



COLORADO MASTER GARDENER TRAINING

# Training Guide:

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# IPM & The Diagnostic Process

## SETTING UP

### Materials needed:

- This Training Guide
- GN #105 Homework and Answers (in this guide)
- GN #103 Worksheet (Pesticide Label activity) copies for class

>> REVIEW HOMEWORK

## GardenNotes #105

Time: 10 minutes

### Homework: IPM & Diagnostics

1. Why is Integrated Pest Management (IPM) the best approach to managing pest problems?

Integrated pest management is the toolbox we use for pest management. It combines cultural, mechanical/physical, biological, and chemical management strategies. We can use any or all of these to manage pest problems in the landscape.

2. Why is it important to discuss tree care issues as they relate to growth phases?

Because different phases of a tree's growth require different management strategies, i.e. water, fertilizer, pruning, etc.

3. What is the first step in the diagnostic process?

The first step in the diagnostic process is to identify the plant you are trying to diagnose. If we don't know the plant, then we are not able to find out what commonly occurs on the plant and we could provide a wrong diagnosis.

4. Why is it important to know what is "normal" for a given plant?

We need to know what the plant is supposed to look like so when looking at a sample we can see if it is looking different than it is supposed to look. Then we can then start to figure out what is abnormal or different and potential reasons for the deviation.

ACTIVITY:

## PESTICIDE LABEL ACTIVITY

Time: 30 minutes

1. Handout worksheets: GardenNotes #103 including pesticide label.
2. Have students team up in small groups or work independently.
3. Give students 5-10 minutes to discuss and answer questions.
4. Bring class back together to review answers. Offer suggestions/clarifications based on the answers in this guide.

*CMG GardenNotes #103*

## Reading Pesticide Labels Worksheet

Find the answers to the questions on the label provided.

*Instructors: the numbers in text boxes correspond to the location for the answers.*

1. What are the active ingredients?  
Sulfur (0.20%) and Pyrethrins (0.01%). (Under CAUTION on front of pesticide label.)
2. Can I apply this product to lilacs? The plant has powdery mildew and aphids .  
Yes, the use site and pests are on the label. Look in “Pest” box next to “Ornamentals” box. Note: even if only the site was on the label (“lilacs” or “trees and shrubs”) it would still be okay to apply the product.
3. I've applied this to my cabbage crop. How long do I have to wait after the application to eat it?  
One day.
4. What is the mode of action for this product?  
It is a “contact killer”. See the green paragraph above “the “Quick Facts” bar.
5. Will this product harm freshwater clams?  
Yes – they’re freshwater invertebrates. (See “environmental hazards”).
6. What action do I take if I accidentally spill this product on my shirt sleeve?  
Take off contaminated clothing. If you get it on your skin, rinse it immediately with plenty of water for 15 -20 minutes. You can also call your doctor or poison control center.

7. How do I dispose of the empty container?  
Label directions say to place in trash or recycle if the service is available.
8. How should I store this product?  
Store at room temperature and keep from freezing.
9. Can I use this product in my greenhouse where I grow culinary herbs for sale?  
No, the label states the product is only for use on home gardens and lawns. It is not to be used on commodities for resale.



# NATRIA<sup>®</sup>

## INSECT, DISEASE & MITE CONTROL

READY-TO-USE

*For use on Roses, Flowers, Shrubs, Houseplants & Vegetables*

*Para usar en rosas, flores, arbustos, plantas de hogar y hortalizas*

- *Kills Fungus, Insects & Mites*
- *Prevents Leaf Loss Caused by Black Spot & Rust*

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION** See back panel for additional precautionary statements

Active Ingredients:

Sulfur	0.20%
Pyrethrins	0.01%
Other Ingredients	99.79%
Total	100.00%

**NET CONTENTS 24 FL. OZ. (709ml)**

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797013456 0.1



**INSECT, DISEASE  
& MITE CONTROL**  
READY-TO-USE

**PRECAUTIONARY STATEMENTS (cont'd)**

**CAUTION Hazards to Humans and Domestic Animals**

- Causes moderate eye irritation. Avoid contact with eyes. Avoid contact with skin or clothing.
- Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

**FIRST AID +**

**IF ON  
SKIN OR  
CLOTHING**

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

**IF  
IN EYES**

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. For additional information on this pesticide product, you may call toll free 1-877-229-3763 for emergency medical treatment information.

**NOTICE TO BUYER:** To the extent consistent with applicable law, seller warrants that this product conforms to the chemical description on this label and is reasonably fit for the purposes stated on this label only when used in accordance with directions under normal use conditions. This warranty does not extend to use of this product contrary to label directions, or under conditions not reasonably foreseeable to seller. To the extent consistent with applicable law, seller makes no other warranties, either expressed or implied.

**Money Back Guarantee:** If you are not satisfied with this product, we will gladly refund your original purchase price.

