

4-471

7/24/2012

1/18



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
CHEMICAL SAFETY
AND POLLUTION PREVENTION

Sarah H. Kuetemeier
Registrations By Design
P.O. Box 1019
Salem, VA 24153

JUL 24 2012

Subject: Bonide Spinosad Concentrate, EPA Reg. No. 4-471
Application Dated: May 17, 2012
Decision: 466102

Dear Ms. Kuetemeier:

The labeling referred to above, submitted in connection with registration under the Federal insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable subject to the comments below.

Two (2) copies of the finished labeling must be submitted prior to releasing the product for shipment. A stamped copy of the label is enclosed for your records. If you have any questions, you may contact Samantha Hulkower at (703) 603-0683 or Hulkower.Samantha@epa.gov.

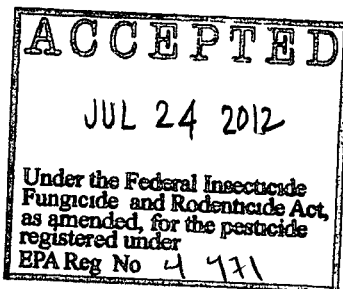
Sincerely,

A handwritten signature in blue ink, appearing to read "Mark Suarez".

Mark Suarez
Product Manager (13)
Insecticide Branch
Registration Division (7505P)

Enclosure: Copy of Label Stamped "Accepted"

[VERSION A – MASTER LABEL]



Spinosad[®] Concentrate

[Additional Brand Name(s) Captain Jim's Deadbug Brew[®] Concentrate Bonide[®] Captain Jack's Deadbug Brew[®] Concentrate Captain Jack's Deadbug Brew[®] Concentrate]

Optional Marketing Statements

Insect Control Product

FOR RESIDENTIAL USE IN HOME GARDENS LAWNS AND ORNAMENTALS

For control of foliage feeding worms (caterpillars) thrips and other listed pests in

- Fruiting vegetables such as tomato pepper okra and eggplant
- Cucurbits such as cantaloupe and honeydew
- Cole crops (Brassica) such as broccoli cabbage and cauliflower
- Leafy vegetables such as lettuce spinach and celery
- Tuberous vegetables such as potatoes sweet potatoes yams Jerusalem artichoke Chinese artichoke and cassava
- Leaves of root and tuber vegetables such as carrot garden beet and sweet potato
- Peppermint and spearmint
- Pomegranate
- Root vegetables such as carrot garden beet radish and rutabaga
- Spices such as culantro seed dill seed mustard seed and poppy seed
- Stone fruits such as peaches plums cherries nectarines prunes and apricots
- Apple and other pome fruits such as pears crabapples mayhaw and quince
- Bulb vegetables such as dry bulb onion and garlic
- Bushberries and caneberries such as blueberry blackberry and raspberry
- Citrus trees such as oranges grapefruit lemons limes and tangerines
- Succulent and dried beans and peas such as lima bean snap bean and blackeyed pea
- Tropical Tree fruits such as avocado mango star apple and papaya
- Tree nuts such as pecans almonds cashew and walnuts
- Sweet corn and popcorn
- Asparagus
- Dates
- Grape
- Leafy and dried herbs
- Strawberry
- Lawns
- Outdoor herbaceous and woody ornamentals
- Fire ant control in lawns ornamentals home gardens and other outdoor areas

See Home Gardens and Lawns and Ornamentals sections for a complete listing of crops and use sites

Liquid concentrate

Easy to use

User friendly

No guesswork

CONCENTRATE

For vegetables apples and citrus trees

Controls worms (caterpillars)

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EPA Est No 4 NY 1
Page 1 of 17 Pages

- Kills worms (caterpillars)
- Controls citrus leafminers
- Controls Colorado potato beetle
- Kills Colorado potato beetle
- Controls certain insects in vegetable gardens
- Controls certain insects in the garden

For vegetables

No odor water-based formula

Water-based formula

Contains spinosad

Do-it-yourself home garden insect control

Leaves no oily residue

Kills certain home garden insect pests

Short post-harvest interval

Pick apples 7 days after spraying

Contains [trademark] Naturalyte® insect control

A [trademark] Naturalyte® insect control product

Use on fruits, vegetables, berries, citrus, grapes, nuts and ornamentals.

Kills bagworms, borers, beetles, caterpillars, codling moth, gypsy moth, Japanese beetle, loopers, leaf miners, spider mites, tent caterpillars, thrips and more!

