

66222-226

12/27/2011

1 of 17



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

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

12/27/2011

Jennifer Yentel
Makhteshim Agan of North America, Inc.
4515 Falls of Neuse Rd., Suite 300
Raleigh, NC 27609

re: ABBA Ultra Miticide/Insecticide, EPA Reg. # 66222-226
label amendment submitted 5/26/11, revised 9/15/11, 11/29/11 (D# 450095)
accepted (11/29/11 version)

Dear Ms. Yentel:

This label amendment updates the use sites on which this product may be used (adds stone fruit, tree nuts, tuberous and corm vegetables).

The revised labeling reference above, submitted in connection with the registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable provided that you submit two copies of the revised final printed label for the record before you release the product for shipment.

If the above provision is not complied with the registration will be subject to cancellation in accordance with FIFRA Section 6(e). Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions.

A copy of the label stamped "accepted" is enclosed for your records. If you have any questions please contact Tom Harris at (703) 308-9423 or harris.thomas@epa.gov.

Sincerely yours,

A handwritten signature in black ink, appearing to read "John D. Hebert", written over a large, stylized circular flourish.

John D. Hebert
Product Manager
Insecticide Rodenticide Branch
Registration Division (7505C)

enclosure

2017

RESTRICTED USE PESTICIDE

TOXIC TO FISH, MAMMALS, AND AQUATIC ORGANISMS

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

ABBA® ULTRA

MITICIDE/INSECTICIDE

ACTIVE INGREDIENT:

% BY WT.

Abamectin: 3.74%

INERT INGREDIENTS: 96.26%

TOTAL: 100.00%

1 gallon contains 0.3 lb abamectin

KEEP OUT OF REACH OF CHILDREN

WARNING / AVISO

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.)

Manufactured for:
Makhteshim Agan of North America, Inc.
4515 Falls of Neuse Rd., Suite 300
Raleigh, NC 27609

ACCEPTED
12/27/2011
Under the Federal Insecticide, Fungicide, and
Rodenticide Act, As amended, for the pesticide
registered under EPA Reg. No.
66222-226

EPA Reg. No. 66222-226

EPA Est. No. [REDACTED]

NET CONTENTS: ___ GAL(S)

FIRST AID

IF SWALLOWED:	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Do not give any liquid to the person. • 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 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 immediately for treatment advice.
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of soap and water for 15 – 20 minutes. • Call a poison control center or doctor for treatment advice.
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 a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact Prosar at 1-877-250-9291 for emergency medical treatment information.

Note to physician: Early signs of intoxication include mydriasis (dilated pupils), ataxia (unsteadiness), and muscle tremors. Toxicity follows accidental ingestion of the ABBA® Ultra and can be minimized by promptly administering activated charcoal. If toxicity from exposure has progressed to cause severe vomiting, the extent of resultant fluid and electrolyte imbalance should be gauged. Appropriate supportive parenteral fluid replacement therapy should be given, along with other required supportive measures (such as maintenance of blood pressure levels and respiratory functionality) 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 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 exposure.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING/AVISO: May be fatal if swallowed. Causes moderate eye irritation. Harmful if inhaled or absorbed through skin. Avoid contact with eyes, skin or clothing.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

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

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Socks and shoes
- Chemical-resistant gloves (such as barrier laminate or butyl rubber or other selection category B material).

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.

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

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 must comply with the directions 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.

**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 in 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. Exception: For grape girdling, cane turning, and tying in grapes, do not enter or allow worker entry into treated areas during the **restricted-entry interval (REI) of 4 days.**

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that 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, such as barrier laminate or butyl rubber ≥ 14 mils
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

FAILURE TO STRICTLY FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL CAN RESULT IN INJURY TO CROPS, INEFFECTIVE PEST CONTROL, AND/OR ILLEGAL RESIDUES.

When applied to crops in accordance with the **DIRECTIONS FOR USE**, ABBA® Ultra miticide/insecticide, a microemulsion, effectively controls mites and other insects specified on this label. Thorough coverage is essential for effective insect and mite control.

ABBA Ultra offers a wide margin of safety when applied to a variety of crops. ABBA Ultra is also compatible with other commonly used pesticides, nutritional sprays, and crop oils. Pretest use of this product for physical compatibility and lack of phytotoxic effect when using any proposed mixtures with ABBA Ultra.

When an adjuvant is to be used with this product, Makhteshim Agan of North America, Inc. suggests the use of a Chemical Producers and Distributors Association certified adjuvant.

CHEMIGATION STATEMENT

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

USE RESTRICTIONS

Do not apply ABBA Ultra by aerial application equipment in New York State.

