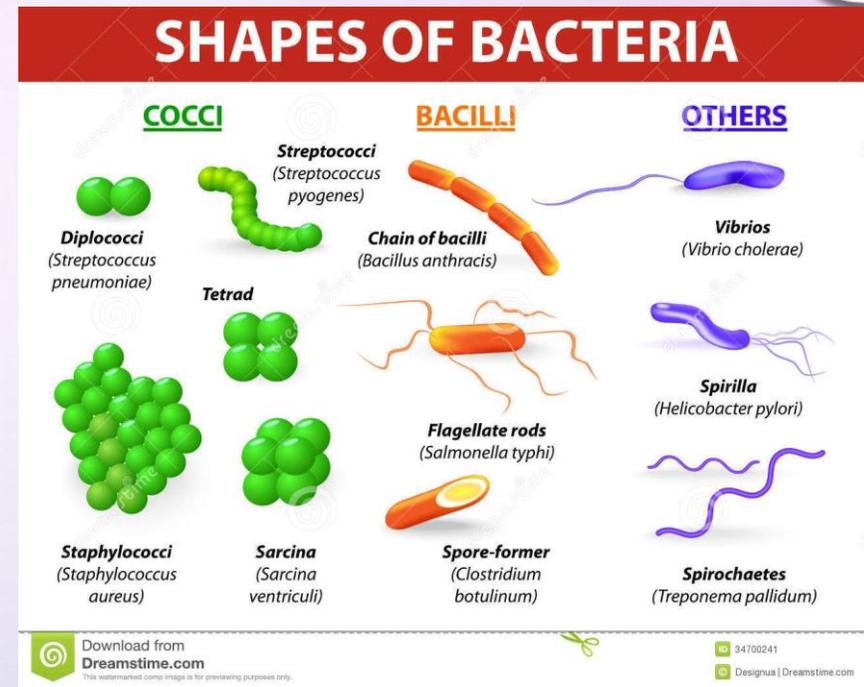
- Single Cell
- Multiple Cells
- No cell



Bacteria

□ Unicellular (single celled)

□ Occur Everywhere



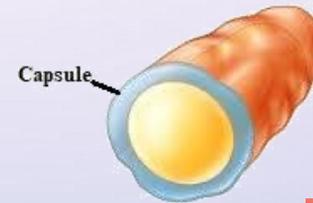
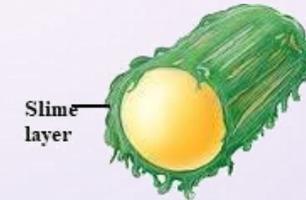
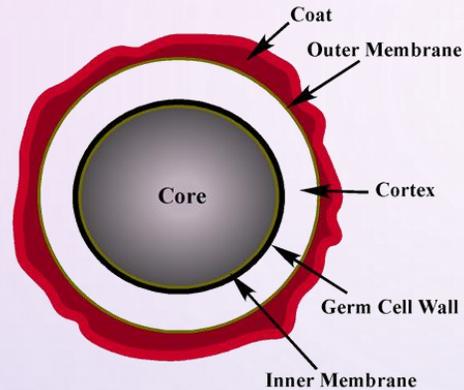
Bacteria Characteristics

Endospore

Motility

Encapsulation

Biofilms



Disinfectants may not kill endospores

Infection and Disease

Some microbes cause serious illness

Example: Campylobacteriosis is an infectious disease caused by **Campylobacter** bacteria which can cause diarrhea and sickens about 1.5 million people in the US annually.



