Master Gardener Volunteer Horticulture Happy Hour

Session will begin at 4 PM

Pesticide Safety Basics for the Home Gardener

Jen Andon
Program Manager, Master Gardener Volunteer Program, The Ohio State University

Housekeeping

- Schedule, registration, recordings and handouts available: go.osu.edu/mgvlearn
- Scheduled through March 31st
- One (1) hour of Continuing Education
  - Please double check with your CC on how to enter hours if you’re doing so for the first time.

Housekeeping

Next Horticulture Lunch and Learn

- Wednesday, February 9th from 12-1 PM

“The Art of Grafting”
with Paul Snyder, Operations Manager Secrest Arboretum, The Ohio State University

Friendly Reminders!

- Please use Q&A box (not chat) to ask questions which will be addressed at the end of the presentation
- Would really appreciate your responses to the poll at the very end!!

Horticulture Happy Hour February 3rd, 2021

Jen Andon

- Currently serves as the Program Manager for the Master Gardener Volunteer Program at The Ohio State University.
- Received her B.S. in entomology, with a minor in plant pathology from OSU in 2003 and her M.S. in turfgrass entomology in 2008.
- Was a research technician for 13 years conducting field trials on turfgrass insect pests.
- In 2016, she joined the Pesticide Safety Education Program as Program Manager.

Pesticide Safety Basics for the Home Gardener

Jen Andon
M.G.V. Program
The Ohio State University
Do I have a pest? 

YES!!!

Our definitions of pest may differ...

- Lawn full of clover
- A few white grubs
- It all depends on your tolerance of pests...

IPM – Integrated Pest Management

- Biological control - (parasites, parasitoids, pathogens)
- Cultural control - alter conditions (resistant cultivars, crop rotation)
- Mechanical control - physical, hand weeding, dethatch, exclusion, barriers
- Chemical control - pesticides

IPM Tools

- Must identify the pest
- The vast majority of arthropods are not pestiferous
- Vary rarely can you completely eradicate a pest, nor is it necessary

Understanding Pest Biology:

- There are specific times in a pests' life cycle in which it is more susceptible to pesticides
- Application timing may be crucial
- Please reach out to your Extension Educator if you need guidance
What is a Pesticide:
• Any substance that repels, controls, limits, or eliminates a pest.
• Any substance used as an insect growth regulator, plant growth regulator, defoliant, or desiccant.

Types of Pesticides:
• Herbicides kill weeds (includes weed N’ feed)
• Insecticides kill insects
• Acaricides kill mites/spiders
• Fungicides kill fungi
• Molluscicides kill mollusks
• Rodenticides kill rodents
• Antimicrobials kill bacteria, viruses.

Mode of action:
The way in which the pesticide causes physiological disruption to the target pest.

Active Ingredient:
Active ingredients are the chemical that controls the pest and must appear on the pesticide label.

Pesticide Registration
• Pesticides must be registered by the EPA
And
• Pesticides must be registered by the State of Ohio (ODA)

But wait!!

What about Minimum Risk Pesticides? (25b Products)
• Products that pose little to no risk to human health or the environment
• Exempt from regulations under FIFRA
• Not evaluated by EPA for risk assessment
• No validation of product performance
• Products active & inactive ingredients must be listed in 40 CFR 152.2
White distilled vinegar
Table salt
Dish soap

- Acetic acid
- NaCl
- Sodium laurel sulfate

The Label is the Law
“It is a violation of federal law to use this product in a manner inconsistent with its labeling”
*This statement appears on all pesticide labels

ListN Tool:
- EPA expects all products on the N-list to kill the COVID-19 when used according to label directions

Pesticide Product Search

Signal Words
- Category I-Danger
- Category II-Warning
- Category III-Caution
- Category IV-No signal word required
- Based on formulated product
- Does not indicate risk of delayed/allergic effects
**Danger**
- Highly Toxic
- Poison/Skull and Crossbones
  - acute illness through oral or inhalation
- LD₅₀ 0-50
- Few Drops to 1 tsp

