BMPs for Medical Marijuana Pest Management

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Kathy.murray@maine.gov

www.Maine.gov/ipm

The Problem
Pests!

Pesticides are Also Problematic

- $
- Labor
- Worker and patient health risks
- Pest resistance to pesticides
- Pest resurgence
- Regulatory & marketplace restrictions

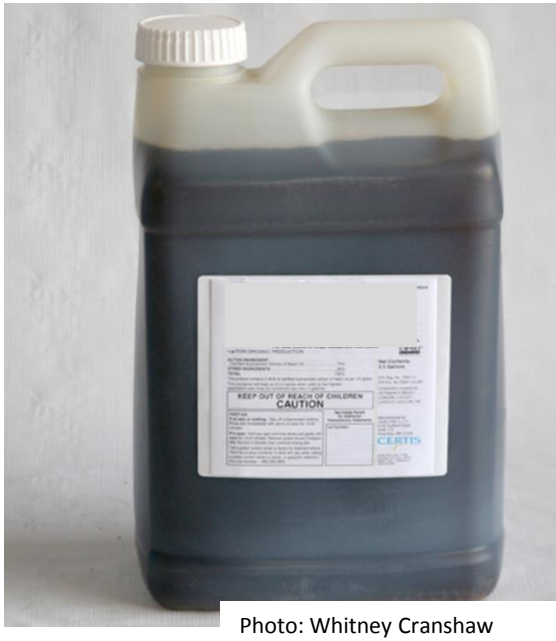
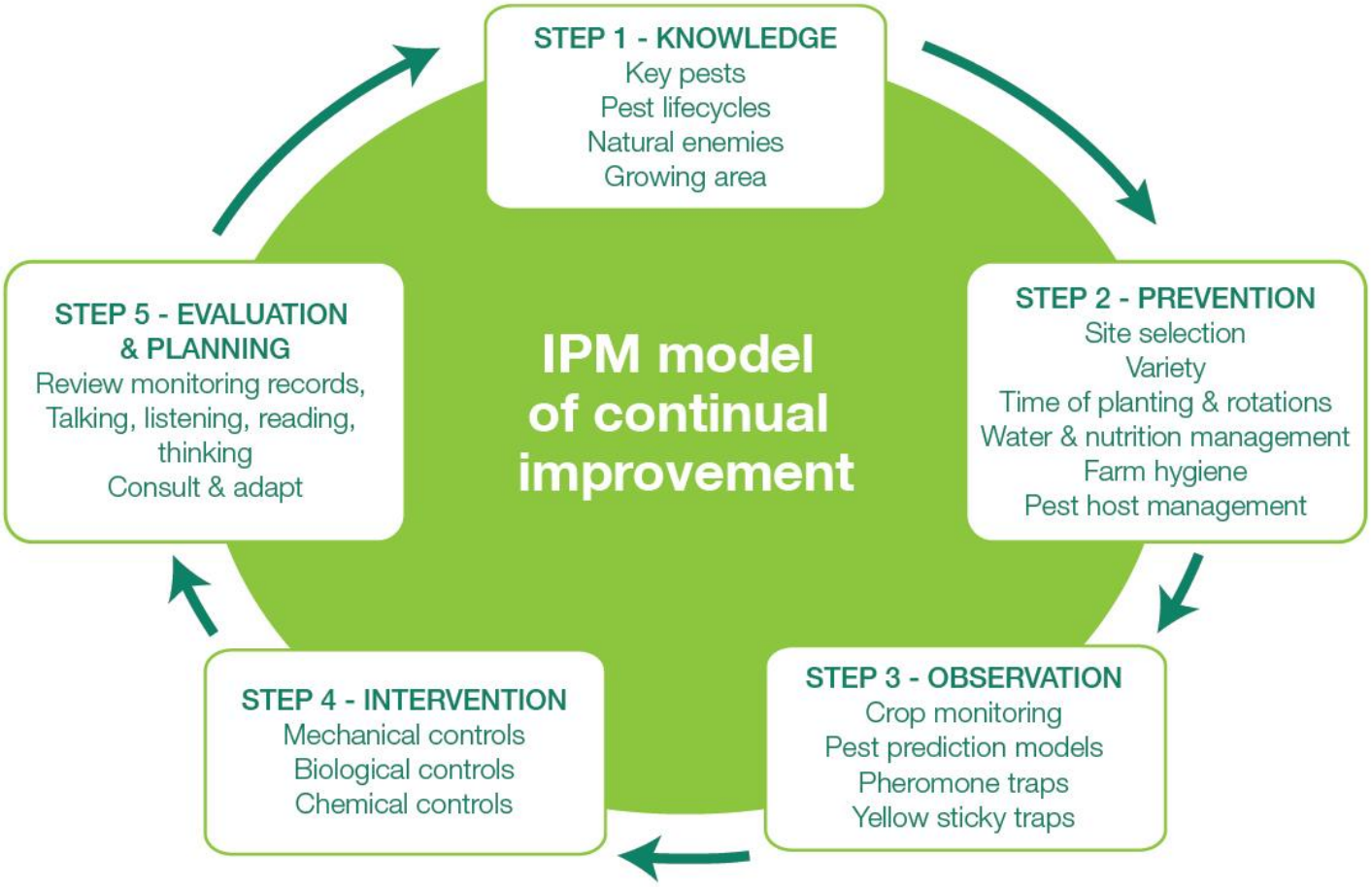


Photo: Whitney Cranshaw

IPM is the Answer!

- Integrated Pest Management
  - Organized and systematic approach to preventing and managing **all** pests
- IPM Offers
  - Minimized risks (health, $, disruption)
  - Effective, long-term pest control
  - Improved crop quality/quantity

Integrated Pest Management



State of Maine

Best Management Practices for Pest Prevention and Management in Maine Medical Marijuana Cultivation

BMP 1: Design and operate facilities to prevent introduction and spread of pests

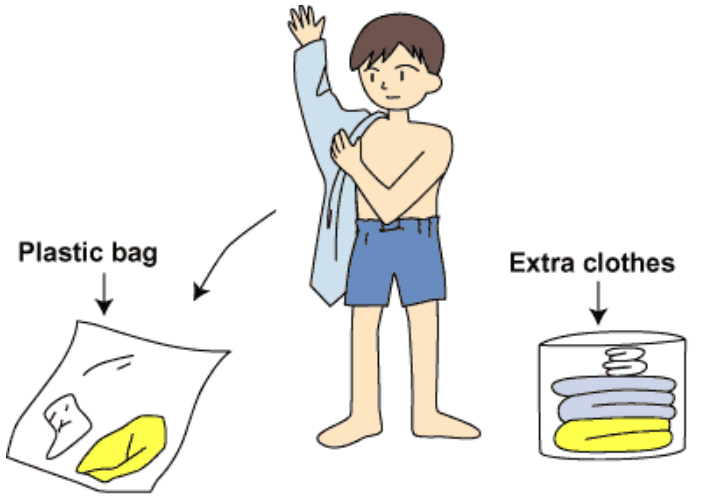
- Keep plants healthy
- Design spaces and processes to permit excellent sanitation and quarantine.
- Indoors: keep pests out and don't give them shelter. Install and maintain air filters. Seal pest entryways, cracks, crevices and voids.
- Outdoors: maintain space around plants, control weeds, install barriers

BMP 2: Use, Store and Dispose Pesticides in Accordance with Regulations

- Know and follow all regulations
- Read and follow product label directions for use, storage and disposal.
- Ensure worker protection standards are met.
- Pesticides only used by licensed applicator unless growing only for self and household patients.
- Ensure any product used is registered and not prohibited for use on *Cannabis* in Maine.

BMP 3: Establish and Utilize Sanitation Protocols to Prevent the Spread of Pests and Contaminants by Workers

- Establish protocols to prevent pests from hitchhiking on workers' clothing, shoes or equipment.
  - Start clean. Keep clean.
  - Work in infested areas last
- Provide training and verify pest preventive procedures are being followed.



Take off contaminated clothes and wear extra ones

BMP 4: Provide Optimal Growing Conditions to Promote Healthy Plants, Encourage Natural Enemies and Minimize Pest Conducive Conditions

Keep Weeds Out! Insect Pests Thrive in weeds!