Fungi

➤ Single or multi-cellular



➤ 1.5 million species



➤ Disease – Plant and humans



Fungi

Molds





MOLD & MILDEW SOLUTIONS

STEP 3 CONTROL
Clear Mold Resistant Barrier

INHIBITS MOLD & MILDEW

For use in: BATHROOMS • BASEMENTS • ATTICS • MUD ROOMS • LAUNDRY ROOMS • GARAGES • AND OTHER HOUSEHOLD AREAS

- Dries on surfaces to create an invisible antimicrobial shield that inhibits and prevents new mold growth
- Ideal for mold prevention in homes
- Suitable for use on most surfaces

STORM SYSTEM
MOLD & MILDEW SOLUTIONS

STEP 3 CONTROL
Clear Mold Resistant Barrier
INHIBITS MOLD & MILDEW



6 11131 00491 3

KEEP OUT OF REACH OF CHILDREN
CAUTION: See back panel for additional precautionary statements and first aid statements.
EPA Reg. No. 10324-104-42708
EPA Est. No. 8325-PA-01

ACTIVE INGREDIENTS:
Dicyl Decyl Dimethyl Ammonium Chloride 0.020%
Dioctyl Dimethyl Ammonium Chloride 0.013%
Dioctyl Dimethyl Ammonium Chloride 0.013%
Alkyl (C14, 50%; C12, 40%; C16, 10%) dimethyl benzyl ammonium chloride 0.034%
INERT INGREDIENTS: 99.914%
TOTAL 100.000%

69004
NET CONTENTS: 1 GALLON

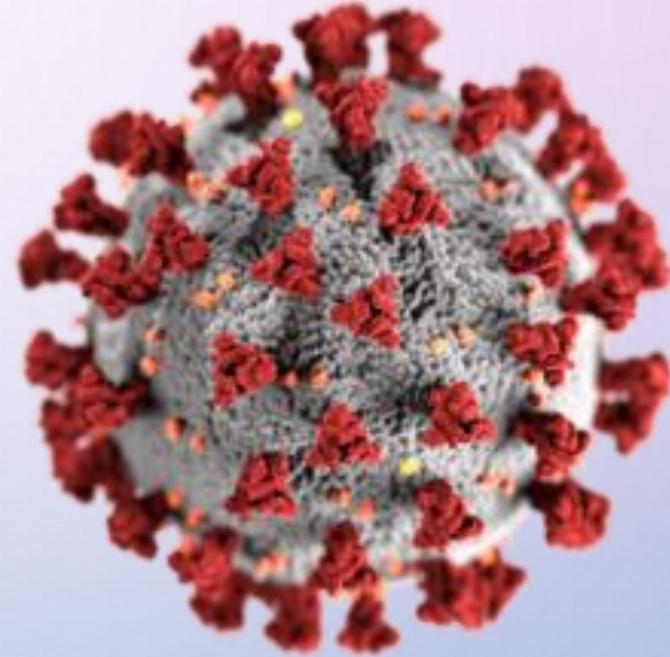
Clean Up

Individuals who clean up after rodent infestations are likely to be infected by *Leptospira interrogans*



Viruses

- ✓ Not even a cell
- ✓ No internal metabolism
- ✓ Cannot move on their own
- ✓ Cannot reproduce on their own
- ✓ Infectious packets
DNA RNA
- ✓ Size



Microbial Pest Management

- ✓ Prevention
- ✓ Scrubbing
- ✓ Filtration
- ✓ pH Adjustment



EFFECTIVE MICROBIAL PEST CONTROL REQUIRES MULTIPLE STRATEGIES

Microbial Pest Management

✓ Wet / Dry Heat

✓ Boiling

✓ Radiation

✓ Ultrasonic



Microbial Pest Management

✓ Ozone

✓ Chemical Control



Microbial Pest Management

✓ Chlorine

Chlorine is a strong oxidizer and cannot be applied to some materials



PESTICIDE REGISTRATION

- TO BE LEGAL FOR USE IN MAINE, ALL PESTICIDES MUST BE REGISTERED BY BOTH:

- EPA*
- BPC



*Some “reduced risk” pesticides have been deregulated by the EPA

ALERT: Stay up to date on [Maine's COVID-19 Response](#)

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Board of Pesticides Control

Pesticide Certification Exam Information

- We are now contacting and scheduling exam applicants who have not yet been scheduled due to the ongoing COVID-19 emergency.
- Applicants may register for an exam via paper application only.
- To schedule a private and agricultural basic exams please call the BPC office at 207-287-2731.
- Please continue to monitor our website regarding exam applications.
- If you have any questions please contact Board staff at pesticides@maine.gov.