Captain Jim's DEADBUG Brew® contains Spinosad "spin-OH-sid". Spinosad is derived from a naturally occurring soil dwelling bacterium that was collected from an abandoned rum distillery on a Caribbean island in 1982. This unique bacterium was defined as a new species when it was discovered and it has never been found in nature anywhere else in the world. Since being discovered, Spinosad has become a leading pesticide used by agriculture world wide in the production of organic produce. Today, thanks to Captain Jim, and his DEADBUG Brew® Spinosad is available to the homeowner.

To help avoid insect resistance to Spinosad, limit applications to any specific site to no more than the maximum number per year as listed.

Use with TURBO for enhanced effectiveness on borers and miners.
Be patient, it will take 1 - 2 days for insects to die off.



Active Ingredient:

spinosad (a mixture of spinosyn A and spinosyn D)	0.5%
Other Ingredients	99.5%
Total	100.0%

Contains 0.04 lb of active ingredient per gallon.

Keep Out Of Reach Of Children



For Use in Organic Gardening

Refer to label booklet for Directions for Use.

Notice: Read the entire label. Use only according to label directions.

Shake Well Before Use -- Avoid Freezing

®Trademark of Dow AgroSciences LLC

Net Contents _____

Precautionary Statements

Environmental Hazards

This product is toxic to bees exposed to treatment for 3 hours following treatment. Do not apply this pesticide to blooming pollen shedding or nectar producing parts of plants if bees may forage on the plants during this time period. This product is toxic to aquatic invertebrates. To protect the environment do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid run off to water bodies or drainage systems.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

For residential use in home gardens, lawns and ornamentals. Not for use on plants being grown for sale or other commercial use or for commercial seed production or for research purposes.

Storage and Disposal

Do not contaminate water, food, or feed by storage and disposal.
Pesticide Storage Store in original container only in secure or locked storage area.
Pesticide Disposal *If partly filled* – Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.
Container Disposal *If empty* Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or place in trash.

This insect control product is intended for control of worms (caterpillars) and other listed insects. This product does not significantly impact predatory beneficial insects, predatory mites, and spiders while controlling target pests. Susceptible insect pests may be observed on plants up to several hours after treatment, but will have ceased active feeding before being killed.

[this section may be listed here as well as on the front panel]

Captain Jim's DEADBUG Brew® contains Spinosad (spin OH sid). Spinosad is derived from a naturally occurring soil-dwelling bacterium that was collected from an abandoned rum distillery on a Caribbean island in 1982. This unique bacterium was defined as a new species when it was discovered and it has never been found in nature anywhere else in the world. Since being discovered, Spinosad has become a leading pesticide used by agriculture world-wide in the production of organic produce. Today, thanks to Captain Jim, and his DEADBUG Brew®, Spinosad is available to the homeowner.

How to Mix

Add the required amount of this product to the specified amount of water, mix thoroughly, and apply uniformly to both upper and lower surfaces of plant foliage. Mix only as much spray as needed for a single treatment. In vegetable gardens, for best results, do not use more than 3 gallons of spray for 1000 sq ft of area. Do not use kitchen utensils for measuring. Keep measuring utensils with product and away from children.

Unit of Measure ¹	Amount of this product to Use per Pint, Quart or Gallon of Spray		
	Per Pint (16 fl oz) of Spray	Per Quart (32 fl oz) of Spray	Per Gallon (128 fl oz) of Spray
Fluid Ounces (fl oz)	0.25 fl oz	0.5 fl oz	2 fl oz
Milliliters (mL)	7.5 mL	15 mL	60 mL
Tablespoons (Tbs)	1/2 Tbs	1 Tbs	4 Tbs
Teaspoons (tsp)	1 1/2 tsp	3 tsp	12 tsp

¹Conversion factors: 1 fl oz = 30 mL = 2 tablespoons (Tbs) = 6 teaspoons (tsp) (1 teaspoon = 1/3)

tablespoon)

How to Apply

Shake Well Before Use

This product may be applied with trigger sprayer hand held backpack or hose end sprayers Use a hose end sprayer that can be adjusted to provide a dilution ratio of about 2 fl oz of this product (4 Tbs) per gallon of spray **[Editor s Note** The following statement should be included in the label if product is packaged to be applied with a hose end sprayer **]** See Hose End Sprayer Directions below if this product is packaged in a hose end sprayer