BMP 5: Implement Effective Procedures to Regularly and Systematically Monitor for Pests

BMP 6: Develop and Utilize an Integrated Pest Management Plan that includes Least-Risk Protocols for Preventing and Managing Common Pests

Powdery mildew of *Cannabis*

Podosphaera macularis

Also infects hops, strawberry, delphinium, phlox, potentilla, geranium

Photos: Whitney Cranshaw

Conditions that Promote Powdery Mildew

- **High humidity**
- **Moderate temperature**
- **Still air**

Powdery Mildew Prevention

- Quarantine new plant material
- Maintain humidity at or below 70%
- Maintain good air circulation among plants
- Maintain positive airflow at entrances/exits
- Use strict sanitation protocols for workers and equipment
  - Wear clean dedicated clothing/shoes or protective coverings to prevent intro
  - of spores into growing areas
  - Sterilize pots or don't reuse.
  - Sterilize cutting tools before each cut.

Powdery Mildew Management

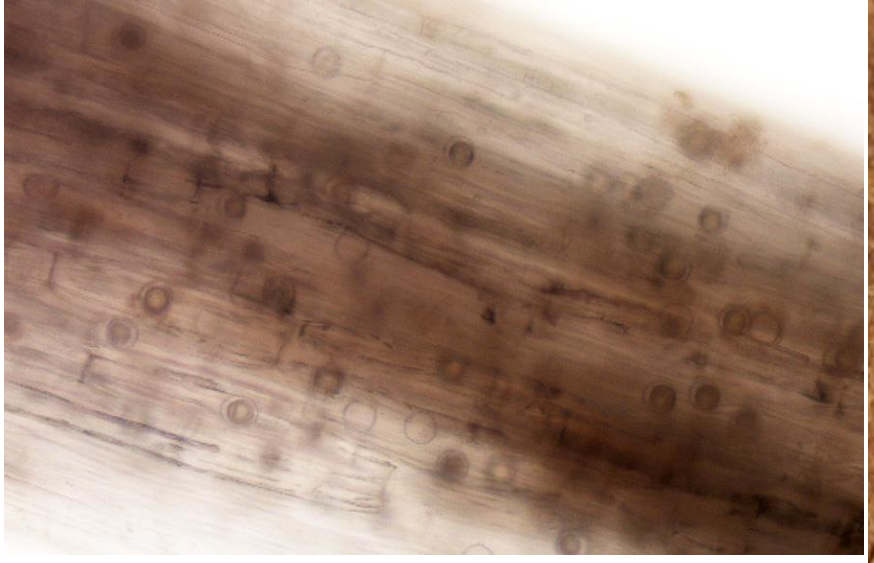
- Isolate, bag, and remove infected plants
- Apply approved, registered pesticides when/where/if needed

Bacillus amyloliquifaciens
Strain D747

NOTE: No endorsement or approval indicated. Products shown for example only. Check with Maine Board Pesticides Control or read product label before using any pesticide

Streptomyces lydicus
WYEC 108 strain

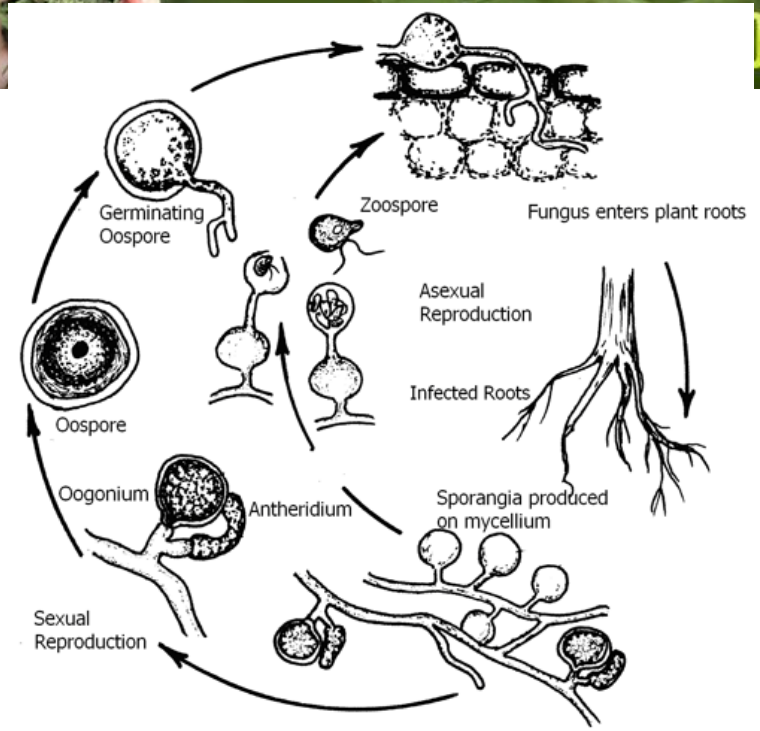
Home Made Pest Control Products NOT Allowed



Pythium root rot fungi
Pythium spp.

Photos: Whitney Cranshaw

Zoospores can easily spread through a hydroponic system



Prevent Pythium

- Start with clean plants and sterilized pots, flats, trays, tools
- Avoid practices that allow spores to spread between plants
- Disinfect floors, equipment, hard surfaces between growing cycles with an approved/registered product.
- Place disinfectant foot bath mats at entry points

NOTE: No endorsement or approval indicated. Products shown for example only. Check with Maine Board Pesticides Control or read product label before using any pesticide

Two-spotted spider mite

Tetranychus urticae

Photos: Whitney Cranshaw

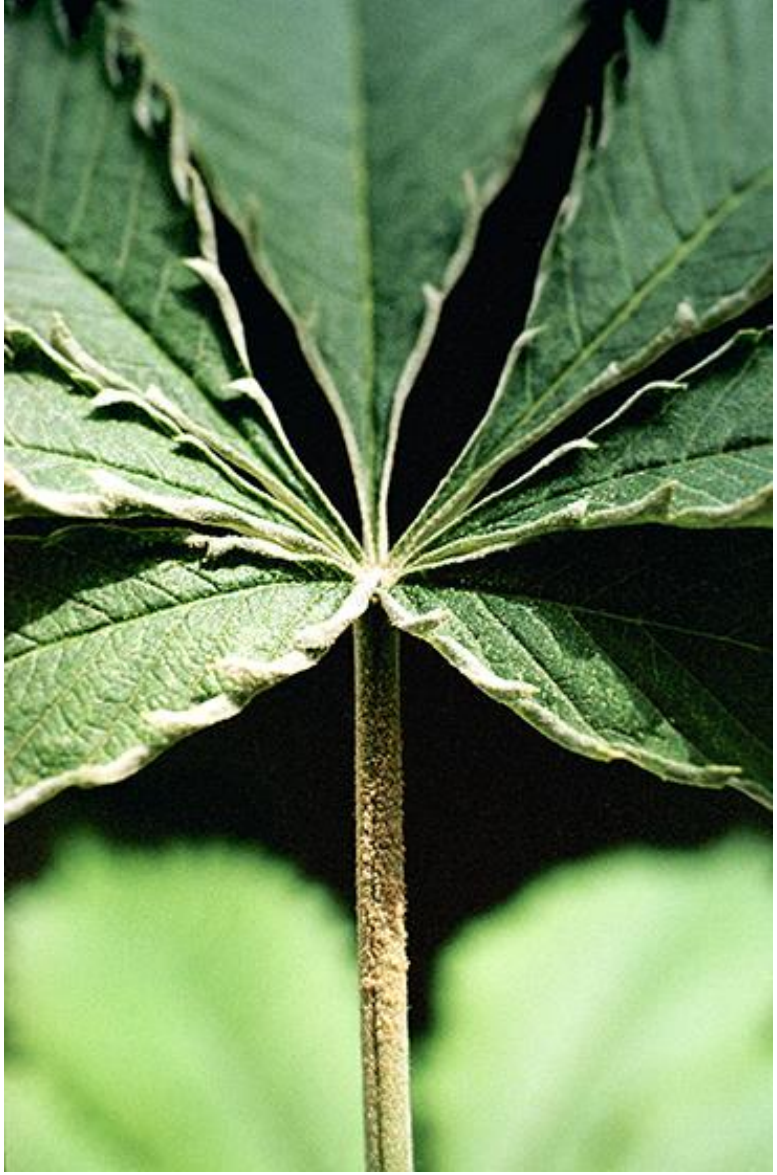


Photo credit: Karl Hillig

Hemp russet mite

Aculops cannabicola

Constantly Monitor Plants for signs of mite presence/activity

…Take action well before it gets like this!