Disinfectants and COVID-19

- **Maine Registered Disinfectants for Use Against COVID-19 - 07/24/2020** ([Excel 58KB](#))
Products on this list include Maine registered disinfectants that meet EPA's criteria for use against SARS-CoV-2, the novel coronavirus that causes the disease COVID-19. The list will be updated often. If you have any questions about products please contact our office at pesticides@maine.gov.
- [EPA accepted pesticides for Coronavirus COVID-19 mitigation](#) (Source: EPA)
This site provides information on EPA's criteria for determining which pesticides are listed for use against SARS-CoV-2.
- [Information on using disinfectants to control the COVID-19 Virus](#) (Source: NPIC)
Find general guidance on using disinfectants effectively. Also find steps to consider to reduce your risk when using disinfectants.
- [Respiratory Protection: Keeping Yourself Safe and Meeting Legal Requirements](#) (Source: NPSEC) - This infographic contains a helpful decision matrix for determining the need for a respirator during pesticide application. It also provides suggestions on which types of respirators will provide equivalent or better protection when a label listed respirator is unavailable.
- [EPA Releases Temporary Guidance on Respiratory Protection for Agricultural Pesticide Handlers During COVID-19](#) (Source: EPA) This temporary guidance outlines approaches to address the unavailability of required respiratory protection and respiratory fit testing that should **first be exhausted before considering any alternative options.**

The next Board of Pesticides Control Meeting is Scheduled to be Held on [July 24, 2020](#).

[NEED CREDITS?](#)

[LOGIN TO BPC ONLINE PORTAL](#)

[LINKS TO USEFUL SITES](#)

[GotPests.org](#) (ID and facts sheets for pests-Maine IPM Council)

[University of Maine Cooperative Extension IPM for Maine Homeowners](#)

[National Pesticide Information Center](#)

2020 Non-Agricultural Pesticide Notification Registry ([PDF](#)) ([Excel](#))

[CONTACT US](#)

AUGUSTA: 207-287-2731

FAX: 207-287-5576

TTY Users: call Maine Relay 711 [more](#)

email: pesticides@maine.gov

The BPC offices are located on the 3rd floor of the Deering building at 90 Blossom Lane, Augusta

[DRIVING DIRECTIONS & MAPS](#)



**ALERT:** Stay up to date on [Maine's COVID-19 Response](#)

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Board of Pesticides Control

Pesticide Registration

The sale and use of pesticide products in Maine must comply with both state and federal law. All pesticide products, including FIFRA 25(b) minimum risk pesticides, distributed or offered for sale in Maine must be registered annually with the Maine Board of Pesticides Control pursuant to the [Maine Pesticides Control Act of 1975](#). Pesticide products not in compliance with this law are subject to immediate *Stop Sale Use Removal Order*.

[Search for Maine Registered Products](#)

New Product Registration

- Pesticide product registration and renewals are only accepted through the Maine BPC Online Portal.
- To create a login follow these [instructions](#)
- Follow these [instructions](#) for navigating the online portal to add and renew products and add new companies.
- Renewals open November 1 of each calendar year.

Submission Guidelines for Labels and Supporting Documents (revised 3-27-2017) [\[PDF\]](#)

FIFRA Section 18 Emergency Exemptions

- U.S. EPA FIFRA Section 18 Emergency Exemption Information [\[PDF\]](#) or [Word](#)
- Maine currently has no Section 18 registrations.