Hose End Sprayer Directions

[Editors note Formulator label may include directions and graphic for a hose-end sprayer application **]**

When to Apply

Apply when listed pests are present Repeat applications may be made as indicated in the Home Gardens section See your state extension service recommendations for treatment guidelines in your area

Uses

Home Gardens

In the state of Georgia do not apply this product to Broccoli Raab Chinese Cabbage (Bok Choy) Collards Kale Mizuna Mustard Greens Mustard Spinach Rape Greens

Crops	Pests Controlled	Maximum Number of Applications per Calendar Year	Minimum Days to Wait Before Reapplying	Minimum Days to Wait from Last Application to Harvest
apple and other pome fruits including crabapples mayhaw pears and quince	codling moth European grapevine moth leafminers leafrollers light brown apple moth oriental fruit moth thrips tufted apple budmoth	6	10	7
asparagus (post harvest to protect ferns)	asparagus beetles	3	7	60
bulb vegetables including dry bulb onion garlic great headed (elephant) garlic green onion leek shallot and welch onion	armyworms dipteran leafminers European corn borer flea beetle loopers thrips (suppression)	5	4	1
bushberries including blueberry currant elderberry gooseberry huckleberry juneberry lingonberry and salal	armyworms European grapevine moth fireworms fruitfly (suppression) fruitworms leafrollers light brown apple moth	6	6	3

	loopers thrips			
caneberries including blackberry black raspberry loganberry red raspberry and cultivars and/or hybrids of these	armyworms European grapevine moth fireworms fruitworms leafrollers light brown apple moth loopers sawfly	6	5	1
citrus trees including grapefruit lemons limes oranges and tangerines (to prevent fruit scarring from thrips treat when fruit is marble size)	katydid leafminers thrips worms (caterpillars)	6	6	1
cole crops (Brassica vegetables) including broccoli broccoli raab brussels sprouts cauliflower cavalo Chinese broccoli cabbage Chinese cabbage (bok choy) Chinese cabbage (napa) Chinese mustard cabbage (gai choy) collards kale kohlrabi mizuna mustard greens mustard spinach and rape greens	armyworms cabbage looper diamondback moth flea beetle (suppression) imported cabbage worm leafminers thrips worms (caterpillars)	6	4	1
cucurbits including cucumber edible gourds muskmelons (cantaloupe honeydew etc) pumpkin summer and winter squash and watermelon	armyworm leafminers loopers thrips worms (caterpillars)	6	5	all except cucumber 3 cucumber 1
dates	carob moth	3	7	7
fruiting vegetables including eggplant groundcherry okra pepino pepper tomatillo and tomato	Colorado potato beetle European corn borer flea beetle leafminers loopers thrips worms (caterpillars)	6	4	1
grape	European grapevine moth leafrollers light brown apple moth thrips worms (berry moth)	6	5	7
leafy and dried herbs including angelica balm basil borage burnet camomile catnip chervil (dried) chive chive (Chinese) cilantro cilantro (leaf) clary coriander (leaf) costmary curry (leaf) dillweed horehound hyssop lavender lemongrass lovage (leaf) marigold marjoram nasturtium parsley (dried) pennyroyal rosemary rue sage savory (summer and winter) sweet bay tansy tarragon	leafminers loopers thrips worms (caterpillars)	5	5	1

thyme wintergreen woodruff and wormwood				
leafy vegetables including amaranth arugula cardoon celery celtuce chervil Chinese celery Chinese spinach corn salad dandelion dock edible leaved chrysanthemum endive (escarole) Florence fennel garden cress garden purslane garland chrysanthemum head lettuce leaf lettuce leafy amaranth New Zealand spinach orach parsley radicchio (red chicory) rhubarb spinach Swiss chard tampala upland cress vine spinach watercress winter cress winter purslane and yellow rocket	diamondback moth leafminers loopers thrips worms (caterpillars)	6	4	1
leaves of root and tuber vegetables including bitter cassava black salsify carrot celeriac (celery root) chicory dasheen (taro) edible burdock garden beet oriental radish (daikon) parsnip radish rutabaga sugar beet sweet cassava sweet potato tanier true yam turnip turnip greens and turnip rooted chervil	diamondback moth leafminers loopers thrips worms (caterpillars)	6	4	1
peppermint and spearmint	armyworms cutworms leafminers loopers thrips (suppression)	4	4	7
pomegranate	fruit fly leafrollers moths naval orangeworm peach twig borer thrips	3	10 14	7
potatoes tuberous and corm vegetables including arracacha arrowroot artichoke bitter cassava chayote root Chinese artichoke chufa dasheen edible canna ginger Jerusalem artichoke leren potato sweet cassava sweet potato tanier true yam turmeric and yam bean	artichoke plume moth Colorado potato beetle corn borers leafminers loopers thrips worms (caterpillars)	6	7	artichoke 2 all others 7
root vegetables including black salsify carrot celeriac chicory edible burdock garden beet ginseng horseradish oriental radish parsnip radish rutabaga salsify skirret Spanish salsify sugar beet turnip turnip rooted chervil turnip rooted parsley	armyworms European corn borer flea beetle leafminers loopers thrips	3	7	3