SPRAY DRIFT

Responsibility: 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 ABBA Ultra only when wind velocity favors on target product deposition (approximately 3 to 10 mph).
- Do not apply with ground application equipment within 25 ft of or with aircraft within 150 ft of lakes, reservoirs, rivers, permanent streams, marshes, pot holes, natural ponds, estuaries, or 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 onto 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 the 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 direction will vary and there is a high potential for inversion.
- Observe the following precautions when using ground application to spray tree crops (almonds, apples, avocado, citrus, pears, plums, prunes, and walnuts) or hops in the vicinity of aquatic areas such as lakes, reservoirs, permanent streams, marshes, potholes, natural ponds, estuaries, or commercial fish ponds:
 - Do not apply ABBA Ultra when weather conditions favor drift to aquatic areas.
 - Do not apply within 110 ft upwind of aquatic areas or when wind speed is above 8 mph.
 - Spray last 3 rows upwind of aquatic areas using nozzles on one side only, with spray directed away from the aquatic areas.
 - 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 direction and high inversion potential.

Note: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity

To compensate for evaporation when applying ABBA Ultra 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

ABBA Ultra 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) indicates an inversion, while smoke that moves upward and rapidly dissipates, indicates good vertical air mixing.

RESISTANCE MANAGEMENT

To minimize the potential development of pest resistance to abamectin, use of resistance management strategies is imperative, especially when applying ABBA Ultra to crops that are hosts of pests on this label that have multiple generations per crop or per year. Examples of resistance management may include but are not limited to the following: non-chemical alternatives (such as beneficial arthropods); rotating susceptible and non-susceptible plants; rotating uses of pesticides with different modes of action; avoiding use of the same product on successive generations of pests; use of various other cultural practices; and using labeled rates at specified spray intervals. Consult your State Cooperative Extension Service to obtain additional information regarding these or other resistance management strategies.

CROP USE INSTRUCTIONS

APPLES

For controlling tentiform leafminers, white apple leafhoppers, European red mites, McDaniel spider mites, and two-spotted spider mites. (Ground application only.)

Apply ABBA Ultra when pest thresholds are reached. If necessary, make a second application after at least 21 days to attain adequate control.

White Apple Leafhopper (Do not use west of Rocky Mountains): Only apply ABBA Ultra to the first generation white apple leafhopper. Apply with a horticultural spray oil* soon after petal fall.

Spider Mites: Apply ABBA Ultra before the population reaches 5 spider mites per leaf. Residual control is improved when spray deposits are on newer leaves (compared to older leaves). Limit applications to the period between petal fall through six weeks after petal fall.

Tentiform Leafminers: Apply ABBA Ultra onto eggs to control new hatch and at early sap feeder stages of the first and second generations when leafminer populations reach locally established thresholds. Do not apply ABBA Ultra during bloom stage.

Use conventional dilute or concentrate ground sprayers with enough water to produce thorough coverage. Spray volume will vary with the size and number of trees per acre and foliage density. Assure thorough coverage to attain spider mite and insect control. Best results are attained when applied as directed in combination with Horticultural Spray Oil (not dormant oil) that has been approved for use on apples. If Horticultural Spray Oil is not used, reduced efficacy and/or reduced residual control could result.

See **SPRAY DRIFT** section of this label for spray drift precautions.

ABBA Ultra can cause injury to fruit of some apple varieties when used with Horticultural Spray Oils or when other products are sequentially applied. For example, russetting can occur on Golden Delicious and other light-skinned varieties. Users must carefully follow the **DIRECTIONS FOR USE** and **PRECAUTIONS** on the labels of Horticultural Spray Oils or those in official spray guides when using ABBA Ultra in combination with Horticultural Spray Oils. For example, applications of ABBA Ultra with horticultural spray oil less than 14 days before or after a captan application can result in phytotoxicity.

Pests	Rate of ABBA Ultra & Horticultural Spray Oil*	
	Dilute Sprays ¹	Concentrate Sprays ²
Two-spotted spider mite McDaniel spider mite European red mite Tentiform leafminers White apple leafhopper	1.25 – 2.5 fl oz ABBA Ultra/100 gals water <i>plus</i> 1 qt. Horticultural Spray Oil*/100 gals (i.e., 0.25% of finished spray)	5 – 10 fl oz ABBA Ultra/A <i>plus</i> at least 1 gal Horticultural Spray Oil*/A

* Not a dormant oil

¹ Rates per 100 gals dilute spray are based on a 400 gals/acre spray volume.

² To determine the ABBA Ultra rate per acre for concentrate sprays, it is necessary to first determine the amount needed for a full cover dilute spray. Use the same amount of product per acre in concentrate sprays as

required for dilute sprays to the same grove/orchard. The result could be less than 5 fl oz/acre when used on smaller trees.

Use Restrictions — Apples

- Do not apply aerially.
- Do not apply ABBA Ultra during bloom stage.
- Do not apply in less than 40 gallons of water per acre.
- Do not retreat within 21 days of the first application.
- Do not use more than 10 fl oz of ABBA Ultra per acre (0.023 lb ai/A) per application or 20 fl oz/A (0.046 lb ai/A) in a growing season.
- Do not exceed 2 applications per growing season.
- Do not apply within 28 days of harvest.
- Do not graze treated orchards.

See **SPRAY DRIFT** section of this label for spray drift precautions.

AVOCADOS

For controlling avocado thrips.