FIFRA Section 24(c) Special Local Needs Exemptions

- Board policy for 24(c) applications: Special Local Needs [\[PDF\]](#) or [RTF](#)
- [24\(c\) registrations currently in effect](#)
- U.S. EPA [24\(c\) guidance](#)

FIFRA Section 25(b) Minimum Risk Pesticides

- Universal Statement of Formula ([fillable form](#))
- U.S. EPA [Minimum Risk Pesticide Information](#)
- U.S. EPA [Inert Ingredients Eligible for FIFRA 25\(b\) Pesticide Products \(PDF\)](#)
- U.S. EPA Pesticide Registration (PR) Notice 2000-8: [Minimum Risk Pesticides Exempted Under FIFRA Section 25\(b\) Clarification of Issues \(PDF\)](#)
- U.S. EPA [Active Ingredients Eligible for FIFRA 25\(b\) Pesticide Products](#)
- U.S. EPA [Inert Ingredients Eligible for FIFRA 25\(b\) Pesticide Products](#)

Contact Information

Mary Tomlinson, Pesticide Registrar/Water Quality Specialist
mary.e.tomlinson@maine.gov
(207)-287-2731

BPC Online Portal

Registrations must be submitted through the online portal. To create a login follow these [instructions](#)

[LOGIN](#) to BPC Online Portal

FEATURED LINKS

[Aquatic Herbicides](#)[24\(c\) Special needs Registrations](#)

CONTACT INFORMATION

Mary Tomlinson, Pesticide Registrar/Water Quality Specialist
mary.e.tomlinson@maine.gov
(207)-287-2731

[Board of Pesticides Control](#)

ATTENTION: Please check the 'Last Update' date on the federal and state data. Due to the social distancing and remote work going on around the country, we expect delays in getting the most up to date data. We want everyone to stay safe out there whether it is from COVID-19 or using unregistered pesticides. If you have questions about the data displayed, please contact the US EPA or the individual state pesticide registration department. We will be working hard to keep these websites available. If you have website issues, the best way to contact us is by email at: npirs@ceris.purdue.edu.

SEARCH MAINE STATE PESTICIDE PRODUCTS

Search for pesticide products currently registered in Maine using *one* of the following methods.

EPA Registration Number:

 - -

Search by the multi-part EPA registration number. You can copy/paste the complete EPA Registration Number into any of the boxes above.

State Product Name:

Search by the full or partial name of a product registered in a state.

State Company Name:

Search by the full or partial name of a company registering products in a state.

Active Ingredient:

Search by the PC code, Chemical Abstract Services Number (CAS) or the full or partial chemical name.

Search

Antimicrobial Pesticides

- cides, cidal - germicides, virucides
- stats, static – fungistats, bacteriostats
- sanitizers
- disinfectants
- sterilants