<p>spices including allspice anise (seed) annatto (seed) black caraway caper (buds) caraway cardamom cassia (buds) celery (seed) cinnamon clove (buds) common fennel coriander (seed) culantro (seed) cumin dill (seed) Florence fennel (seed) fenugreek grains of paradise juniper (berry) lovage (seed) mace mustard (seed) nutmeg poppy (seed) saffron star anise vanilla and white pepper</p>	<p>flea beetle leafminers thrips</p>	<p>5</p>	<p>10</p>	<p>14</p>
<p>stone fruits including apricots cherries nectarines peaches plums and prunes</p>	<p>borers European grapevine moth fruit flies fruitworm Japanese beetle leafminers leafrollers light brown apple moth oriental fruit moth thrips worms (caterpillars)</p>	<p>6</p>	<p>7</p>	<p>apricot all except cherry plum prune nectarine 14 cherry plum and prune 7 nectarine peach 1</p>
<p>strawberry</p>	<p>armyworms European grapevine moth leafrollers light brown apple moth thrips</p>	<p>5</p>	<p>5</p>	<p>1</p>
<p>succulent and dried beans and peas including adzuki bean blackeyed pea chickpea cowpea crowder pea edible pod pea English pea fava bean field bean field pea garbanzo bean garden pea green pea kidney bean lentil lima bean lupins mungbean navy bean pigeon pea pinto bean runner bean snap bean snow pea sugar snap pea tepary bean wax bean and yardlong bean</p>	<p>borers Japanese beetle leafminers loopers thrips worms (caterpillars)</p>	<p>6</p>	<p>5</p>	<p>succulent 3 dried 28</p>
<p>sweet corn and popcorn (for earworms treat silk frequently as it grows)</p>	<p>corn borers earworm worms (caterpillars)</p>	<p>6</p>	<p>3</p>	<p>1</p>
<p>tree nuts including almonds cashew chestnut filbert (hazelnut) macadamia pecans pistachio and walnuts</p>	<p>codling moth filbert worm husk fly (suppression) leafrollers light brown apple moth navel orangeworms peach twig borer pecan nut casebearer redhumped caterpillar shuckworms webworms</p>	<p>5</p>	<p>7</p>	<p>1</p>

tropical tree fruits including acerola atemoya avocado biriba black sapote canistel cherimoya custard apple feijoa guava ilama jaboticaba longan lychee mamey sapote mango papaya passionfruit pulasan rambutan sapodilla soursop Spanish lime star apple starfruit sugar apple ti leaves wax jambu (wax apple) and white sapote	suppression of European grapevine moth katydids light brown apple moth thrips worms (caterpillars)	4	7	1
all crops listed in this table	fire ants	See application directions in Lawns and Ornamentals		