Photos: Whitney Cranshaw

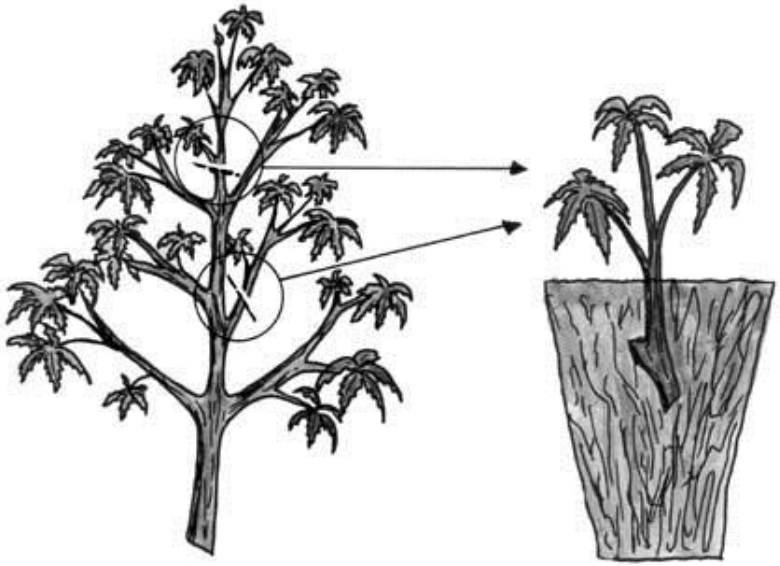
Avoid conditions that allow “steamrolliing” of mite populations

Photo: Whitney Cranshaw

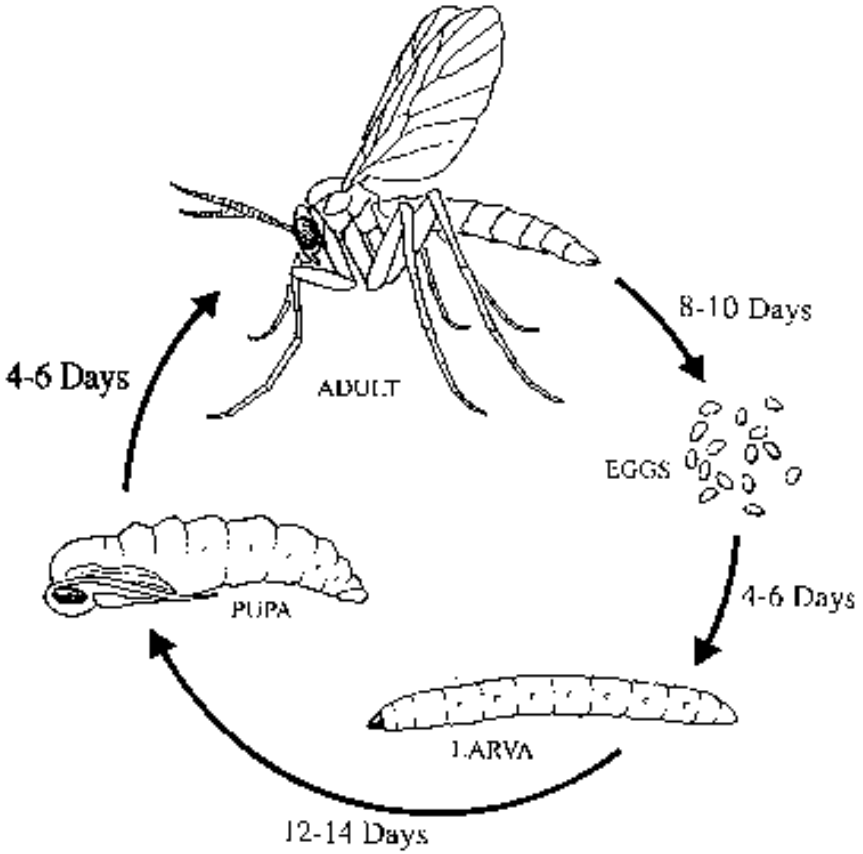
Spider Mite Management

- **Start with clean plants**
- **Quarantine new plant material to avoid bringing mites into facility**
- **Train workers in sanitation protocol to prevent transfer of mites to clean areas**
- **Maintain humidity closer to 50% when possible**
- **Release predatory mites and/or beneficial nematodes in indoor grows.**
- **Avoid pesticides that kill natural enemies indoors and outdoors.**

Cuttings, if used, must be disinfested of all living stages of mites before introduction into a growing area



www.cannabisculture.com



Photos: Whitney Cranshaw

Dark-winged fungus gnat, *Bradysia* spp.

Fungus Gnat Trapping

Photo: Whitney Cranshaw

Some IPM Tools for Fungus Gnats

- **Avoid overwatering. Let potting media dry out on top before watering.**
- **Sticky Traps**
- **Biological control agents**
  - **Soil-dwelling predatory mites**
  - **Entomopathogenic nematodes**

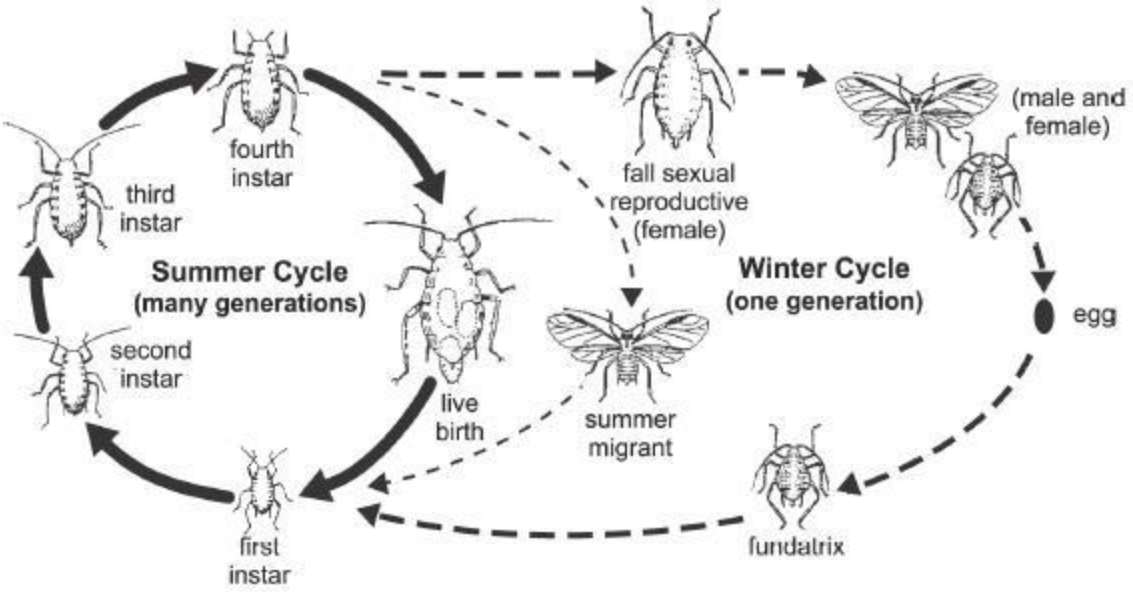


Figure 2. General life cycle of aphids. Asexual reproduction occurs during most of the year (summer cycle). Some aphid species produce a generation of sexual individuals that produce overwintering eggs as shown in the winter cycle.