EPA Reg. No. 67702-15-72155  
EPA Est. No indicated by 3rd and 4th digits of the  
batch number on this package.  
(47)= 52251-OR-005 (65)= 432-TX-1  
(57)= 071106-GA-003



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Distributed by: Bayer Advanced  
A Business Unit of Bayer CropScience LP  
P.O. Box 12014, 21 W. Alexander Drive  
Research Triangle Park, NC 27709

PRESS TO RESEAL

79713606d 140403AV1



**INSECT, DISEASE & MITE CONTROL** READY-TO-USE

**OPEN**  
Resealable Label  
for Directions &  
Precautions

*This product controls a wide range of fungal diseases and pests. For use on roses, flowers, houseplants, ornamental trees and shrubs, fruits, nuts, and vegetables. Contact killer for both insect and mite pests. Convenient and Easy-to-use.*

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**READ THE LABEL FIRST!**



**QUICK FACTS**

<ul style="list-style-type: none"> <li>• Controls Insects, Fungal Diseases and Mites Including Spider Mites</li> <li>• For Use on Plants – Indoors &amp; Outdoors</li> </ul>	
<ul style="list-style-type: none"> <li>• Use Up to Day Before Harvest</li> </ul>	
<b>KILLS</b>	Ants (excluding Fire Ants, Harvester Ants, Pharaoh's Ants and Carpenter Ants), Aphids, Mites, Spider Mites, Leafhoppers, Caterpillars, Rose Slugs, Whitefly, Spittlebugs, Mealybugs, Scale, Thrips, Psyllids, Plant Bugs, Lace Bugs, Fruit Flies, and Earwigs.
<b>FUNGAL DISEASES CONTROLLED</b>	Blackspot, powdery mildew, rust, scab, blight, brown rot, and leaf spot.
<b>WHERE TO USE</b>	On roses, flowers, listed fruit and nut trees, vegetables, vine plants, ornamentals and lawns.
<b>WHEN TO USE</b>	When insects, insect damage, or fungal disease first appears.

For questions or comments,  
call toll-free 1-877-BayerAG (1-877-229-3724)

**ACTIVE INGREDIENTS:**

Sulfur .....	0.20%
Pyrethrins .....	0.01%
<b>OTHER INGREDIENTS</b> .....	<b>99.79%</b>
<b>TOTAL</b>	<b>100.00%</b>

**EPA Reg. No. 67702-15-72155**

EPA Est. No indicated by 3rd and 4th digits of the batch number on this package. (47) = 52251-OR-005  
(65) = 432-TX-1 (57) = 071106-GA-003

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**FOR USE ONLY ON RESIDENTIAL LAWNS AND BARRIERS**



## DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

### USE PRECAUTIONS

- Some varieties of grapes and cucurbits are sensitive to sulfur and some plant damage may occur.
- Use care or do not spray on sulfur sensitive plants. If not sure, test spray a few leaves 2 days before spraying the entire plant.

### USE RESTRICTIONS

- Do not apply to strawberry fruit that will be used for canning.
- Do not wet plants to point of runoff or drip.
- Do not water the treated areas to point of runoff or drip.
- Do not make applications during rain.
- Not for use in outdoor residential misting systems.
- Do not apply more than 10 times per season.
- Do not reapply within 3 days except under extreme pest pressure.
- In case of extreme pest pressure do not reapply within 24 hours.
- Do not apply more than 1 time per day.
- Do not apply more than 18.5 fl. oz. per 100 square feet per application.
- Do not use if temperatures are expected to be over 90°F.
- Do not apply this product in a way that will contact adults, children or pets, either directly or through drift.
- Remove pets, birds, and cover aquariums before spraying.
- Remove or cover exposed food and drinking water before application.
- Remove or cover dishes, utensils, food processing equipment, and food preparation surfaces, or wash them before use.
- Do not apply directly to or near water, storm drains, or drainage ditches. Do not apply when windy. To prevent product runoff, do not over water treated area(s) or apply prior to heavy rainfall.
- Do not apply directly into sewers or drains, or to any area like a gutter where drainage to storm sewers, water bodies, or aquatic habitat can occur.
- Do not allow the product to enter any drain during or after application.
- Do not allow adults, children or pets to enter the treated area until sprays have dried.
- Do not spray plants with this product within 21 days of an oil spray.

## BEFORE YOU USE

## DIRECTIONS FOR USE (cont'd)

### FOR CONTROL OF FUNGAL DISEASES

Controls a wide range of fungal diseases including: blackspot, powdery mildew, rust, scab, blight, brown rot, and leaf spot. Thoroughly spray all areas of the plant, especially new shoots. For best control apply as a protective spray early in the season before the diseases are noticed. Re-spray every 7 to 10 days or after rain. May be used up to day before harvest.

### FOR CONTROL OF INSECTS/MITES

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## HOW TO USE

Shake well before using. Do not dilute.