Lawns and Ornamentals

Use Site	Pests Controlled	Directions
lawns	worms including small (<3/4) armyworm and sod webworm cat fleas (suppression only)	Mix the amount of this product specified per gallon of spray and uniformly apply a minimum of 3 gallons of spray per 1000 sq ft of area Delay watering or mowing for 12 to 24 hours after application Armyworms For best results apply in early morning or late afternoon Cat fleas Apply early or late in the day since control requires contact with dilute spray before drying Thorough coverage is necessary Reapply in 7 to 14 days to control adults that have emerged from pupae present at time of initial treatment
outdoor ornamentals (herbaceous and woody plants)	emerald ash borer ¹ gall midges leaf feeding beetles (including Japanese beetle) leafminers sawfly larvae spider mites ² thrips worms including loopers webworms bagworms gypsy moth and tent caterpillars	Mix the amount of this product specified per pint quart or gallon of spray and uniformly spray foliage to point of runoff Uniform coverage of upper and lower leaf surfaces is essential for effective insect control
lawns ornamentals home gardens (see listed crops in previous table) and other outdoor areas	fire ants	Individual fire ant mounds Mix the amount of this product specified per gallon of spray and use a sprinkler can or similar device to apply the diluted spray as a mound drench using 1 to 2 gallons per mound Do not use pressurized sprays Apply about 10% of the spray volume around the perimeter of the mound and the remainder directly to the mound Do not disturb fire ant mound prior to application If possible apply following recent rainfall For best results apply when weather is cool 65 to 85 F or in early morning or late evening

¹Mix 5 fl oz of this product per gallon of spray and apply to foliage and bark of the tree when adult emerald ash borer are first observed emerging from the bark or when adult emerald ash borer are first noticed feeding on the leaves of the tree Reapply every 7 to 10 days until no additional adult emerald ash borer activity is observed Applications to trees already heavily infested may not prevent the eventual loss of the tree due to existing pest damage

²Apply when spider mites are first observed prior to webbing and before mite populations have become severe Reapply after 7 to 10 days (3 to 5 days in greenhouses and structures that can be altered to be closed or open) to contact newly hatched nymphs and repeat until infestation is managed **Uniform coverage of both upper and lower leaf surfaces is critical** Addition of a nonionic spray adjuvant at

0.1% v/v has been shown to enhance control of spider mites (follow surfactant manufacturer's label recommendations)

Limited Warranty and Disclaimer

Seller warrants that this product complies with the specifications expressed in this label. To the extent consistent with applicable law, Seller makes no other warranties and disclaims all other warranties, express or implied, including but not limited to warranties of merchantability and fitness for the intended purpose. To the extent consistent with applicable law, Seller's liability or default, breach or failure under this label shall be limited to the amount of the purchase price. To the extent consistent with applicable law, Seller shall have no liability for consequential damages.

For information on pesticide products (including health concerns, medical emergencies, or pesticide incidents) call National Pesticide Information Center at 1-800-858-7378.

Bonide Products, Inc.
6301 Sutliff Road
Oriskany, NY 13424

[batch code inserted at production]

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[VERSION B – FOR READY TO SPRAY PACKAGING]



Spinosad[®] Ready-to-Spray

[Additional Brand Name Captain Jim's Deadbug Brew[®] Ready to Spray Bonide[®] Captain Jack's Deadbug Brew[®] Ready To Spray Captain Jack's Deadbug Brew[®] Ready to Spray]

Optional Marketing Statements
Insect Control Product

FOR RESIDENTIAL USE IN HOME GARDENS LAWNS AND ORNAMENTALS

- For control of foliage feeding worms (caterpillars) thrips and other listed pests in
 - Fructing vegetables such as tomato pepper okra and eggplant
 - Cucurbits such as cantaloupe and honeydew
 - Cole crops (Brassica) such as broccoli cabbage and cauliflower
 - Leafy vegetables such as lettuce spinach and celery
 - Tuberous vegetables such as potatoes sweet potatoes yams Jerusalem artichoke Chinese artichoke and cassava
 - Leaves of root and tuber vegetables such as carrot garden beet and sweet potato
 - Peppermint and spearmint
 - Pomegranate
 - Root vegetables such as carrot garden beet radish and rutabaga
 - Spices such as culantro seed dill seed mustard seed and poppy seed
 - Stone fruits such as peaches plums cherries nectarines prunes and apricots
 - Apple and other pome fruits such as pears crabapples mayhaw and quince
 - Bulb vegetables such as dry bulb onion and garlic
 - Bushberries and caneberries such as blueberry blackberry and raspberry
 - Citrus trees such as oranges grapefruit lemons limes and tangerines
 - Succulent and dried beans and peas such as lima bean snap bean and blackeyed pea
 - Tropical Tree fruits such as avocado mango star apple and papaya
 - Tree nuts such as pecans almonds cashew and walnuts
 - Sweet corn and popcorn
 - Asparagus
 - Dates
 - Grape
 - Leafy and dried herbs
 - Strawberry
 - Lawns
 - Outdoor herbaceous and woody ornamentals
 - Fire ant control in lawns ornamentals home gardens and other outdoor areas