Aphids

- Complex life cycle
- Sucks plant sap from roots, stems, or leaves
- Parthenogenic: reproduces without mating
- Viviparous: live birth

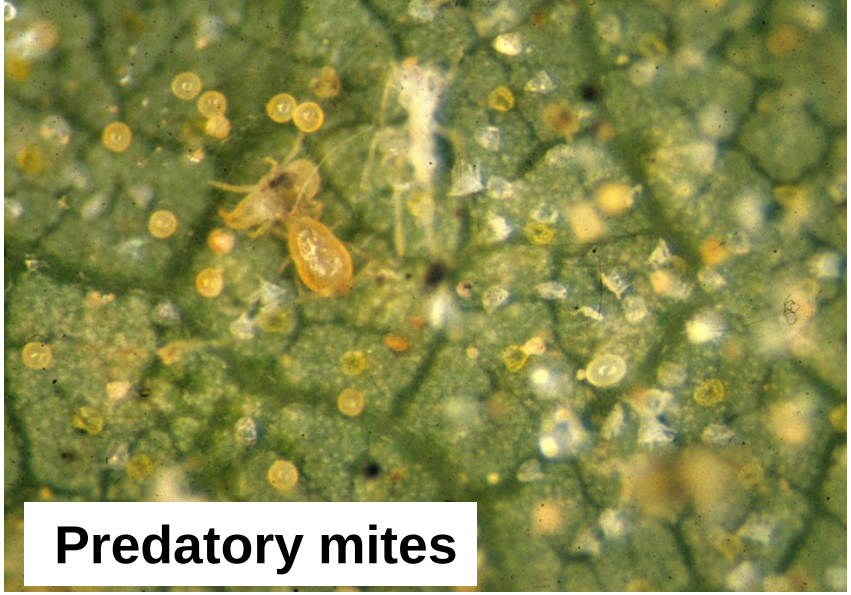
Rice root aphid

Rhopalosiphum rufiabdominalis

Photos: Whitney Cranshaw

Biological Control

Use (or augment) natural enemies to prevent and manage pests.



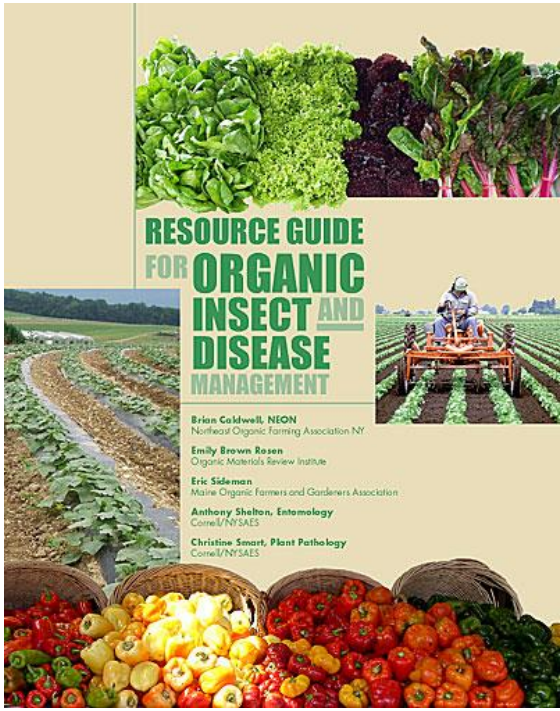
Predatory mites

Beneficial nematodes

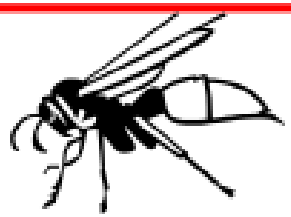
Insect predators and parasites

Conservation Strategies

- Minimize pesticide impact on natural enemies
  - Product selection (ai, formulation)
  - Application methods
  - Timing
  - Spot treating



"When we kill off the natural enemies of a pest we inherit their work"— Carl Huffaker



Farmscape to Attract and Support Natural Enemies

- Create diverse plantings
  - Provides shelter and alternate food for natural enemies
  - Insectary plantings
- Plant strips, borders or banks of flowering plant
  - provides nectar and pollen for beneficial insects

eXtension

articles.extension.org
http://articles.extension.org/pages/18573/farmscaping:-making-use-of-natures-pest-management-services

Farmscaping: Making Use of Nature's Pest Management Services

Organic Agriculture July 05, 2013

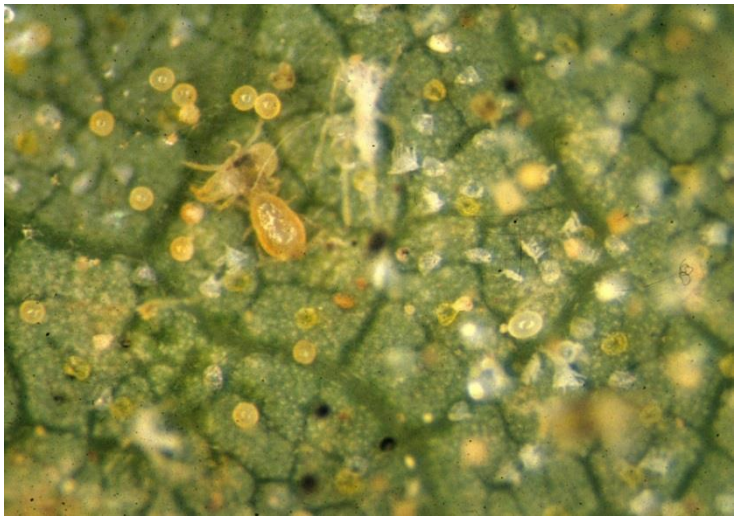
eOrganic author:

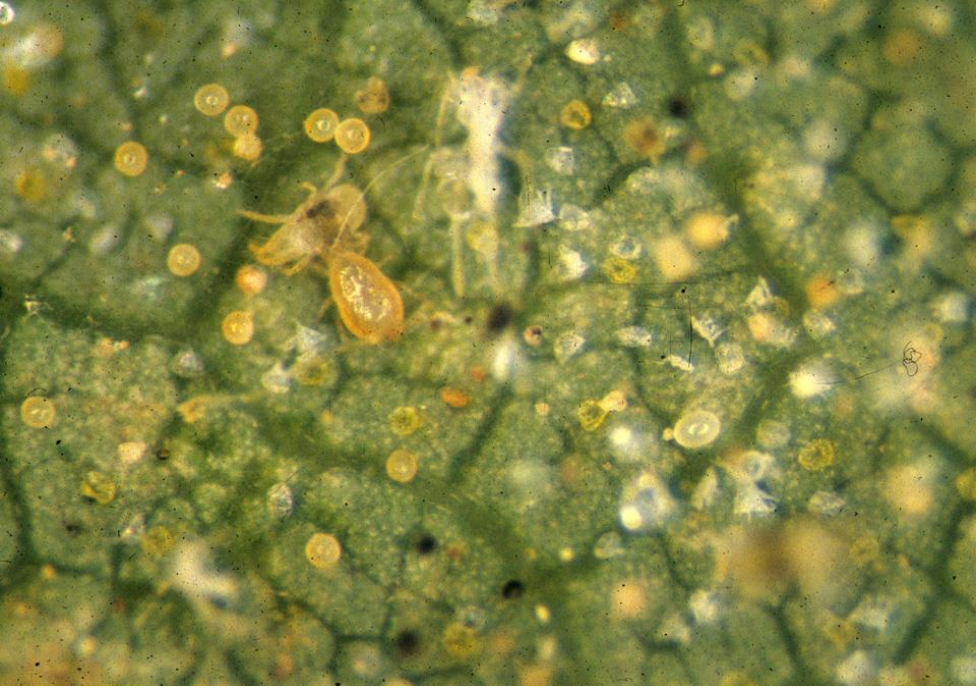
Geoff Zehnder, Clemson University

Extension.org. Search for 'Farmscaping'

Predatory Mites for Control of Spider Mites and Fungus Gnats

- ***Mesoseiulus longipes***
  - Can tolerate 70°F, 40% RH, but needs higher humidity with increasing temperature
- ***Galendromus occidentalis***
  - Best in hot, humid conditions (80-100 F, > 50% RH)
- ***Neoseiulus californicus***
  - Best at temps up to 100 F, >50% RH





