

85678-3

08-21-2009

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



OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

8/21/2009

RedEagle International LLC
c/o Wagner Regulatory Associates, Inc.
PO Box 640
Hockessin, DE 19707

re: Abamectin 2% Miticide/Insecticide, EPA Reg. # 85678-3
label notification submitted 7/15/2009
stamped

Dear Mr. Wagner:

The Agency is in receipt of your application dated 7/15/2009 (via email) for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the product Abamectin 2% Miticide/Insecticide, EPA Reg. # 85678-3. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action(s) requested fall within the scope of PRN 98-10. The label submitted with the application has been stamped "Notification" and placed in our records.

Yours truly,

A handwritten signature in black ink, appearing to be "TCH" or similar, written over a horizontal line.

Thomas C. Harris
Insecticide / Rodenticide Branch
Registration Division (7505C)
Office of Pesticide Programs
(703) 308-9423
harris.thomas@epa.gov

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RESTRICTED USE PESTICIDE
TOXIC TO FISH, MAMMALS, AND AQUATIC ORGANISMS
 FOR RETAIL SALE AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR
 DIRECT SUPERVISION, AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED
 APPLICATOR'S CERTIFICATION.

Abamectin 2% Miticide/Insecticide

ACTIVE INGREDIENT:

Abamectin (CASRN: 65195-55-3 and 65195-56-4) 2.0%

Other Ingredients: 98.0%

Total 100.0%

Contains 0.15 lb. Abamectin per gallon

EPA Reg. No. 85678-3

EPA Est. No.:

KEEP OUT OF REACH OF CHILDREN Warning/Aviso

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

First Aid	
If In Eyes:	<ul style="list-style-type: none"> • 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 further treatment advice.
If Swallowed:	<ul style="list-style-type: none"> • Have person sip a glass of water if able to swallow. • Call a poison control center or doctor for further treatment advice. • 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.
If Inhaled:	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. • Call poison control center or doctor for treatment advice.
If On Skin Or Clothing	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for further treatment advice.

NOTE TO PHYSICIAN

Recommendations for Medical Treatment for Abamectin B₁ Acute Toxicity: Early signs of intoxication include dilation of pupils, muscular incoordination, tremors, and ataxia (unsteadiness). Toxicity following accidental ingestion of the concentrate can be minimized by inducing vomiting within one-half hour of exposure.

If toxicity from exposure has progressed to cause severe vomiting, the extent of resultant fluid and electrolyte imbalance should be gauged. Appropriate supportive measures (such as maintenance of blood pressure levels) as indicated by clinical signs, symptoms, and measurements.

In severe cases, observations should continue for at least several days until clinical condition is stable and normal. Since Abamectin B₁ is believed to enhance GABA activity in animals, it is probably wise to avoid drugs that enhance GABA activity (barbiturates, benzodiazepines, valproic acid) in patients with potentially toxic Abamectin B₁ exposure.

HOT LINE NUMBER

Have the product container label with you when calling a poison control center or doctor or going for treatment. For 24-hour medical emergency assistance (human or animal) call **1-800-222-1222**.

Manufactured by:

RedEagle International LLC

3130 Highlands by the Lake Way, Lakeland, FL 33812

NET CONTENTS: 1 Gallon

085678-00003.20090708.85678-3 label typos rev. 2009-07-08.pdf

NOTIFICATION

AUG 21 2009

PRECAUTIONARY STATEMENTS

Hazardous to Humans and Domestic Animals

WARNING/AVISO

Causes substantial, but temporary, eye injury. Harmful if swallowed. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wear protective eyewear (goggles or face shield). Do not get in eyes, on skin, or on clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

This product contains a chemical (n-methyl pyrrolidone) known to the state of California to cause birth defects or other reproductive harm.

Personal Protective Equipment

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category B on an EPA chemical-resistant category selection chart.

Applicators and other handlers must wear:

- Coveralls worn over short-sleeved shirt and short pants
- Chemical-resistant gloves - EPA chemical resistance category B (e.g. barrier laminate or butyl rubber ≥ 14 mils).
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment, mixing or loading

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

Users Should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Environmental Hazards

This pesticide is toxic to fish and wildlife. 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 apply when weather conditions favor drift from target areas. Do not contaminate water when disposing of equipment wash water or rinsate. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

Use of this product may pose a risk to threatened and endangered species of fish, amphibians, crustaceans (including fresh water shrimp), and insects. All use of this product in the state of California should comply with the recommendations of the California Endangered Species Project. Before using this product in California, consult with your county agriculture commissioner to determine use limitations that apply in your area.

Physical or Chemical Hazards

Do not use or store near heat or open flame.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited.

Storage: Store in a tightly closed container in a cool, dry place.

Pesticide Disposal: Pesticide spray mixture or rinsate that cannot be used should be disposed of in a landfill approved for pesticides. Improper disposal of excess pesticide spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by the use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal: Nonrefillable container. Do not reuse or refill this container unless the directions for use allow a different (concentrated) product to be diluted in the container. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling, if available.