See Home Gardens and Lawns and Ornamentals sections for a complete listing of crops and use sites

- Liquid concentrate
- Easy to use
- User friendly
- No guesswork
- CONCENTRATE**
- For vegetables apples and citrus trees
- Controls worms (caterpillars)

Kills worms (caterpillars)
Controls citrus leafminers
Controls Colorado potato beetle
Kills Colorado potato beetle
Controls certain insects in vegetable gardens
Controls certain insects in the garden

For vegetables

No odor water-based formula

Water-based formula

Contains spinosad

Do-it-yourself home garden insect control

Leaves no oily residue

Kills certain home garden insect pests

Short post-harvest interval

Pick apples 7 days after spraying

Contains [trademark] Naturallyte® insect control

A [trademark] Naturallyte® insect control product

Use on fruits, vegetables, berries, citrus, grapes, nuts and ornamentals.

Kills bagworms, borers, beetles, caterpillars, codling moth, gypsy moth, Japanese beetle, loopers, leaf miners, spider mites, tent caterpillars, thrips and more!

Captain Jim's DEADBUG Brew® contains Spinosad "spin-OH-sid". Spinosad is derived from a naturally occurring soil dwelling bacterium that was collected from an abandoned rum distillery on a Caribbean island in 1982. This unique bacterium was defined as a new species when it was discovered and it has never been found in nature anywhere else in the world. Since being discovered, Spinosad has become a leading pesticide used by agriculture world wide in the production of organic produce. Today, thanks to Captain Jim, and his DEADBUG Brew® Spinosad is available to the homeowner.

To help avoid insect resistance to Spinosad, limit applications to any specific site to no more than the maximum number per year as listed.

Use with TURBO for enhanced effectiveness on borers and miners.

Be patient, it will take 1 - 2 days for insects to die off.



Active Ingredient:

spinosad (a mixture of spinosyn A and spinosyn D)	0.5%
Other Ingredients	99.5%
Total	100.0%

Contains 0.04 lb of active ingredient per gallon.

Keep Out of Reach of Children



For Use in Organic Gardening

Refer to label booklet for Directions for Use.

Notice: Read the entire label. Use only according to label directions.

Shake Well Before Use -- Avoid Freezing

®Trademark of Dow AgroSciences LLC

Net Contents _____

Precautionary Statements

Environmental Hazards

This product is toxic to bees exposed to treatment for 3 hours following treatment. Do not apply this pesticide to blooming pollen shedding or nectar producing parts of plants if bees may forage on the plants during this time period. This product is toxic to aquatic invertebrates. To protect the environment do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid run off to water bodies or drainage systems.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

For residential use in home gardens, lawns and ornamentals. Not for use on plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes.

Storage and Disposal

Do not contaminate water, food, or feed by storage and disposal.

Pesticide Storage Store in original container only in secure or locked storage area.

Pesticide Disposal *If partly filled* – Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.

Container Disposal *If empty* Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or place in trash.

This insect control product is intended for control of worms (caterpillars) and other listed insects. This product does not significantly impact predatory beneficial insects, predatory mites, and spiders while controlling target pests. Susceptible insect pests may be observed on plants up to several hours after treatment, but will have ceased active feeding before being killed.

[this section may be listed here, as well as on the front panel]

Captain Jim's DEADBUG Brew® contains Spinosad, spin OH sid. Spinosad is derived from a naturally occurring soil dwelling bacterium that was collected from an abandoned rum distillery on a Caribbean island in 1982. This unique bacterium was defined as a new species when it was discovered and it has never been found in nature anywhere else in the world. Since being discovered, Spinosad has become a leading pesticide used by agriculture world wide in the production of organic produce. Today, thanks to Captain Jim, and his DEADBUG Brew®, Spinosad is available to the homeowner.

How to Apply

Shake Well Before Use

Application Spray as directed – complete coverage is important. Treat when insects begin to appear and repeat treatments to maintain control as directed. Carefully follow all label directions and any limitations of use, such as the amount of spray to apply or PHI (pre harvest interval) for particular vegetable crops.

TWIST & SHOOT™ READY TO SPRAY INSTRUCTIONS

- 1) Make sure control knob is in OFF position, then connect to garden hose.
- 2) Turn water on at faucet. When spraying low growing plants and small shrubs, twist the control knob right to the FAN position. When spraying taller trees, shrubs and other plants, twist the control knob left to the STREAM position for extended reach and more uniform coverage. The product mixes automatically with the water as you spray.
- 3) To stop spraying, turn the control knob lever to the OFF position. Turn off water at the faucet and disconnect sprayer from garden hose.