Spider Mite Predators

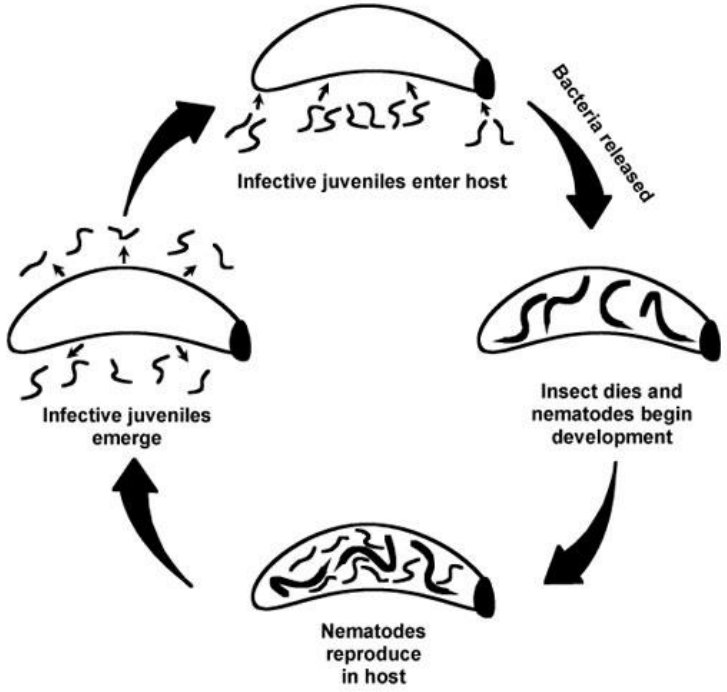
PEST
Fungus Gnat

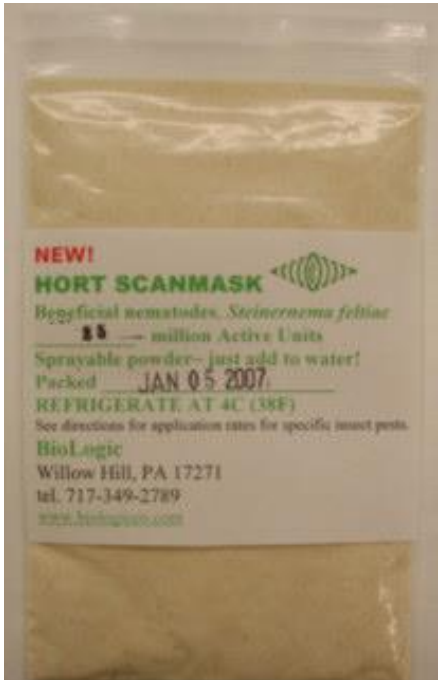
PREDATOR
Hypoaspis miles

Hypoaspis miles

(aka Stratiolaelaps scimitus)

Biocontrol of Fungus Gnats





Aphid Biocontrol

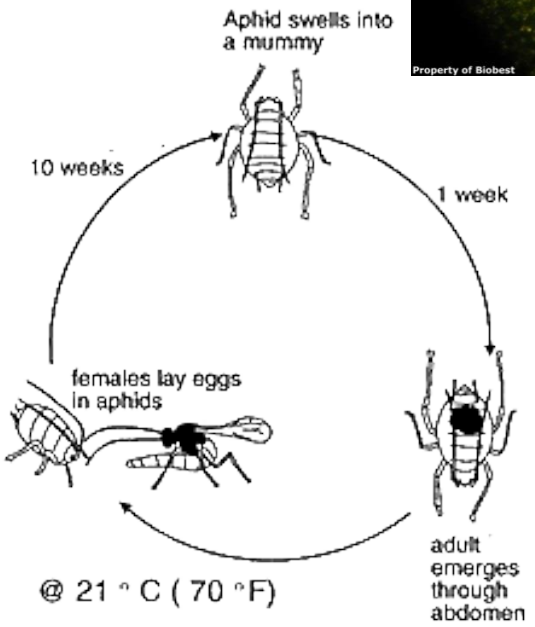
Whitney Cranshaw, Colo State Univ. Bugwood.org

January 29, 2016

Predatory Midge

Aphidoletes aphidimyza:

- Very mobile, generalist predator
- Adults attracted to aphid honeydew → lays eggs
- Larva kill up to 80 aphids per day
- Kill by paralyzing toxin
- Larva are sneaking up onto their prey, paralyze it, and then suck the aphid dry
- Works best in aphid 'hot spots'



Aphid Biocontrol

Parasitic Wasps

Aphidius colemani

- –Good mobile searcher
- –Effective against green peach and melon aphids
- –Suitable with aphid banker plants

Aphidius ervi

- –Good mobile searcher
- –Effective on potato and foxglove aphids

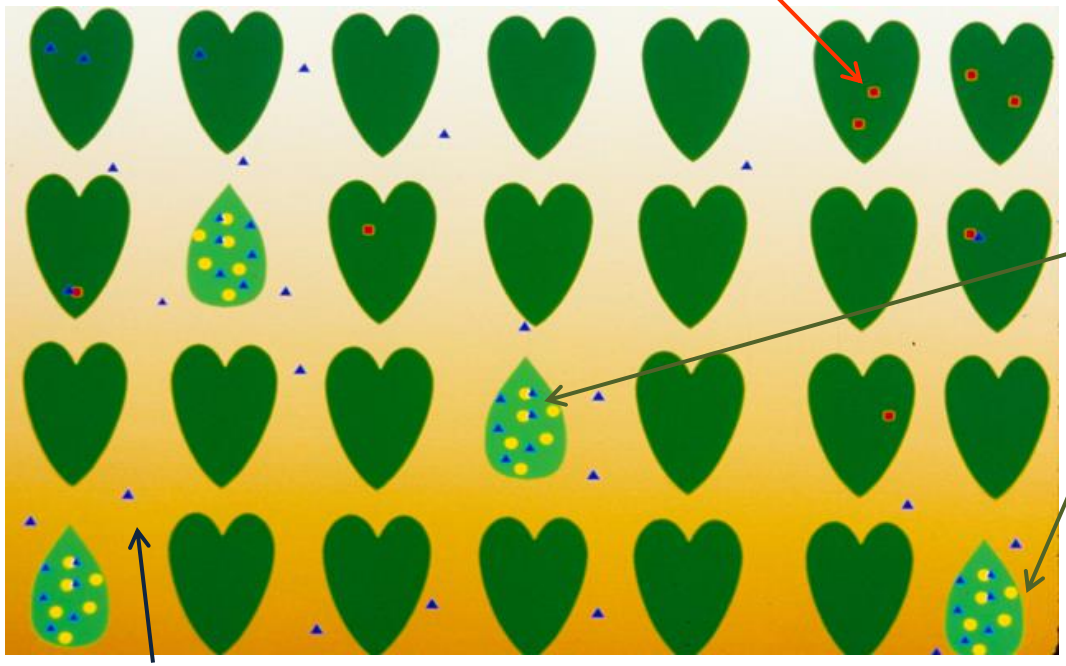
Aphelinus abdominalis

- –Effective for potato and foxglove aphids

Banker Plants

Provide Pollen or Alternative Hosts to Increase Beneficial Insect Population

Crop pests on crop plant



Banker plants infested with alternative host for beneficial insect

Beneficial insects migrate from banker plant to crop plants to control pests

Aphid Banker Plant System

1. Plant cereal, keep in insect-proof cage to keep beneficials out. Repeat weekly for steady supply through season

2. Infest with cereal aphids. Keep covered

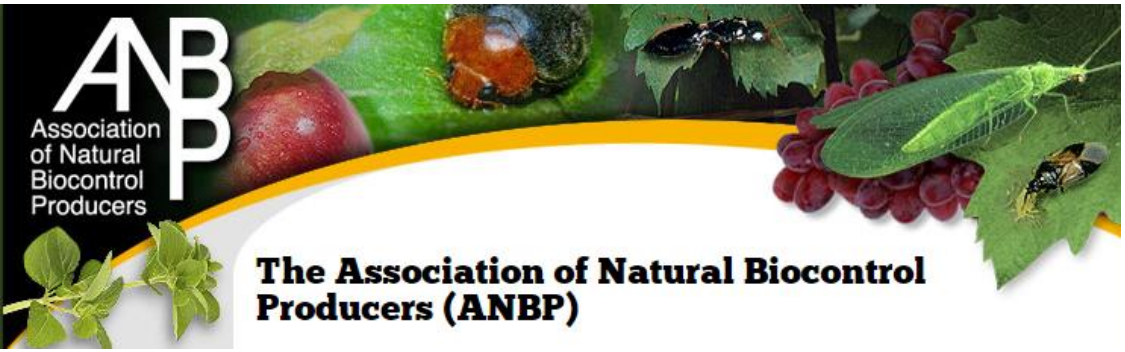
3. Uncover and distribute infested banker plants throughout greenhouse.