Antimicrobial Pesticides

- cides, cidal - germicides, virucides



No endorsement intended or implied

Antimicrobial Pesticides

- stats, static – fungistats, bacteriostats



No endorsement intended or implied

Antimicrobial Pesticides

- sanitizers



No endorsement intended or implied

Antimicrobial Pesticides

- disinfectants



No endorsement intended or implied

Antimicrobial Pesticides

- sterilants



No endorsement intended or implied

Antimicrobial Pesticides

FORMULATIONS

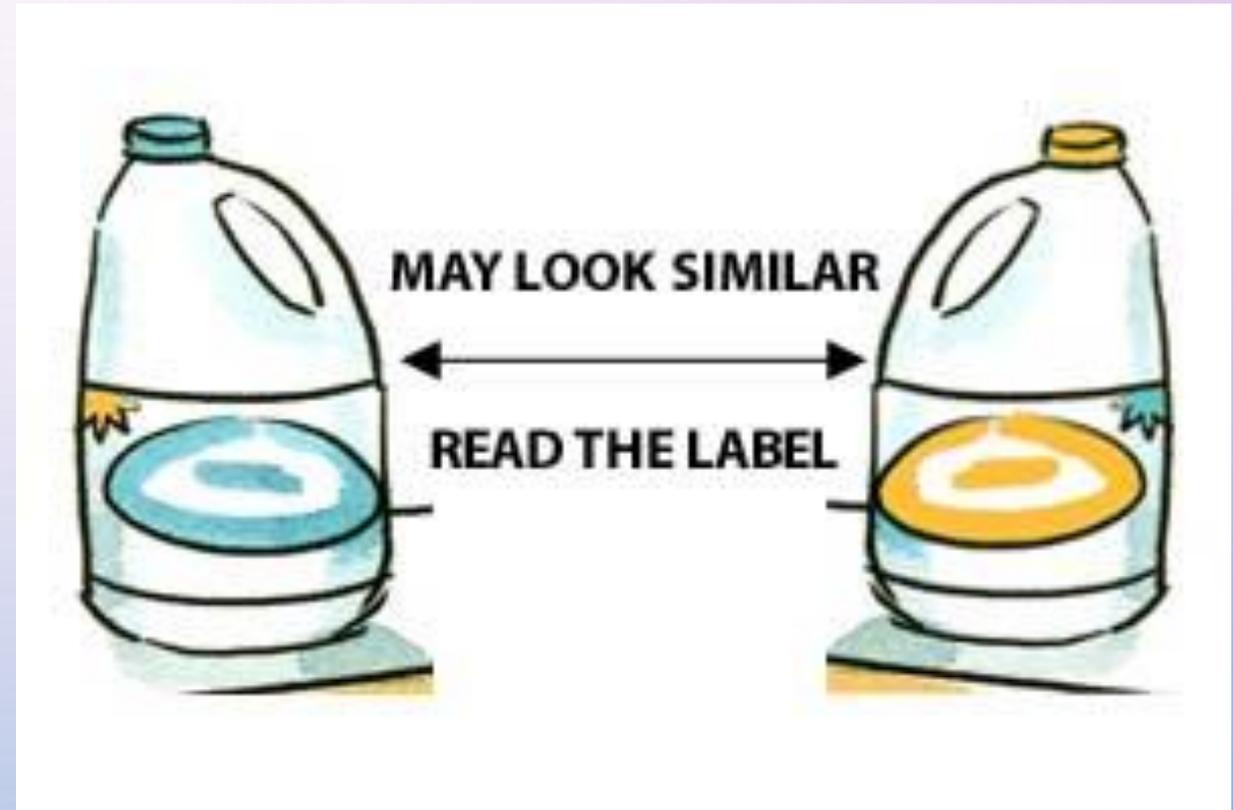
- Concentrated Liquids
- Soluble Solids
- Suspensions and Emulsions
- Aerosols
- Gases