When to Apply

Apply when listed pests are present Repeat applications may be made as indicated in the Home Gardens section See your state extension service recommendations for treatment guidelines in your area

Uses

Home Gardens

In the state of Georgia do not apply this product to Broccoli Raab Chinese Cabbage (Bok Choy) Collards Kale Mizuna Mustard Greens Mustard Spinach Rape Greens

Crops	Pests Controlled	Maximum Number of Applications per Calendar Year	Minimum Days to Wait Before Reapplying	Minimum Days to Wait from Last Application to Harvest
apple and other pome fruits including crabapples mayhaw pears and quince	codling moth European grapevine moth leafminers leafrollers light brown apple moth oriental fruit moth thrips tufted apple budmoth	6	10	7
asparagus (post harvest to protect ferns)	asparagus beetles	3	7	60
bulb vegetables including dry bulb onion garlic great headed (elephant) garlic green onion leek shallot and welch onion	armyworms dipteran leafminers European corn borer flea beetle loopers thrips (suppression)	5	4	1
bushberries including blueberry currant elderberry gooseberry huckleberry juneberry lingonberry and salal	armyworms European grapevine moth fireworms fruitfly (suppression) fruitworms leafrollers light brown apple moth loopers thrips	6	6	3
caneberries including blackberry black raspberry loganberry red raspberry and cultivars and/or hybrids of these	armyworms European grapevine moth fireworms fruitworms leafrollers light brown apple moth loopers sawfly	6	5	1
citrus trees including grapefruit lemons limes oranges and tangerines (to prevent fruit scaring	katydids leafminers thrips	6	6	1

from thrips treat when fruit is marble size)	worms (caterpillars)			
cole crops (Brassica vegetables) including broccoli broccoli raab brussels sprouts cauliflower cavalo Chinese broccoli cabbage Chinese cabbage (bok choy) Chinese cabbage (napa) Chinese mustard cabbage (gai choy) collards kale kohlrabi mizuna mustard greens mustard spinach and rape greens	armyworms cabbage looper diamondback moth flea beetle (suppression) imported cabbage worm leafminers thrips worms (caterpillars)	6	4	1
cucurbits including cucumber edible gourds muskmelons (cantaloupe honeydew etc) pumpkin summer and winter squash and watermelon	armyworm leafminers loopers thrips worms (caterpillars)	6	5	all except cucumber 3 cucumber 1
dates	carob moth	3	7	7
fruiting vegetables including eggplant groundcherry okra pepino pepper tomatillo and tomato	Colorado potato beetle European corn borer flea beetle leafminers loopers thrips worms (caterpillars)	6	4	1
grape	European grapevine moth leafrollers light brown apple moth thrips worms (berry moth)	6	5	7
leafy and dried herbs including angelica balm basil borage burnet camomile catnip chervil (dried) chive chive (Chinese) cilantro cilantro (leaf) clary coriander (leaf) costmary curry (leaf) dillweed horehound hyssop lavender lemongrass lovage (leaf) marigold marjoram nasturtium parsley (dried) pennyroyal rosemary rue sage savory (summer and winter) sweet bay tansy tarragon thyme wintergreen woodruff and wormwood	leafminers loopers thrips worms (caterpillars)	5	5	1
leafy vegetables including amaranth arugula cardoon celery celtuce chervil Chinese celery Chinese spinach corn salad dandelion dock edible leaved chrysanthemum endive (escarole) Florence fennel garden cress garden purslane garland chrysanthemum head lettuce leaf lettuce leafy amaranth New Zealand spinach orach parsley radicchio (red	diamondback moth leafminers loopers thrips worms (caterpillars)	6	4	1