DIRECTIONS FOR USE

Restricted Use Pesticide

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements on this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves - EPA chemical resistance category B (e.g. barrier laminate or butyl rubber ≥14 mils)
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

Do not apply this product through any type of irrigation system. Thorough coverage is essential for good mite and insect control on crops.

Do not apply Abamectin 2% by aerial application in New York State.

Abamectin 2% is an emulsifiable concentrate that will control certain pests on the crops listed on this label when applied according to the Directions for Use.

Abamectin 2% has been tested for phytotoxicity and has a wide margin of safety on a variety of crops. Abamectin 2% has also been shown to be compatible with many commonly used pesticides, crop oils, and nutritional sprays.

However, since it is not possible to test a large number of possible mixtures, the user should pre-test to assure the physical compatibility and lack of phytotoxicity effect of any proposed mixtures with Abamectin 2%.

Chemigation

Do not apply this product through any type of irrigation system.

Spray Drift

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator is responsible for considering all of these factors when making application decisions.

NOTE: When states have more stringent regulations, they must be observed.

Spray Drift Precautions for Application with Aircraft or Ground Application Equipment

- Apply only when wind velocity favors on target product deposition (approximately 3 to 10 mph).
- Do not apply by ground within 25 ft., or by air within 150 ft. of lakes, reservoirs, rivers, permanent streams, marshes, pot holes, or natural ponds; estuaries and commercial fish farm ponds.
- Do not cultivate within 25 ft. of the aquatic area to allow growth of a vegetative filter strip.
- Do not allow this product to drift into non-target areas. Drift may result in illegal residues or injury to nontarget species. Risk of exposure to sensitive areas can be reduced by applying this product when wind direction is away from the sensitive area.
- Do not apply when the weather conditions may cause drift.
- Avoid application when the temperature is high and/or the humidity is low. These conditions increase the evaporation of spray droplets and the likelihood of drift to aquatic areas.
- Do not apply when wind speed or wind gusts are greater than 15 mph.
- Do not apply when wind speed is below 2 mph because wind directions will vary and there is a high potential for inversion.
- Observe the following precautions when using ground application to spray tree crops or hops in the vicinity of aquatic areas such as lakes, reservoirs, permanent streams, marshes, potholes, natural ponds, estuaries, or commercial fish ponds:
 - o Do not apply when weather conditions favor drift to aquatic areas.
 - o Do not apply within 110 ft. upwind of aquatic areas or when wind speed is above 8 mph.
 - o Spray last 3 rows windward of aquatic areas using nozzles on one side only, with spray directed away from the aquatic areas.
 - o Avoid spray going over tops of trees by adjusting or turning off top nozzles. Shut off nozzles on the side away from the grove/orchard when spraying the outside row. Shut off nozzles when turning at ends of row and passing tree gaps in rows.

Spray Drift Precautions for Aerial Application

Drift Management Requirements

The following drift management requirements must be followed to avoid off-target movement from aerial applications to agricultural field crops.

Outermost Nozzle Distance: The distance of the outermost nozzles on the boom must not exceed $\frac{3}{4}$ the length of the wingspan or rotor.

Nozzle Direction: Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Maximum wind speed: Do not apply when wind speed is greater than 15 mph.

Droplet Size: The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential but will not prevent drift if applications are made improperly or under unfavorable environmental conditions (see **Wind, Temperature and Humidity, and Temperature Inversions**).

Controlling Droplet Size

Volume: Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

Pressure: Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

Number of Nozzles: Use the minimum number of nozzles that provide uniform coverage.

Nozzle Orientation: Orienting nozzles so that the spray is released parallel to the air stream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.

Nozzle Type: Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length: For some use patterns, reducing the effective boom length to less than $\frac{3}{4}$ of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height: Applications should not be made at a height greater than 10 ft. above the top of the target plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a cross wind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field the applicator must compensate for this displacement by adjusting the path of the aircraft upwind.

Wind: Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application must be avoided below 2 mph due to variable wind directions and high inversion potential.

Note: To compensate for evaporation when applying Abamectin 2% in low relative humidity, set up equipment to produce larger droplets. Evaporation of droplets is most severe when conditions are both hot and dry.

Temperature Inversions: Abamectin 2% must not be applied during a temperature inversion because the potential for drift is high. Temperature inversions restrict vertical air mixing, and this causes small, suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds that are common during inversions. Temperature inversions are characterized by temperatures that increase with altitude and are common on nights with limited cloud cover and light to no wind. Inversions begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, the movement of smoke from a ground source or an aircraft smoke generator can also identify inversions. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicated an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Resistance Management: Because of the inherent risks of resistance development to any product, it is strongly advised that Abamectin 2% be used in a sound resistance management program that includes rotation with other products with different modes of action. Resistance management practices may include, but are not limited to:

- Rotating Abamectin 2% with other products with different modes of action
- Avoiding treatment of successive generations with Abamectin 2%
- Using labeled rates at the specified spray intervals
- Using non-chemical alternatives such as beneficial arthropods
- Rotating susceptible to non-susceptible plants, and
- Using various cultural practices

Directions for Use – Crops

Almonds and Walnuts

(Ground Application Only)

Pests	For Dilute Sprays fl. oz. Abamectin 2%/100 gals.	For Concentrate Sprays fl. oz. Abamectin 2%/Acre
Two spotted spider mite Pacific spider mite Strawberry spider mite European red mite	2.5 – 5.0	10-20
Horticultural Spray Oil (Not a dormant oil)	0.25%	Minimum of 1 gal./A

Dilute Sprays: The rate of Abamectin 2% per 100 gals. is based on a volume of 400 gals./A.