4. Release aphid parasitoid throughout greenhouse

Final Thoughts on Biological Control

- Do your Homework
  - Get good research-based information.
  - Has effectiveness been demonstrated in the field?
- Plan Well in Advance
  - Contact suppliers. Get technical recommendations specific to your system. Compare prices, shipping costs.
- Don’t kill your good bugs!
  - Store and release according to directions. Details are critical!
  - Avoid pesticide impacts (if you have to spray, check compatibility charts, spot treat, time application to avoid direct impact on beneficials
  - Protect them from the elements (heat, cold, rain, etc)
  - Put the good bugs where the pests are!

Shop Smart



UF IFAS Extension UNIVERSITY of FLORIDA

IPM-146

Guidelines for Purchasing and Using Commercial Natural Enemies and Biopesticides in North America[1]

Lynn M. LeBeck and Norman C. Leppla[2]

Grower Guide: Quality Assurance of Biocontrol Products

Compiled by Rose Buitenhuis, PhD, Research Scientist, Biological Control, Vineland Research and Innovation Centre, 2014

Find resources and suppliers at **www.anbp.org**

Greenhouse Scout Mobile App

Find it at your favorite app store:
Greenhouse Scout on the App Store on iTunes
Greenhouse Scout—Android Apps on Google Play
For more information contact:
Betsy Lamb, eml38@cornell.edu

If you really need to use a pesticide

- Applicator must have ‘Agricultural Basic’ applicators license unless growing only for self or other household members
- Use must be consistent with Maine Best Management Practices for Pests
- Product must be registered for use in Maine
- Product must be ‘not prohibited’ for use on cannabis by Board of Pesticide regulations

How to Determine if a Pesticide Product Can be Used on Cannabis in Maine

1) Read the product label carefully
2) Use the Pesticide Decision Flow Charts to determine if product can be used
   - Flow Charts dated 1-8-2016 or later must be used (older versions are outdated)
   - Current Flow Charts are at: www.thinkfirstspraylast.org and www.maine.gov/IPM
   - Active and inert ingredients referred to in the Flow Charts are at:
     - http://www.epa.gov/sites/production/files/2015-12/documents/minrisk-active-ingredients-tolerances-2015-12-15.pdfthe EPA 25
     - http://www.epa.gov/sites/production/files/2015-01/documents/section25b_inerts.pdf
3) Contact ME Board of Pesticides Control (207-287-2731) if have any questions

Important Info About Maine's Pesticide Regulations

- Pesticides may only be used on cannabis by a person with the proper, valid pesticide applicator's license
- In Maine, all cannabis must be considered 'edible' therefore **any pesticide prohibited on food crops is NOT ALLOWED on any cannabis**.
- Any pesticide used **must not be prohibited for use in a greenhouse** even if it is grown outdoors
- Pesticides may only be used:
  - In accordance with all pesticide regulations,
  - In a manner consistent with the 'Best Management Practices for Pest Management' (see www.maine.gov/ipm), and
  - Worker Protection Standards must be followed.

EcoSmart Organic Fungicide

Is this product OK for use on Cannabis?

NOTE: No endorsement or approval indicated. Products shown for example only. Check with Maine Board Pesticides Control or read product label before using any pesticide

- No!
- Specific Use Sites are Listed
- Does not say can be used on ‘any plant’

NOTE: No endorsement or approval indicated. Products shown for example only. Check with Maine Board Pesticides Control or read product label before using any pesticide

Can this Product be Used?

NOTE: No endorsement or approval indicated. Products shown for example only. Check with Maine Board Pesticides Control or read product label before using any pesticide

Liquid Ladybug V™ is formulated for use on plants in vegetative growth.

- Can be used Daily
- Can be used under Lights
- For all Plants and Food Crops
- Leaves No Residue
- All Natural Ingredients
- Ready to use spray

For Mite Shield information & helpful treatment advice visit:

www.LiquidLadybug.com

Eco Organics
PO Box 202191 • Austin TX 78720
877.596-2727

Liquid Ladybug V™ is exempt from registration with the US Environmental Protection Agency since it qualifies as a minimum risk pesticide under FIFRA section 25(b).

Eco Organics

0 94922 45289 4

liquid ladybug™ V

Extra Strength

All Natural Spider Mite Spray

32 fl oz (1 Qt) 946mL

Directions for Use

Shake Bottle Well Before Use.

Spray thoroughly to saturate all plant surfaces. Complete coverage of all plant tissue is necessary for effective control.

Application Instructions:

Spray plants on days 1, 2 and 7 (or daily if desired).

Use a Mite Shield during treatment to prevent re-infestation.

Allow the plant to completely *air dry* with room fans off after treatment.

Active Ingredients:

Peppermint Oil	0.80%
Rosemary Oil	0.80%
Clove Oil	0.20%
Citric Acid	0.10%
Other Ingredients*	98.10%
Total	100.00%

*Other Ingredients: Water, Soap, Lauric Acid.

Caution: Keep out of eyes. If contacted, flush eyes well with water to remove.

KEEP OUT OF REACH OF CHILDREN

Buyer assumes all responsibility for proper use of this product.

Liquid Ladybug V™ is formulated for use on plants in vegetative growth.

Yes! But only on non-flowering plants

- Can be used Daily
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KEEP OUT OF REACH OF CHILDREN

Buyer assumes all responsibility for proper use of this product.

Is this an ‘EPA-Registered’ Product or is it a ‘25-B Exempt’ Product?

Can this product be used?

NOTE: No endorsement or approval indicated. Products shown for example only. Check with Maine Board Pesticides Control or read product label before using any pesticide

azera®

Gardening

OMRI LISTED

FOR ORGANIC GARDENING

- Kills listed pests on contact or by ingestion
- Contains Pyrethrins, a botanical insecticide derived from chrysanthemums
- Kills a broad spectrum of listed insects including aphids, whiteflies, leafminers and caterpillars
- Quick knock-down, and kill
- Kills larval, pupae, and adult stages of listed insects
- For use on ornamentals, and in greenhouses
- One pint makes up to 16 gallons

ACTIVE INGREDIENTS:	
Azadirachtin	1.20%
Pyrethrins	1.40%
OTHER INGREDIENTS	97.40%
	100.00%

MGK® - Registered trademark of McLaughlin Gormley King Company
Contains: 0.10 lbs. of azadirachtin and 0.11 lbs. of pyrethrins per gallon.

KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUCIÓN

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail).

FIRST AID

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.

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 SWALLOWED: Call poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information regarding medical emergencies or pesticide incidents, call 1-888-740-8712.

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wash hands thoroughly with plenty of soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Wear protective eyewear. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wear long-sleeved shirt and long pants, socks, shoes and safety gloves (such as barrier laminate, nitrile rubber, neoprene rubber or Viton).

ENVIRONMENTAL HAZARDS

This product is toxic to aquatic organisms, including fish and invertebrates. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. This product may contaminate water through runoff. This product has a potential for runoff for several weeks after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product.

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area.

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash-waters or rinsate. See Directions for Use for additional precautions and restrictions.

PHYSICAL OR CHEMICAL HAZARDS

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

DIRECTIONS FOR USE

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

SEE INSIDE BOOKLET FOR DIRECTIONS FOR USE

Manufactured by:

MGK®

8810 Tenth Avenue North
Minneapolis, MN 55427

EPA Reg. No. 1021-1872
Rev. 0515-0715

EPA Est. No. 1021-MN-2
F2905-107MGK

NET CONTENTS
1 GALLON

Yes, it can be used

NOTE: No endorsement or approval indicated. Products shown for example only. Check with Maine Board Pesticides Control or read product label before using any pesticide

azera®
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FIRST AID

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.
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 SWALLOWED: Call poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information regarding medical emergencies or pesticide incidents, call 1-888-740-8712.