chicory) rhubarb spinach Swiss chard tampala upland cress vine spinach watercress winter cress winter purslane and yellow rocket				
leaves of root and tuber vegetables including bitter cassava black salsify carrot celeriac (celery root) chicory dasheen (taro) edible burdock garden beet oriental radish (daikon) parsnip radish rutabaga sugar beet sweet cassava sweet potato tanier true yam turnip turnip greens and turnip rooted chervil	diamondback moth leafminers loopers thrips worms (caterpillars)	6	4	1
peppermint and spearmint	armyworms cutworms leafminers loopers thrips (suppression)	4	4	7
pomegranate	fruit fly leafrollers moths naval orangeworm peach twig borer thrips	3	10 14	7
potatoes tuberous and corm vegetables including arracacha arrowroot artichoke bitter cassava chayote root Chinese artichoke chufa dasheen edible canna ginger Jerusalem artichoke leren potato sweet cassava sweet potato tanier true yam turmeric and yam bean	artichoke plume moth Colorado potato beetle corn borers leafminers loopers thrips worms (caterpillars)	6	7	artichoke 2 all others 7
root vegetables including black salsify carrot celeriac chicory edible burdock garden beet ginseng horseradish oriental radish parsnip radish rutabaga salsify skirret Spanish salsify sugar beet turnip turnip rooted chervil turnip rooted parsley	armyworms European corn borer flea beetle leafminers loopers thrips	3	7	3
spices including allspice anise (seed) annatto (seed) black caraway caper (buds) caraway cardamom cassia (buds) celery (seed) cinnamon clove (buds) common fennel coriander (seed) culantro (seed) cumin dill (seed) Florence fennel (seed) fenugreek grains of paradise juniper (berry) lovage (seed) mace mustard (seed) nutmeg poppy (seed) saffron star anise vanilla and white pepper	flea beetle leafminers thrips	5	10	14
stone fruits including apricots	borers	6	7	apricot all

cherries nectarines peaches plums and prunes	European grapevine moth fruit flies fruitworm Japanese beetle leafminers leafrollers light brown apple moth oriental fruit moth thrips worms (caterpillars)			except cherry plum prune nectarine 14 cherry plum and prune 7 nectarine peach 1
strawberry	armyworms European grapevine moth leafrollers light brown apple moth thrips	5	5	1
succulent and dried beans and peas including adzuki bean blackeyed pea chickpea cowpea crowder pea edible pod pea English pea fava bean field bean field pea garbanzo bean garden pea green pea kidney bean lentil lima bean lupins mungbean navy bean pigeon pea pinto bean runner bean snap bean snow pea sugar snap pea tepary bean wax bean and yardlong bean	borers Japanese beetle leafminers loopers thrips worms (caterpillars)	6	5	succulent 3 dried 28
sweet corn and popcorn (for earworms treat silk frequently as it grows)	corn borers earworm worms (caterpillars)	6	3	1
tree nuts including almonds cashew chestnut filbert (hazelnut) macadamia pecans pistachio and walnuts	codling moth filbert worm husk fly (suppression) leafrollers light brown apple moth navel orangeworms peach twig borer pecan nut casebearer redhumped caterpillar shuckworms webworms	5	7	1
tropical tree fruits including acerola atemoya avocado biriba black sapote canistel cherimoya custard apple feijoa guava ilama jaboticaba longan lychee mamey sapote mango papaya passionfruit pulasan rambutan sapodilla soursop Spanish lime star apple starfruit sugar apple ti leaves wax jambu (wax apple) and white sapote	suppression of European grapevine moth katydids light brown apple moth thrips worms (caterpillars)	4	7	1

Lawns and Ornamentals

Use Site	Pests Controlled	Directions
lawns	worms including small (<3/4) armyworm and sod webworm cat fleas (suppression only)	Uniformly apply a minimum of 3 gallons of spray per 1000 sq ft of area Delay watering or mowing for 12 to 24 hours after application Armyworms For best results apply in early morning or late afternoon Cat fleas Apply early or late in the day since control requires contact with dilute spray before drying Thorough coverage is necessary Reapply in 7 to 14 days to control adults that have emerged from pupae present at time of initial treatment
outdoor ornamentals (herbaceous and woody plants)	emerald ash borer gall midges leaf feeding beetles (including Japanese beetle) leafminers sawfly larvae spider mites ¹ thrips worms including loopers webworms bagworms gypsy moth and tent caterpillars	Uniformly spray foliage to point of runoff Uniform coverage of upper and lower leaf surfaces is essential for effective insect control

¹Apply when spider mites are first observed prior to webbing and before mite populations have become severe Reapply after 7 to 10 days (3 to 5 days in greenhouses and structures that can be altered to be closed or open) to contact newly hatched nymphs and repeat until infestation is managed **Uniform coverage of both upper and lower leaf surfaces is critical**

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