Concentrate Sprays: To determine the amount of product per acre for concentrate sprays, first determine the amount that would be required in a full cover dilute spray. Use the same amount of product per acre in concentrate sprays as would be required for the dilute sprays to the same orchard/grove. This may result in use of less than 10 fl. oz./A on small trees.

Application Instructions

- Abamectin 2% may be applied using conventional dilute or concentrate sprayers calibrated to deliver sufficient water for thorough coverage. Gallonage of spray will vary with size and number of trees per acre and density of foliage. In any case, thorough coverage is essential for good spider mite and insect control.
- Apply in combination with horticultural spray oil (not a dormant oil) as directed.
- Applications without horticultural spray oil may result in reduced efficacy and/or residual control.
- Do not graze treated orchards.
- Apply Abamectin 2% when spider mites first appear. Residual spider mite control is greater from spray deposits on newer leaves compared to older leaves. A second application may be made if necessary to maintain control.

Use Restrictions

- Do not exceed 20 fl. oz. per acre per application or 40 fl. oz./A in a growing season.
- Do not make more than 2 applications per growing season.
- Do not apply in less than 40 gals. of water per acre.
- If a second application is necessary, do not retreat within 21 days.
- Do not apply within 21 days of harvest.
- Do not apply by aircraft.
- Do not graze treated orchards.

Apples (Ground Application Only)

Pests	For Dilute Sprays fl. oz. Abamectin 2%/100 gals.	For Concentrate Sprays fl. oz. Abamectin 2%/Acre
Two spotted spider mite McDaniel spider mite European red mite Tentiform leafminer White apple leafhopper	2.5 – 5.0	10-20
Horticultural Spray Oil (Not a dormant oil)	0.25%	Minimum of 1 gal./A

Dilute Sprays: The rate of Abamectin 2% per 100 gals. is based on a volume of 400 gals./A.

Concentrate Sprays: To determine the amount of product per acre for concentrate sprays, first determine the amount that would be required in a full cover dilute spray. Use the same amount of product per acre in concentrate sprays as would be required for the dilute sprays to the same orchard/grove. This may result in use of less than 10 fl. oz./A on small trees.

Application Instructions

- Abamectin 2% may be applied using conventional dilute or concentrate sprayers calibrated to deliver sufficient water for thorough coverage. Gallonage of spray will vary with size and number of trees per acre and density of foliage. In any case, thorough coverage is essential for good spider mite and insect control.
- Apply in combination with horticultural spray oil (not a dormant oil) as directed.
- Applications without horticultural spray oil may result in reduced efficacy and/or residual control.
- Do not graze treated orchards.
- For best results, use Abamectin 2% in combination with a horticulture spray oil (not a dormant oil) approved for use on apples. Apply Abamectin 2% when spider mite or insect thresholds are reached. A second application may be made if necessary to maintain control.

White Apple Leafhopper (Not for use west of the Rocky Mountains): Application of Abamectin 2% is limited only to first generation white apple leafhopper. Apply soon after petal fall in combination with horticultural spray oil (not a dormant oil).

Spider Mites: For best results, apply before a threshold of 5 spider mites per leaf is reached. Residual spider mite control with Abamectin 2% in combination with Horticultural spray oil (not a dormant oil) is greater from spray deposits on newer leaves compared to older. Applications of Abamectin 2% for spider mite control should be limited to a period extending from petal fall through six weeks following petal fall.

Tentiform Leafminers: For best results, apply against egg (to control new hatch) and early sap feeder stages of first and second generation tentiform leafminers. Do not apply during bloom.

Use Restrictions

- Do not exceed 20 fl. oz. per acre per application or 40 fl. oz./A in a growing season.
- Do not make more than 2 applications per growing season.
- Do not apply in less than 40 gals. of water per acre.
- If a second application is necessary, do not retreat within 21 days.
- Do not apply within 28 days of harvest.
- Do not apply by aircraft.
- Do not graze treated orchards.
- Use of Abamectin 2% in combination with horticultural spray oil (not a dormant oil) may cause fruit injury to certain varieties of apples, e.g., russetting on light-skinned varieties such as Golden Delicious, when used alone or when other products are applied sequentially. The Directions for Use and Precautions on horticultural spray oil labels, as well as precautions in official spray guides should be followed carefully when using Abamectin 2% in combination with horticultural spray oil (not a dormant oil).