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION

Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wash hands thoroughly with plenty of soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Wear protective eyewear. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wear long-sleeved shirt and long pants, socks, shoes and safety gloves (such as barrier laminate, nitrile rubber, neoprene rubber or Viton).

ENVIRONMENTAL HAZARDS

This product is toxic to aquatic organisms, including fish and invertebrates. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. This product may contaminate water through runoff. This product has a potential for runoff for several weeks after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product.

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area.

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash-waters or rinsate. See Directions for Use for additional precautions and restrictions.

PHYSICAL OR CHEMICAL HAZARDS

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

DIRECTIONS FOR USE

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

SEE INSIDE BOOKLET FOR DIRECTIONS FOR USE

Manufactured by:

MGK®
8810 Tenth Avenue North
Minneapolis, MN 55427

EPA Reg. No. 1021-1872
Rev. 0515-0715

EPA Est. No. 1021-MN-2
F2905-107MGK

NET CONTENTS
1 GALLON

EPA Reg. No indicates this is an EPA Registered Pesticide

proso; oats; pearl; popcorn; rice; rye; sorghum (milo); teosinte; triticale; wheat; wild rice.

GRASSES FOR SEED, FORAGE, FODDER AND HAY: Including: any grass (all Graminacea), (green or cured), except sugarcane and those listed in the cereal grains group) that will be fed to or grazed by livestock, all Pasture and Range Grasses and Grasses grown for hay and silage, Sudan Grass, Bermuda Grass, Bluegrass, Bromegrass, Fescue, Orchard, Timothy.

NON-GRASS ANIMAL FEEDS: Including: Alfalfa, Velvet Bean, Clover (White, Ladino, Red), Kudzu, Lespedeza, Lupine, Sainfoin, Trefoil, Crown Vetch, Milk Vetch.

HERBS AND SPICES: Including: Allspice, Angelica, Anise (anise seed), Anise [star], Annatto (seed), Balm (lemon balm), Basil, Borage, Burnet, Camomile, Caper buds, Caraway, Caraway [black], Cardamom, Cassia bark, Cassia buds, Catnip, Celery seed, Chervil (dried), Chicory, Chive, Chive [Chinese], Cinnamon, Clary, Clove buds, Coriander (cilantro or Chinese parsley) (leaf), Coriander (cilantro) (seed), Costmary, Culantro (leaf), Culantro (seed), Cumin, Curry (leaf), Dandelion, Dill (dill weed), Dill (seed), Fennel (common), Fennel [Florence] (seed), Fenugreek, Grains of paradise, Horehound, Hyssop, Juniper berry, Lavender, Lemongrass, Lovage (leaf), Lovage (seed), Mace, Marigold, Marjoram (includes sweet or annual marjoram, wild marjoram or oregano, and pot marjoram), Mint, Mustard (seed), Nasturtium, Nutmeg, Oregano, Mint, Paprika, Parsley (dried), Pennyroyal, Pepper [black], Pepper [white], Peppermint, Poppy (seed), Rosemary, Rue, Saffron, Sage, Savory [summer and winter], Sweet bay (bay leaf), Tansy, Tarragon, Thyme, Vanilla, Wintergreen, Woodruff, Wormwood.

OIL SEED GROUP: Cottonseed, Jojoba

Does not limit to listed crops

ADDITIONAL CROPS: Including: Acerola, Artichoke, Asparagus, Avocado, Atemoya, Bananas, Barbados Cherry, Bird-seed, Cacao, Canistel, Carob, Cherimoya, Cocoa, Coffee, Custard Apple, Dates, Durian (Jackfruit), Edible Flowers, Feijoa, Figs, Globe Artichoke, Guayule, Hops, Jaboticaba, Llama, Longan, Lychee, Mangoes, Mamey Sapote, Mushroom, Okra, Olives, Palm, Papaya, Passion fruit, Peanuts, Persimmon, Pineapple, Pomegranate, Pulasan, Rambutan, Safflowers, Sapo-dilla, Sesame, Soursop and Biriba, Spanish Lime, Star Apple Sugar Cane, Star Fruit, Sugar Apple, Sunflower, Tamarillo, Tea, Water chestnut and Wax Jambu.

FOR USE ON GROWING PLANTS (OUTDOORS AND IN GREENHOUSES):

BEDDING PLANTS, FLOWERS, POTTED PLANTS AND FOLIAGE: Including: Actinopt
rian Ivy, Alocasia, Anthurium, Aphelandra, Artemisia, Aster, Aucuba Ilex, Azalea, Baby'
Boston Fern, Boxwood, Brachycome, Cacti, Calabrese, Caladium, Calla, Calathea, Cale
mum, Coleus, Columbine, Dahlia, Daisy, Daylily, Delphinium, Dianthus, Dieffenbachia,
Ivy, Euphorbia, Fern, Ficus, Foxglove, Freesia, Fuchsia, Gaillardia, Gardenia, Geranium,
Hedera, Hibiscus, Impatiens, Iris, Lily, Mandevilla, Marigold, Nasturtium, Pansy, Pelargonium, Peony, Peperomia, Petunia, Philodendron, Phlox, Photinia, Pittosporum, Pinks, Poinsettia, Pothos, Portulaca, Rosemary, Rose, Rubber plant, Salvia, Schefflera, Sedum, Sempervivum, Snapdragon, Spathiphyllum, Stock, Syngonium, Verbena, Vinca, Wandering Jew, Zinnia.

These terms do not prohibit use on cannabis.

Can this Product be Used?

NOTE: No endorsement or approval indicated. Products shown for example only. Check with Maine Board Pesticides Control or read product label before using any pesticide

GreenCure®
Fungicide

FOR ORGANIC GARDENING

A fungicide for the control of powdery mildew and other diseases on terrestrial and indoor ornamental plants, greenhouse and garden crops, and turf

Makes up to 16 Gallons of Spray

OMRI LISTED
For Organic Use

ACTIVE INGREDIENT:	
Potassium Bicarbonate	85.00%
OTHER INGREDIENTS	15.00%
TOTAL	100.00%

Produced For:
H & I AGRITECH, INC.
95 BROWN RD BOX 1030
ITHACA, NY 14850 -1257

EPA REG. NO. 70870-1
EPA EST. NO. 67187-NY-001

NET 8 oz (227 g)

CAUTION
KEEP OUT OF REACH OF CHILDREN
See inside panel for the First Aid Information.

MIXING INSTRUCTIONS: Dilute GreenCure with water before applying. Carefully measure and mix the stated amounts of product and water. Mix 1 to 2 level tablespoons of GreenCure per gallon of water. Do not exceed this use rate. Mix the solution thoroughly before use. One gallon of this solution is sufficient to treat approximately 450 square feet. Apply the solution to all exposed surfaces of th e coverage of all foliage and stems. Uniform and complete cover re unused spray solutions. Spray adjuvants are not req d fertilizers may produce spray mixes that are incompatible. A "jar test pesticide, the addition of spray adjuvants and other pesticides to the s uit of susceptible crops and plants.

No! Label lists specific food and ornamental crops. The word 'including' is not here, therefore this product **cannot be used**.

APPLICATION TIMING: Start application at first sign of disease. For best protection, repeat at one to two week intervals until conditions are no longer favorable for disease development. Shorten the interval during rainy weather or during periods of high relative humidity. For appropriate crops, apply GreenCure as a post-harvest treatment to remaining foliage to decrease overwintering inoculum.