**Warning**
- Moderately Toxic
- LD₅₀ 50-500
- 1 tsp - 1 oz

**Caution**
- Slightly Toxic
- LD₅₀ 500-5000
- 1 oz to 1 pint

**Restricted use Designation**
- Practically Non-Toxic
- LD₅₀ >5000
- Over 1 Pint or pound
- Precautionary statement required

ai = carbaryl (carbamate)
Sevin RTU : 5%
Sevin SL : 43%
Ohio is a Site-Specific State

- The site to which you are applying must be on the pesticide label
- The pest in which you are controlling does not have to be listed on the label

If you are applying pesticides to fruits or vegetables, ensure the host plant is listed on the label.
It does not matter how slowly you go as long as you do not stop.
—Confucius

Wear your PPE!

Chemical Resistant Materials
- No material is chemical proof
- Coveralls or aprons (Tyvek, PVC)
- Gloves (Neoprene, butyl or Nitrile, not cotton)
- Footwear (rubber boots, shoe covers, no leather)
- Hats (PVC, plastic, no baseball hats)
- Eye wear (safety glasses or goggles)
- NIOSH approved respirator (full or half face)

Personal Protective Equipment (PPE)
All pesticide handlers (mixers, loaders, and applicators) must wear long-sleeved shirt and long pants, socks, shoes, and chemical-resistant gloves. All pesticide handlers must wear a dust/mist breathing respirator (MSHA/NIOSH approval number prefix TC-210), or a NIOSH approved respirator with any N, R, P, or HE filter, when working in a non-ventilated space, including but not limited to crawl spaces and basements. All pesticide handlers must wear protective eyewear (goggles, a face shield, or safety glasses with front, brow, and temple protection) when working in a non-ventilated space, including but not limited to crawl spaces and basements or when applying termicide by rodent or sub-slab injection.

For cleaning equipment: Wear a chemical resistant apron.
Personal Protective Equipment (PPE) – the minimum

↑ + + + + ?

Safety Tip

Wear Gloves, even if not required by Label

The protective value of gloves

- Farmers who used gloves had 70% less 2,4-D detectable in urine
- Farmers who used gloves had 80% less Captan detectable on hands

Gloves – the first line of defense

Hand without protection shows much more contamination.

Make smart decisions!

Don’t contaminate yourself when removing PPE

Removing PPE – there is a correct order
1. Wash gloves
2. Wash PPE, then
3. Wash and remove gloves

USER SAFETY RECOMMENDATIONS
Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet
Remove work clothes and shower before contact with your family and leave the boots outside the door!

Safety Tip: Wash Work Clothes Separately from Family Wash
- Pesticides can transfer to other items in wash
- Don't wear clothing again until washed

Safety Tip: Discard heavily contaminated clothing
- Don't try to wash
- Can leave residues in washer, dryer
- Not fully removed from clothing

Storage Practices Include:
- Store pesticides out of reach of children in locked cabinet
- Liquids stored beneath dry products
- Separate herbicides & insecticides
- Keep pesticides in original containers with labels attached
- Check for damaged containers

Container Disposal
- Triple rinse
- Don't reuse containers
- Dispose of with household waste
- Wear PPE when cleaning containers
1. Control
2. Contain
3. Clean-up

- Wear PPE
- Don’t rinse into drains
- Use kitty litter or absorbent pads
- Dispose of waste properly
- Check label for disposal instructions

Know the possible signs of Pesticide Poisoning

- Headache, dizziness
- Nausea, vomiting
- Sweating or rash
- Stomach cramps or diarrhea
- Muscle cramps or aches
- Rashes, swelling, or burns

Safety Tip

• Chest pains
• Breathing difficulty
• Muscle cramps or aches
• Rashes, swelling, or burns

Helpful Resources

- Where to find out more about the safety of pesticides
  See NPIC – National Pesticide Information Center
  http://npic.orst.edu/

- How to find out if a pesticide is labeled for use in your state
  See NPIRS (National Pesticide Information Retrieval System)
  http://state.ceris.purdue.edu/

- New ODA Product Search
  https://agri.ohio.gov/divisions/plant-health/pesticides/pesticide-search
Be sure your product is registered for use in OHIO

The OSU Pesticide Safety Education Program
614-292-4070
pested.osu.edu

Thanks!
Questions?
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