Avocado

Pests	Application Rate fl. oz. Abamectin 2%/Acre
Avocado Thrips (<i>Scirtothrips perseae</i>)	10.0-20.0 Do not use less than 10 fl.oz. of Abamectin 2%/Acre
Horticultural Spray Oil (Not a dormant oil)	Minimum 1 to 4% v/v

Application Instructions

- Abamectin 2% may be applied using ground application equipment or aircraft. Aerial application is permitted because of its importance to the avocado growing industry. However, aerial application is not the preferred method of application for the best control of thrips. With aerial application, spray coverage and the resulting control of thrips is less than with ground application. For this reason, the user accepts all liability for the level and duration of control of thrips when Abamectin 2% is aerially applied.
- Gallons of spray will vary with size and number of trees per acre and density of foliage. In any case, thorough coverage is essential for good mite and insect control.
- For best results, apply when immature thrips are first observed but before numbers exceed 5 immature thrips per leaf/fruit. Use 10-15 fl. oz. of product/A for low(1-2 immature thrips per leaf/fruit) to moderate (3-4 immature thrips per leaf/fruit) infestations and 15-20 fl.oz. of product/A for severe (>5 immature thrips per leaf/fruit) infestations. Add a 1.0% - 4% NR (narrow range) 415 oil in combination with a horticultural spray oil (not a dormant oil) approved for use on avocados.
- Make a second application, if needed, to maintain control, but wait at least 30 days after the first application to retreat. (See Use Restrictions below)
- For Ground Application: If spray volume is greater than 400 gals./A, apply Abamectin 2% at a rate of 2.5 fl.oz. per 100 gals. of water plus 1.0% - 4.0% of an NR 415 oil.
- To prevent crop injury, observe all precautions and restrictions on the oil label. When using oil concentrations above 2.0% treat a small test area before making a large-scale application.

Use Restrictions

- Do not apply within 14 days of harvest.
- Ground and aerial application permitted.
- Do not apply in less than 100 gals. of water with ground equipment or 50 gals. of water with aircraft.
- Do not apply more than 20 fl. oz./acre per application.
- Wait at least 30 days before repeating application.
- Do not make more than 2 applications per season.
- Do not apply more than 40 fl. oz./acre per season.
- Do not allow livestock to graze in treated orchards.

Celeriac

Pests	Application Rate fl. oz. Abamectin 2%/Acre
Two-spotted spider mite	16.0

Application Instructions

- Abamectin 2% may be applied using conventional or concentrate sprayers calibrated to deliver sufficient water for thorough coverage of the foliage.
- For best results, use in combination with a non-ionic surfactant.
- Apply when mites first appear and repeat as necessary to maintain control.

Use Restrictions

- Do not apply at less than 7-day intervals.
- Do not exceed 48 fl. oz./acre after transplanting.
- Do not apply within 7 days of harvest.
- Do not apply in less than 20 gals. of water per acre.
- For resistance management purposes, use no more than 2 sequential applications.

Citrus

Pests	For Dilute Sprays ^a fl. oz. Abamectin 2%/100 gals.	For Concentrate Sprays ^b fl. oz. Abamectin 2%/Acre
Asian citrus psyllid	--	10-20 ^c
Citrus rust mite	0.5 - 2.0	5-20 ^c
Broad mite	1.0 - 2.0	10-20
Two-spotted spider mite	1.0 - 2.0	10-20
Citrus bud mite	1.0 - 2.0	10-20 ^d
Citrus leafminer	--	5-20 ^c
Citrus thrips	--	10-20 ^e
Horticultural Spray Oil (Not a dormant oil)	Minimum 0.2%	Minimum of 1 gal./A

a) Dilute Sprays: The rate of Abamectin 2% per 100 gals, is based on a volume of 1,000 gals./A.

b) Concentrate Sprays: Adjust the dosage to apply an amount per acre equal to that used in full cover dilute spray.

c) For best results, use a minimum of 150 - 300 gals./A of spray mix with a minimum of 3 gals./A of horticultural spray oil (not a dormant oil).

d) For best results, use 500 gals./A of spray mix with a minimum of 0.5% horticultural spray oil (not a dormant oil).

e) For best results, use 100-250 gals./A of spray mix applied to achieve outside coverage.

Application Instructions

- Abamectin 2% may be applied using conventional dilute or concentrate sprayers calibrated to deliver sufficient water for thorough coverage (or outside coverage for citrus leafminers and citrus thrips).
- Gallonage of spray will vary with size and number of trees per acre and density of foliage. In any case, thorough coverage is essential for good spider mite and insect control.
- Applications should be made with a minimum of 0.20% horticultural spray oil (not a dormant oil) in the spray mixture or not less than 1.0 gal. of oil per acre (except where specified differently below).

Mites: Apply when mites first appear during Spring, Summer, and/or Fall.

Citrus Bud Mite: For the best results, time the spray at "budswell."

Citrus Leafminers: Apply to protect new growth during Spring, Summer, or Fall.

Citrus Thrips: Spray applications targeted for citrus thrips will only control the current generation and must be correctly timed. Apply when economic thresholds have been reached (after egg hatch has begun - preferably early to mid-hatch).