ORNAMENTAL APPLICATIONS: (California registered uses are listed in a separate section.)

limited to ornamentals

PLANT TYPES: GreenCure is for: Woody and Ornamental Shade Trees, Woody and Herbaceou
Nut and Fruit Trees, Annual and Perennial Flowers, Foliage Plants, Ground Covers and Bedding Plants.
FOR USE ON: Ageratum, Ajuga, Almond-Ornamental, Alyssum, Andromeda, Aphelandra, Apple-Ornamental, Apricot-Ornamental, Artemisia, Aster, Azalea, Begonia, Boxwood, Calendula, Carnation, Centaurea montana,

GARDEN APPLICATIONS: (California registered uses are listed in a separate section.)

limited to listed fruits & vegetables

FOR USE ON: Acorn squash, Almonds, Apples, Apricots, Avocado, Basil, Blueberries, Broccoli, Cabbage, Caneberries, Cantaloupe, Cauliflower, Celery, Cherries, Chicory, Citrus, Crabapple, Crenshaw melon, Cucumber, Dry beans, Eggplant, Endive, Escarole, Grapes, Honeydew, Hops, Kale, Lettuce, Lima bean, Mango, Muskmelon, Mustard greens, Okra, Onion, Oregano, Peaches, Pears, Peas, Pecans, Peppers, Pistachio, Plums, Potatoes, Prunes, Pumpkin, Radicchio, Rosemary, Sage,

NOT OK for USE ON CANNABIS

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Fungicide

FOR ORGANIC GARDENING

A fungicide for the control of powdery mildew and other diseases on terrestrial and indoor ornamental plants, greenhouse and garden crops, and turf

Makes up to 16 Gallons of Spray

OMRI® LISTED
For Organic Use

ACTIVE INGREDIENT:	
Potassium Bicarbonate	85.00%
OTHER INGREDIENTS	15.00%
TOTAL	100.00%

Produced For:
H & I AGRITECH, INC.
95 BROWN RD BOX 1030
ITHACA, NY 14850 -1257

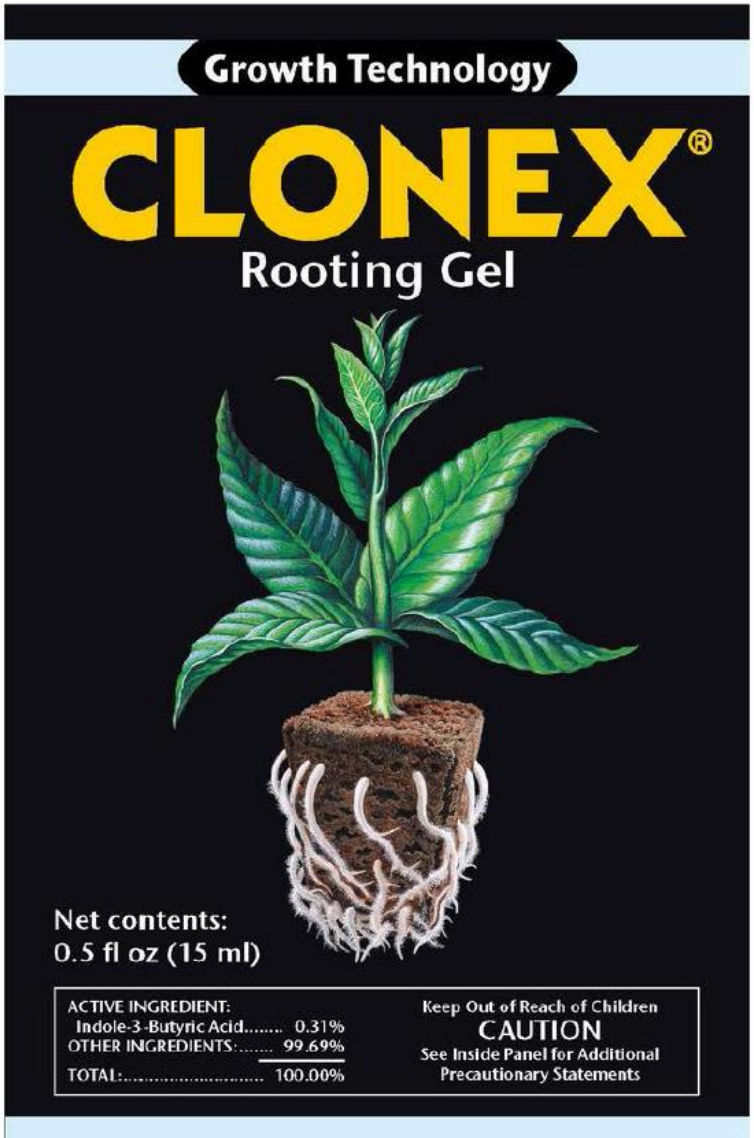
EPA REG. NO. 70870-1
EPA EST. NO. 67187-NY-001

NET 8 oz (227 g)

CAUTION
KEEP OUT OF REACH OF CHILDREN
See inside panel for the First Aid Information.

Is this Product a Pesticide? Can it be Used?

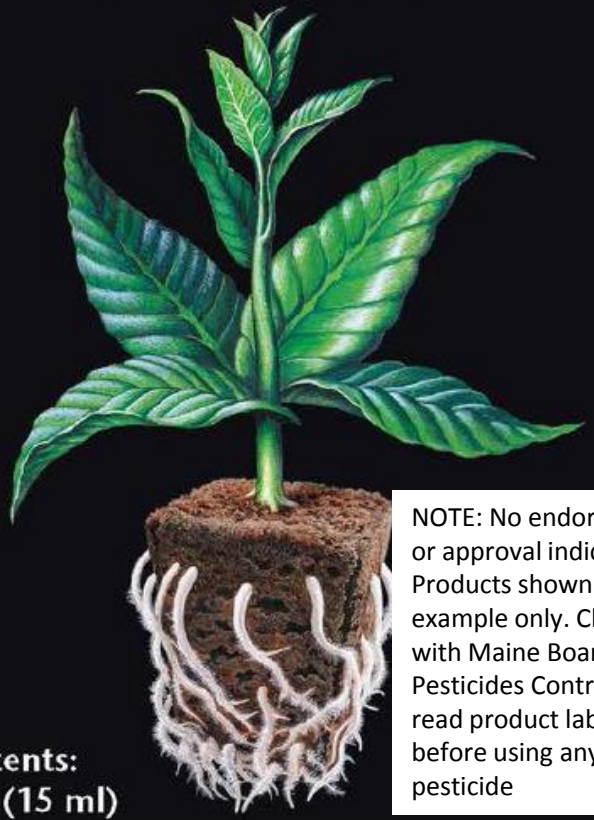
NOTE: No endorsement or approval indicated. Products shown for example only. Check with Maine Board Pesticides Control or read product label before using any pesticide



Growth Technology

CLONEX®

Rooting Gel



Net contents:
0.5 fl oz (15 ml)

NOTE: No endorsement or approval indicated. Products shown for example only. Check with Maine Board Pesticides Control or read product label before using any pesticide

ACTIVE INGREDIENT:
Indole-3-Butyric Acid..... 0.31%
OTHER INGREDIENTS:..... 99.69%
TOTAL:..... 100.00%

Keep Out of Reach of Children
CAUTION
See Inside Panel for Additional Precautionary Statements

- This product has an EPA Reg. No. indicating that it is an 'EPA-Registered' Pesticide. Plant hormones and growth regulators are pesticides.
- Yes, it can be used on cannabis – it says 'including' therefore is not limited to specific crops.

root production on cuttings of plants by supplying essential hormones needed for accelerated root development. CLONEX Rooting Gel may be used on all types of cuttings, including woody, herbaceous, and flowering ornamental species, vegetables, fruit trees and small fruits.

Dip cutting in Clonex Rooting Gel to desired depth. Insert cutting into rooting medium. Mist cuttings and place in propagator or a warm, clean, moist and humid environment. Look for root development in 1 to 2 weeks.

Keep Out of Reach of Children
CAUTION
See Inside Panel for Additional Precautionary Statements

EPA Reg. No. 79664-1
EPA Est. No. 79463-MI-001

Manufactured for:
Growth Technology Ltd.
Great Western Way, Taunton,
Somerset TA2 6BX, UK

Growth Technology
www.growthtechnology.com

Resources

- Insect and plant disease help (insects or photos only. Do not bring or send plant material):
  - Cooperative Extension County Offices
  - UM Pest Management Office (http://extension.umaine.edu/ipm, 800-287-0279)
- Pesticide questions:
  - ME Board of Pesticides Control (www.thinkfirstspraylast.org, 207-287-2731)
- 'Best Management Practices for Pests' questions:
  - ME Department of Agriculture, Conservation and Forestry IPM Program (www.maine.gov/ipm, kathy.murray@maine.gov)