Antimicrobial Pesticides

FORMULATIONS

- Concentrated Liquids



These products need to be diluted

Antimicrobial Pesticides

FORMULATIONS

- Soluble Solids



These products need to be mixed

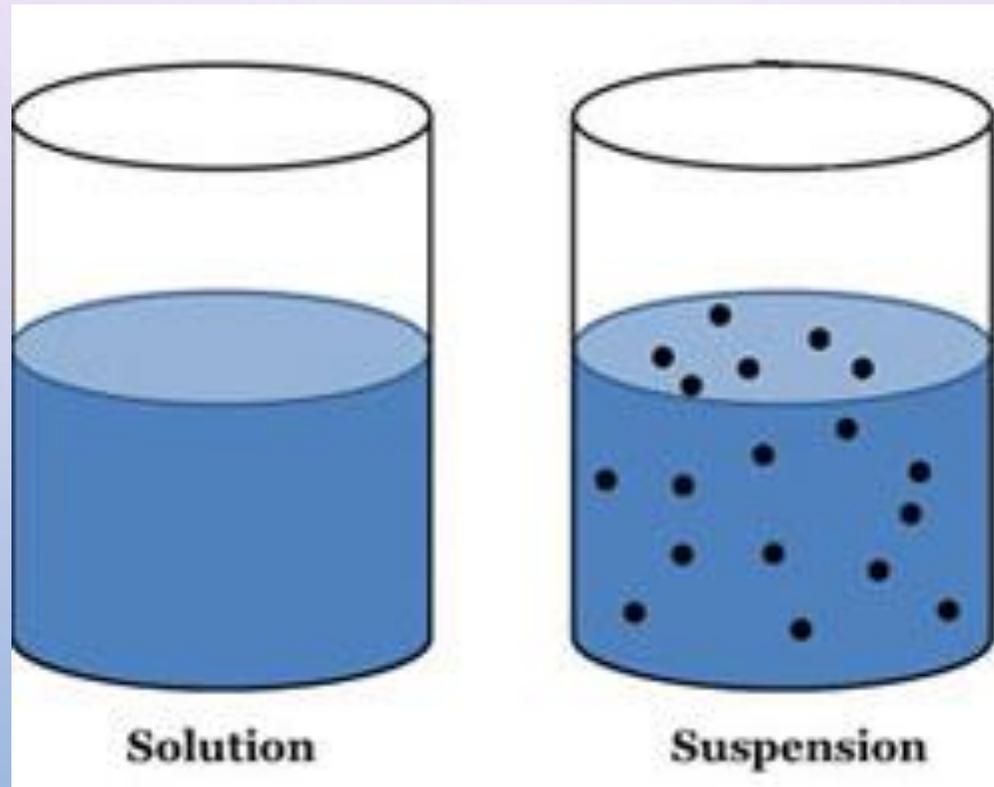


No endorsement intended or implied

Antimicrobial Pesticides

FORMULATIONS

- Suspensions and Emulsions



Antimicrobial Pesticides

FORMULATIONS

- Aerosols



Antimicrobial Pesticides

FORMULATIONS

- Gases
- Often used for sterilization of heat – sensitive items
- Use gaseous antimicrobials in unoccupied, enclosed spaces



Antimicrobial Pesticides

ANTIMICROBIAL EFFECTIVENESS

- Types of microorganisms
 - Vary in their susceptibility
- Number of microorganisms
 - Larger number may require longer exposure
- Age and condition of organisms
 - Older usually are more resistant

Antimicrobial Pesticides

ANTIMICROBIAL EFFECTIVENESS

- Nature of surface
 - Porous – textiles, drywall, ceiling tiles, insulation Porous materials hold moisture longer and have crevices for mold to grow
 - Semi-porous – concrete, cement-based grout unfinished wood
 - Nonporous – tile, plastic, glass, sheet metal, finished wood. Antimicrobials are most effective on nonporous surfaces because they retain little moisture

Antimicrobial Pesticides

ANTIMICROBIAL EFFECTIVENESS

- Concentration
 - Follow the label
- Contact Time
 - Follow the label, varies with organism,
make sure the surface remains wet for the required amount of time
- Hardness of water
 - Calcium, magnesium, iron, will interfere with killing power

Antimicrobial Pesticides

ANTIMICROBIAL EFFECTIVENESS

- Acidity/alkalinity - pH
 - Work at an optimum pH
- Cleanliness and type of surface
 - Presence of organic matter interferes with the effectiveness
 - Porous surfaces may be prohibited on product label