Use Restrictions

- Do not apply within 7 days of harvest.
- Do not apply within 30 days of last treatment.
- Do not apply more than 3 applications or 40 fl. oz./A in any growing season.
- Always apply in combination with horticultural spray oil (not a dormant oil) as directed.
- For resistance management purposes, do not use in citrus nurseries.
- Do not apply by aircraft.

Cotton

Pests	fl. oz. Abamectin 2%/Acre	
	Mid-season/Lay-by	Early Season
Two spotted Spider Mite Carmine Spider Mite Pacific Spider Mite Strawberry Spider Mite	8-16	4-6
Application Instructions <ul style="list-style-type: none"> - Use 8-16 fl. oz. of Abamectin per acre depending on size of the plant and density of the foliage. - Apply with ground sprayers or aerially by fixed-wing aircraft or helicopter in a minimum of 5 gals, of water per acre to provide thorough coverage. - Begin application when mites are first noticed and repeat if necessary. - For use on early season cotton, apply when cotton is under 10 inches in height. Apply at a rate of 4-6 fl. oz. of Abamectin 2% per acre by ground equipment only. Do not use less than 4 fl. oz./A. 		
Use Restrictions <ul style="list-style-type: none"> • Do not apply within 20 days of harvest. • Do not apply within 21 days of last treatment. • Do not apply more than 2 applications or 32 fl. oz. in any growing season. • Do not apply this product through any type of irrigation system. • Do not graze or feed cotton foliage. 		

Cucurbits

Cantaloupe Chayote Chinese Waxgourd Citron Melon Cucumbers	Gherkin Edible Gourds (hyotan, cucuzza, hechima, Chinese Okra) <i>Momordica</i> spp. (balsam apple, balsam pear, bittermelon, Chinese cucumber)	Muskmelon Pumpkin Squash, Summer & Winter (Butternut, calabaze, hubbard, acorn, spaghetti) Watermelon
Pests	fl. oz. Abamectin 2%/Acre	
Spider Mites Leafminers	8.0 -16.0	
Application Instructions - Mix with water as indicated below and apply thoroughly by ground or air as a foliar spray to ensure good upper and lower leaf coverage. - Use 8 fl. oz./A for low to moderate infestations and 16 fl. oz./A for severe infestations. - Apply when adult leafminer flies or spider mites are first observed repeat applications as necessary to maintain control within constraints of a sound resistance management program.		
Use Restrictions <ul style="list-style-type: none">• Do not exceed 48 fl. oz./A in a growing season.• Do not apply within 7 days of harvest.• Do not apply at less than 7-day intervals.• Do not apply in less than 20 gals, of water per acre by ground or less than 5 gals, of water by air.• Do not make more than 2 sequential applications.• Do not apply by aircraft in New York state.		

Fruiting Vegetables

Eggplant
Peppers (bell, chili, cooking, pimento, and sweet)
Tomatillo
Tomato

Pests	fl. oz. Abamectin 2%/Acre
Broad mite	8.0 -16.0
Colorado potato beetle	
<i>Liriomyza</i> leafminers	
Spider mites	
<i>Thrips palmi</i>	
Tomato Russet mite	
Tomato pinworm	16.0

Application Instructions

- Mix with water as indicated below. Thorough coverage of the crop canopy is essential for optimum results. Inadequate coverage may result in reduced control.

Broad, russet and spider mites: Apply when mites first appear.

***Thrips palmi*:** Apply when thrips are first observed.

Tomato pinworm: Application may be made from the time moth activity is detected up to, but no later than, the time when newly emerged larvae are present.

Mites, leafminers, *Thrips palmi*, and Colorado potato beetle: Use 8 fl. oz./A for low to moderate infestations and 16 fl. oz./A for severe infestations.

Repeat application as necessary to maintain control. (See Use Restrictions below).

Note: Abamectin 2% may be used without a wetting agent. Spreading and penetrating surfactants can improve insect control when necessary to improve the wetting of foliage and to smooth out spray deposits, a nonionic surfactant is recommended. Do not use binder or sticker-type surfactants.

Note: Abamectin 2% may be applied with ground application equipment or aircraft. For best control of mites, apply Abamectin 2% with ground application equipment. With aerial application, spray coverage and the resulting control of mites is less than with ground application. For this reason, the user accepts all liability for the level and duration of control of mites when Abamectin 2% is aerially applied.

Use Restrictions

- Do not apply within 7 days of harvest.
- Ground or aerial application permitted; however do not apply with aircraft in New York State.
- For resistance management, do not use on fruiting vegetables grown for transplanting.
- Do not apply in less than 20 gals, of water/A with ground application equipment. Do not apply in less than 5 gals, of water/A with aircraft. Under conditions such as high pest populations, dense foliage, or adverse application conditions (such as high temperatures) use a greater volume of water to ensure adequate coverage.
- **Application Interval:** Wait at least 7 days before repeating application, but do not make more than 2 sequential applications.
- **Maximum Amount per Season:** Do not apply more than 48 fl. oz./A in a growing season.