Controls a wide range of pests including: Ants (excluding fire ants, harvester ants, Pharaoh's ants and carpenter ants), Aphids (including Green Peach Aphid), Armyworm, Bagworm, Beet Armyworm, Beetles (including Asparagus Beetle, Bean Beetles, Blister Beetles, Colorado Potato Beetles, 12-spotted Cucumber Beetles, Cucumber Beetles, Darkling Beetles (lesser mealworm), Saw-toothed Grain Beetle, Elm Leaf Beetles, Flea Beetles, Japanese Beetles, Mexican and Bean Beetles), Blowflies, Borers (including European Corn Borer, and Squash Vine Borer), Cabbage Looper, Cabbageworms (including Cross-striped Cabbageworm and Imported Cabbageworm), Cankworms, Caterpillars (including Eastern Tent Caterpillar, Forest Caterpillar and Tent Caterpillar), Crane Flies, Crickets, Diamondback Moth Larvae, Earwigs, Fireworms, Fungus Gnats, Fruit Flies, Glassy Winged Sharpshooter, Grape Leaf Skeletonizer, Green Fruit Worm, Harlequin Bug, Hornworms including Tomato Hornworm, Katydid, Lace Bugs, Leafhoppers (including Grape Leafhopper, and Potato Leafhoppers), Leafminers, Leafhoppers, Looper, Leafrollers (including Fruit Tree Leafroller), Lygus, Maggots (including Apple Maggot and Onion Maggot), Mealy Bugs, Midges, Millipedes, Mites (including Spider Mites and Clover Mite), Moths (including Artichoke Plume Moth, Coddling Moth, Diamondback Moth, European Pine Tip Moth, Gypsy Moth (adults and larvae), Indian Meal Moth and Mediterranean Flour Moth), Mushroom Flies, Navel Orange worm, Pear Psylla, Plant Bugs, Psyllids, Rosehug, Scale, Silverfish, Skippers, Sowbugs, Spittlebugs, Squash Bugs, Stink Bugs, Tarnished Plant Bug, Thrips (including Greenhouse Thrips, Vinegar Flies, Webworms, Weevils (including Boll Weevil, Carrot Weevil, Clover Weevil and Rice Weevil), Whitefly Thoroughly spray all areas of the plant, especially new shoots and underside of leaves. Pests need to be contacted by the spray to be controlled. For use only on residential lawns and gardens. Not for use on agricultural establishments growing agricultural crops or commodities for resale.

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## DIRECTIONS FOR USE (cont'd)

USE SITE – INDOOR, OUTDOOR AND GREENHOUSE	PEST	DISEASE
<b>FRUIT AND NUT TREES:</b> Almond, apple, cherry, citrus, filbert, nectarine, peach, pear, plum, prune, walnut	ants (excluding fire ants, harvester ants, Pharaoh's ants and carpenter ants), aphids, apple maggot, beetles, mites, moths, spider mites, leafhoppers, leafrollers, leafminers, caterpillars, whitefly	scab, powdery mildew, rust, blight, brown rot
<b>VEGETABLE AND VINE PLANTS:</b> beans, beets, blackberries, blueberries, broccoli, brussel sprouts, cabbage, carrots, cauliflower, corn, cucurbits, (cucumber, melons, pumpkins and squash), currant, gooseberries, grapes, kale, onions, peas, peppers, potatoes, raspberries, strawberries, tomatoes	ants (excluding fire ants, harvester ants, Pharaoh's ants and carpenter ants), armyworms, beetles, cabbage worms, squash vine borer, armyworms, aphids, mites, spider mites, leafhoppers, leafrollers, leafminers, loopers, onion maggots, caterpillars, whitefly, spittlebugs, mealybugs, scale, thrips, psyllids, plant bugs, fruit fly, earwigs, weevils	powdery mildew, rust, blight, leaf spots
<b>ORNAMENTALS:</b> flowering plants and shrubs, woody ornamentals, roses, trees and houseplants	ants (excluding fire ants, harvester ants, Pharaoh's ants and carpenter ants), aphids, beetles, mites, spider mites, leafhoppers, leafrollers, leafminers, armyworms, loopers, caterpillars, rose slugs, whitefly, spittlebugs, mealybugs, scale, thrips, psyllids, plant bugs, lacebugs, earwigs, weevils	powdery mildew, rust, blight, black spot, leaf spots
<b>LAWNS</b>	aphids, mites, spider mites, leafhoppers, caterpillars, beetles, spittlebugs, thrips, earwigs	rust, leaf spot, blight, powdery mildew

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## STORAGE AND DISPOSAL

<b>PESTICIDE STORAGE</b>	Store at room temperature and protect from freezing.
<b>PESTICIDE DISPOSAL AND CONTAINER HANDLING</b>	<p>Nonrefillable. Do not reuse or refill this container.</p> <p>If Empty:</p> <ul style="list-style-type: none"> <li>Place in trash or offer for recycling if available.</li> </ul> <p>If Partly Filled:</p> <ul style="list-style-type: none"> <li>Call your local solid waste agency or call 1-877-229-3724 for disposal instructions. Never place unused product down any indoor or outdoor</li> </ul>

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## PRECAUTIONARY STATEMENTS

**ENVIRONMENTAL HAZARDS**  
 This product is highly flammable. Do not contaminate water when disposing of equipment, washwater, or rinseate. Do not apply directly to or near water. Drift and run-off may be hazardous to fish in water adjacent to treated areas. See Directions for Use for additional precautions and requirements.

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## PHYSICAL OR CHEMICAL HAZARDS

Combustible. Do not use or store near heat or open flame.

### User Safety Recommendations

- Users should wash hands with plenty of soap and water before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Users should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.