Antimicrobial Pesticides

ANTIMICROBIAL EFFECTIVENESS

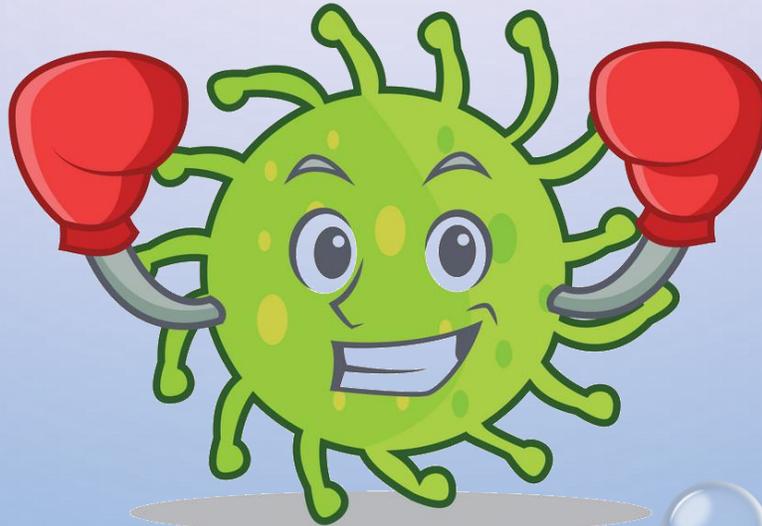
- Temperature
 - Effectiveness increases with increasing temperatures
- Simply using a biocide to kill mold is not adequate because fragments of mold, living or dead, can cause allergic reactions



Antimicrobial Pesticides

ANTIMICROBIAL RESISTANCE

Microorganisms can become resistant to pesticides.



Parasites

Cryptosporidium is a microscopic parasite that causes the diarrheal disease cryptosporidiosis. Both the parasite and the disease are commonly known as “Crypto.” There are many species of **Cryptosporidium** that infect animals, some of which also infect humans.

Cryptosporidium is resistant to most disinfectants



Mold Remediation

DETECTING MOLD

- Hidden mold
- Find the water
- Some mold looks like dust



Mold Remediation

DETECTING MOLD

- Direct association between mold and moisture
- A definitive way to tell if there is mold – send sample to a laboratory



Mold Remediation

DETECTING MOLD

- Moisture meters can be useful in finding potential areas of hidden mold growth
- Hygrometers
- Thermal Imagers



Mold Remediation

REMEDICATION PLAN

- The homeowner or tenant needs to know the “entire” plan
- Containment – level is based on size
- Personal Protective Equipment –
read the label
- Eliminating Dampness – KEY
- Cleanup



Mold Remediation

REMEDICATION PLAN

➤ Containment

Level of containment is based on the size of the area being cleaned

Area's greater than 10 ft² may need added airflow

Most potential for harmful mold exposure is during the remediation

Mold infested items that cannot be cleaned need demolition and removal



Mold Remediation

REMEDICATION PLAN

➤ PPE



Mold Remediation

REMEDICATION PLAN

- Eliminating Dampness



Mold Remediation

REMEDICATION PLAN

- Condensation – major contributor
- Optimum Humidity is 30 to 50 %
- Problems if relative humidity is above 90%
- Moisture problems need to be addressed with 48 hours
- A HVAC system can monitor the moisture in the air with a humidistat

Mold Remediation

REMEDICATION PLAN

- Safe Cleanup and Removal
- Double bag Containment materials
- Successful mold remediation if there is NO mold smell



MICROBIAL PEST CONTROL

REVIEW

- Dwell time or contact time - critical
- Mix Ratios – Read the Label
- Mixing – When most accidents occur
- Reentry Periods – The pesticide used may require the area sprayed to be closed off. Read the Label
- Inhalation Hazard – Respiratory Risk

MICROBIAL PEST CONTROL

REVIEW

- Acute dermal toxicity – highly corrosive – wear the PPE listed on the label
- Disinfectants – very few provide long-term sanitation
- “Buyer Beware” – research pesticidal products
- Products need to be registered in Maine and with the EPA

MICROBIAL PEST CONTROL

REVIEW

- There are differences between regular cleaning, sanitation and disinfecting
- Follow the equipment manufacturer's instructions for all powered applications
- Licensure required
- All chemicals can be harmful



QUESTIONS

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Manager of Pesticide
Programs

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207 538-0362