Grapes

Pests	fl. oz. Abamectin 2%/Acre
Two-spotted spider mite Pacific spider mite Willamette spider mite Western grapeleaf skeletonizer Variegated leaf hoppers	8.0 -16.0
Plus a Nonionic Surfactant	

Application Instructions

Note: Abamectin 2% must be applied in combination with a nonionic surfactant to improve wetting of foliage and to smooth out spray deposits.

- Abamectin 2% may be applied using conventional ground sprayers calibrated to deliver sufficient water for thorough coverage. Thorough coverage is essential for good spider mite and insect control.
- Always apply in combination with a nonionic surfactant to improve the wetting of the foliage and smooth out spray deposits.
- Do not spray alternate rows.
- Abamectin 2% must be applied to both sides of each row for maximum coverage.
- Use 8 fl. oz./A for low to moderate infestations and 16 fl. oz./A for severe infestations.
- Do not graze treated vineyards.
- Apply Abamectin 2% plus a nonionic surfactant when western grapeleaf skeletonizer larvae are first observed. For optimal control, apply shortly after egg hatch.
- For spider mite control, apply when mites first appear, but before motiles exceed 5 per leaf.

Use Restrictions

- Do not exceed 16 fl. oz. of Abamectin 2% per acre per application or 32 fl. oz./A in a growing season.
- Do not make more than 2 applications per growing season.
- If a second application is necessary, do not retreat within 21 days of first application.
- Do not apply in less than 50 gals. of water per acre.
- Do not apply within 28 days of harvest.
- Do not apply by aircraft in New York State.
- Do not graze livestock in treated vineyards.

Note: Although Abamectin 2% in combination with a nonionic surfactant has been tested for safety to grapes, it is impossible to test on all grape varieties under the variety of biotic and abiotic conditions that may cause phytotoxicity. Therefore, Directions for Use and Precautions on nonionic labels and in official spray guides should be followed carefully when using Abamectin 2% in combination with a nonionic surfactant.

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Herbs

Basil Camomile Catnip Coriander (leaf)	Dill Weed Lavendar Marigold Marjoram (<i>Oiganum</i>)	Nasturtium Parsley (Dried) Rosemary Sage	Savory (Summer & Winter) Tarragon Thyme Wintergreen
Pests		fl. oz. Abamectin 2%/Acre	
<i>Liriomyza</i> leafminers		8.0 – 16.0	
Application Instructions Note: Not for use on chives. Mix with water as indicated below. Apply thoroughly with ground application equipment as a foliar spray and ensure good upper and lower leaf coverage. - Use 8 fl. oz./A for low to moderate infestations and 16 f l. oz./A for severe infestations. - Apply when adult flies are first observed and repeat application, as necessary to maintain control. (See Use Restrictions Below) Abamectin 2% may be used without a wetting agent. When necessary to improve the wetting of foliage and to smooth out spray deposits, a nonionic surfactant is recommended. Note: Although Abamectin 2% has been tested in combination with a nonionic surfactant for safety to herbs, it is impossible to test on all herb types and varieties under the variety of conditions that may cause crop injury. Therefore, when using Abamectin 2% in combination with a nonionic surfactant, carefully follow the Directions for Use and Precautions on the non ionic surfactant label and in official spray guides.			
Use Restrictions <ul style="list-style-type: none">• Do not apply within 14 days of harvest• Apply with ground application equipment.• Use a minimum of 30 gals of water/A.• Wait at least 7 days before repeating application.• Do not make more than 2 applications per single cutting (harvest).• Do not make more than 6 applications per cropping season at the 8 fl. oz./A rate or 3 applications per cropping season at the 16 fl. oz./A rate.			

Hops

Pests	fl. oz. Abamectin 2%/Acre
Two-spotted spider mite	8.0 -16.0
Application Instructions <ul style="list-style-type: none"> - Apply Abamectin 2% when two-spotted spider mites reach treatment thresholds. - Mix with water as indicated below and apply by ground equipment as a foliar spray to assure good upper and lower coverage. - Gallonage of spray may vary with the size of plants and density of foliage. In any case, thorough coverage is essential for good control of two-spotted mites. When using concentrate sprays, the amount of water is reduced, but the amount of Abamectin 2% per acre should remain the same as for dilute sprays. - If a second application is necessary for control, do not retreat within 21 days of the first application and only after an alternative miticide with a different mode of action has been used. 	
Use Restrictions <ul style="list-style-type: none"> Do not use less than 16 fl. oz. per application or exceed 32 fl. oz./A per growing season. Do not apply within 28 days of harvest. Do not apply in less than 40 gals, of water per acre. If a second application is necessary to maintain control, do not retreat within 21 days of the first application. Do not apply by aircraft. Do not permit livestock to graze treated hop yards. 	
Not registered for use in California Note: Abamectin 2% may be used without any wetting agent. When necessary to improve the wetting of foliage and to smooth out spray deposits, a nonionic surfactant is recommended.	

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Leafy Vegetables

Amaranth (Chinese Spinach) Celery Dandelion	Endive Fennel Garden Cress Lettuce (head & leaf)	Parsley Radicchio Rhubarb Spinach	Swiss Chard Upland Cress
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Pests

fl. oz. Abamectin 2%/Acre

Liriomyza leafminers

8.0 – 16.0

Spider mites (two spotted and carmine)

Application Instructions

- Mix with water as indicated below. Thorough coverage of the crop canopy is essential for optimum results. Inadequate coverage may result in reduced control.

- Use 8 -12 fl. oz./A for low to moderate infestations and 16 fl. oz./A for severe infestations.

Spider mites: Apply when mites first appear, and repeat as needed to maintain control. (See Use Restrictions below).

Leafminers: Apply when adult flies are first observed and repeat applications as needed to maintain control. (See Use Restrictions below).

Note: Abamectin 2% may be applied with ground application equipment or aircraft. For best control of mites, apply Abamectin 2% with ground application equipment. With aerial application, spray coverage and the resulting control of mites is less than with ground application. For this reason, the user accepts all liability for the level and duration of control of mites when Abamectin 2% is aurally applied.

Note: Abamectin 2% may be used without a wetting agent. Spreading and penetrating surfactants can improve insect control. When necessary to improve the wetting of foliage and to smooth out spray deposits, a nonionic surfactant is recommended. Do not use binder or sticker-type surfactants.

Use Restrictions

- Do not apply within 7 days of harvest.
- Ground or aerial application permitted; however, do not apply with aircraft in New York State.
- For resistance management, do not use on leafy vegetables grown for transplanting.
- Do not apply in less than 20 gals. of water/A with ground application equipment. Do not apply in less than 5 gals. of water per acre with aircraft. Under conditions such as high pest populations, dense foliage, or adverse application conditions (such as high temperatures) use a greater volume of water to ensure adequate coverage.
- Wait at least 7 days before repeating application.
- Do not make more than 2 sequential applications.
- Do not apply more than 48 fl. oz./A per growing season.

Mint (Peppermint & Spearmint)

Pests	fl. oz. Abamectin 2%/Acre
Two Spotted Spider Mites	8.0 – 12.0

Application Instructions

- Mix with water as indicated below. Thorough coverage of the crop canopy is essential for optimum results. Inadequate coverage may result in reduced control.
- Treat when mites first appear.
- For optimum control, a nonionic surfactant or organosilicone-based surfactant should be used at the manufacturers' recommended rate.

Use Restrictions

- Do not apply within 28 days of harvest.
- Ground or aerial application permitted; however do not apply with aircraft in New York State.
- Do not apply in less than 20 gals. of water/A with ground application equipment. Do not apply in less than 5 gals. water/A with aircraft. Under conditions such as high pest populations, dense foliage, or adverse application conditions such as high temperatures, use a greater volume of water to ensure adequate coverage.
- Do not apply more than 12 fl. oz./A per application.
- Wait at least 7 days before repeating application.
- Do not make more than 2 sequential applications and do not apply more than 3 applications per season.
- Do not apply more than 36 fl. oz./A per crop per season.
- Do not allow livestock to graze or feed treated foliage to livestock.

Pears (Including oriental pear trees)

Pests	For Dilute Sprays fl. oz. Abamectin 2%/100 gals.	For Concentrate Sprays fl. oz. Abamectin 2%/Acre
Two spotted spider mite McDaniel spider mite European red mite Pear rust mite Yellow mite	2.5 – 5.0	10-20
Pear psyllid	2.5 – 5.0	10-20
Horticultural Spray Oil (Not a dormant oil)	0.25%	Minimum of 1 gal./A

Dilute Sprays: The rate of Abamectin 2% per 100 gals. is based on a volume of 400 gals./A.

Concentrate Sprays: To determine the amount of product per acre for concentrate sprays, first determine the amount that would be required in a full cover dilute spray. Use the same amount of product per acre in concentrate sprays as would be required for the dilute sprays to the same orchard/grove. This may result in use of less than 10 fl. oz./A on small trees.

Application Instructions

- Abamectin 2% may be applied using conventional dilute or concentrate sprayers calibrated to deliver sufficient water for thorough coverage. Gallonage of spray will vary with size and number of trees per acre and density of foliage. In any case, thorough coverage is essential for good spider mite and insect control.
- Apply in combination with horticultural spray oil (not a dormant oil) as directed.
- Do not graze treated orchards.
- Use Abamectin 2% with a minimum of 0.25% horticultural spray oil (not a dormant oil) in the dilute spray mixture and not less than 1.0 gal. of horticultural spray oil (not a dormant oil) per acre in the final finished spray.

Use Restrictions

- Do not exceed 20 fl. oz. of Abamectin 2% per acre per application or 40 fl. oz./A in a growing season.
- Do not make more than 2 applications per growing season.
- Do not apply less than 40 gals. of water per acre.
- If a second application is necessary, do not retreat within 21 days of the first application.
- Do not apply within 28 days of harvest.
- Do not apply by aircraft.
- Do not graze treated orchards.

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Plums and Prunes

Pests	For Dilute Sprays fl. oz. Abamectin 2%/100 gals.	For Concentrate Sprays fl. oz. Abamectin 2%/Acre
Two spotted spider mite Pacific spider mite European red mite	2.5 – 5.0	10-20
Horticultural Spray Oil (Not a dormant oil) or Nonionic Surfactant	0.25%	Minimum of 1 gal./A

Dilute Sprays: The rate of Abamectin 2% per 100 gals. is based on a volume of 400 gals./A.

Concentrate Sprays: To determine the amount of product per acre for concentrate sprays, first determine the amount that would be required in a full cover dilute spray. Use the same amount of product per acre in concentrate sprays as would be required for the dilute sprays to the same orchard/grove. This may result in use of less than 10 fl. oz./A on small trees.

Application Instructions

- Apply when mites first appear.
- A second application may be made, if needed, to maintain control. (See Use Restrictions below)
- Always apply Abamectin 2% in combination with a nonionic surfactant that spreads on and/or penetrates the leaf cuticle, or apply with horticultural spray oil (not a dormant oil).

Note:

1. A nonionic surfactant that spreads on and/or penetrates the leaf cuticle can improve insect control. Although Abamectin 2% has been tested in combination with nonionic surfactants for safety to stone fruit, it is impossible to test on all plum/prune fruit varieties under the variety of conditions that may cause crop injury. Therefore, when using Abamectin 2% in combination with a nonionic surfactant, carefully follow the Directions for Use and Precautions on the surfactant label and in official spray guides.
 2. A horticultural oil (not a dormant oil) may improve efficacy and can be used but it may increase the possibility of phytotoxicity to foliage and fruit.
- Use nonionic surfactants at the manufacturer's recommended rate.
 - Use a minimum of 0.25% horticultural spray oil (not a dormant oil) in the dilute spray mixture and not less than 1.0 gal of horticultural spray oil per acre in the final finished spray.

Use Restrictions

- Do not apply within 21 days of harvest
- Ground application only. Do not apply with aircraft.
- Do not apply in less than 40 gals. of water/A.
- Do not apply more than 20 fl. oz./A per application.
- If a second application is needed, wait at least 21 days before repeating application.
- Do not make more than 2 applications per growing season.
- Do not apply more than 40 fl. oz./A in a growing season.
- Do not allow livestock to graze in treated orchards.

Potatoes

Pests	fl. oz. Abamectin 2%/Acre
<i>Liriomyza</i> leafminers Spider Mites Colorado Potato Beetle	8.0 – 16.0

Application Instructions

- Mix with water as indicated below. Apply thoroughly by ground or air application equipment as a foliar spray and ensure good upper and lower leaf coverage.
- Use 8 fl. oz./A for low to moderate infestations and 16 fl. oz./A for severe infestations.
- The addition of a nonionic surfactant or organosilicone-based surfactant, at the manufacturer's recommended rate is suggested for optimum spider mite and insect control.

Insect and spider mite: Control may be reduced if Abamectin 2% is used in combination with a sticker or binder type product such as Bravo®, Weather Stik®.

Colorado potato beetle: Do not make more than 2 applications per crop. Make the first application after approximately 50% of the egg masses have hatched and larvae are present. If 2 applications are made, they should be restricted to a single Colorado potato beetle generation per crop and should not be made at less than 7-day intervals.

***Liriomyza* leafminers:** Make the first application when adult flies are first observed. Repeat applications as necessary to maintain control, but not at intervals less than 7 days.

Spider mites: Make the first application when mites first appear. Repeat application as necessary to maintain control, but not at intervals less than 7 days.

Use Restrictions

- Do not exceed 32 fl. oz. of Abamectin 2% per acre per crop for spider mite or Colorado potato beetle control.
- Do not exceed 48 fl. oz. of Abamectin 2% per acre per crop for leafminer control.
- Do not apply within 14 days of harvest.
- Do not apply in less than 20 gals. of water per acre by ground or less than 5 gals. of water per acre by air.
- Do not graze or feed treated foliage to livestock.
- Do not make more than 2 sequential applications.
- Do not apply by aircraft in New York state.
- Do not apply at less than 7 day intervals.

Strawberries

Pests	fl. oz. Abamectin 2%/Acre
Two Spotted Spider Mite	16.0

Application Instructions

- Adjust spray volume and nozzle placement to assure maximum coverage of tops and undersides of leaves.
- Use 16 fl. oz. of Abamectin 2% per acre. Make 2 applications 7-10 days apart when mites first appear.
- Repeat this sequence of application if necessary to maintain control.

Use Restrictions

- Do not exceed 16 fl. oz./A per application or 64 fl. oz./A in a growing season.
- Do not apply within 3 days of harvest.
- For resistance management purposes, do not use in strawberry nurseries.
- Do not apply in less than 100 gals. of water per acre.
- Do not repeat treatment within 21 days of second application.
- Do not apply by aircraft.

Note: Abamectin 2% may be used without any wetting agent. When necessary to improve the wetting of foliage and to smooth out spray deposits, a nonionic surfactant is recommended.

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