Apply ABBA Ultra using ground or aerial application equipment. Aerial application is permitted; however, aerial application is not the preferred method of application for the best control of thrips. Spray coverage and the resulting control of thrips when applied by air is less than with ground application. The user accepts all liability for the level and duration of control of thrips when ABBA Ultra is aerially applied. When applying by ground, use a minimum of 100 gallons of water per acre and when applying by air, use a minimum of 50 gallons of water per acre.

Spray volume will vary with the size and number of trees per acre and foliage density. Assure thorough coverage to attain spider mite and insect control.

Pests	Rate of ABBA Ultra fl oz/A	*Thrips Infestation level	Number of immature thrips per leaf/fruit
Avocado Thrips (<i>Scirtothrips perseae</i>)	5.0 – 10.0 ABBA Ultra/A plus a horticultural oil as specified below	Low	1 – 2
		Moderate	3 – 4
		Severe	More than 5

Avocado Thrips: Apply when immature thrips are first observed but before numbers exceed 5 immature thrips per leaf/fruit. Use 5 – 7.5 fl oz of product/A for low* to moderate* infestations and 7.5 – 10 fl oz of product/A for severe* infestations. Add a 1.0% – 4.0% NR (narrow range) 415 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**). For Ground Application: If spray volume is greater than 400 gals/A, apply ABBA Ultra at a rate of 1.25 fl oz per 100 gals of water plus 1.0%-4.0% of a narrow range 415 oil approved for use on avocados. Observe all precautions and restrictions on the oil label to prevent crop injury. Treat a small test area before making a large scale application when using oil concentrations above 2.0%.

Use Restrictions — Avocados

- Do not use less than 5 fl oz of ABBA Ultra/A (0.012 lb ai/A) per application nor more than 10 fl oz of ABBA Ultra/A (0.023 lb ai/A) per application.
- Do not apply within 14 days of harvest.
- Do not retreat within 30 days of the first application nor make more than 2 applications per season.
- Do not apply more than 20 fl oz/A (0.046 lb ai/A) per season.
- Do not allow livestock to graze in treated orchard.

CELERIAC (*Apium graveolens*)

For controlling two-spotted spider mites.

Apply ABBA Ultra when mites first appear and repeat as necessary to maintain control (see **Use Restrictions**).

Use conventional dilute or concentrate ground sprayers with enough water to provide thorough coverage of the foliage. Best results are obtained when ABBA Ultra is used in combination with a non-ionic surfactant.

Pests	fl oz ABBA Ultra/A
Two-spotted spider mites	8.0

Use Restrictions — Celeriac

- Do not apply in less than 20 gallons of water per acre.
- Do not apply at intervals of less than 7 days.
- Do not exceed 24 fl oz/A (0.056 lb ai/A) after transplanting.
- Do not apply within 7 days of harvest.
- For resistance management, do not exceed 2 applications sequentially.

CITRUS FRUIT CROP GROUP (CROP GROUP 10)

Calamondin; Citrus citron; Citrus hybrids (*Citrus* spp.) (includes chironja, tangelo, tangor); Grapefruit; Kumquat; Lemon; Lime; Mandarin (tangerine); Sour orange; Sweet orange; Pummelo; and Satsuma mandarin.

Aerial Application – Citrus Leafminer only:

- Aerial application is permitted **only** for control of citrus leafminer
- Do not apply with aircraft to citrus in California

Ground Application

- Apply ABBA Ultra using conventional dilute or concentrate ground sprayers with enough water to provide thorough coverage (or outside coverage to control Asian citrus psyllid, citrus thrips, and citrus leafminers).
- Spray volume varies with the number and size of trees per acre, and also with foliage density. For good pest control, ensure thorough coverage.

For controlling citrus rust mites, broad mites, two-spotted spider mites, citrus bud mites, Asian citrus psyllid, citrus leafminers, and citrus thrips.

Mites (other than citrus bud mites): Apply ABBA Ultra when mites initially appear in the spring, summer, and/or fall months.

Citrus Bud Mites: Best results can be attained when ABBA Ultra is applied at “bud swell.”

Asian Citrus Psyllid: Apply ABBA Ultra to protect new growth during the spring, summer, or fall months but will only control adult and nymphs present at the time of application.

Citrus Leafminers: Apply ABBA Ultra to protect new growth during the spring, summer, or fall months. Ground or aerial application is permitted in all citrus areas. NOTE: Aerial application is not approved in California. For aerial application, use a minimum of 10 gallons of finished spray volume per acre. Under conditions such as high pest populations, dense foliage, adverse application conditions (i.e., high temperatures) use a greater volume of water to insure adequate coverage.

Citrus Thrips: Each application of ABBA Ultra only controls the current generation. Therefore, applications must be timed when economic thresholds have been reached—after eggs have begun to hatch, preferably at early to mid-hatch.

Apply ABBA Ultra using conventional dilute or concentrate ground sprayers with enough water to provide thorough coverage (or outside coverage to control Asian citrus psyllid, citrus thrips, and citrus leafminers). Spray volume varies with the number and size of trees per acre, and also with foliage density. For good pest control, ensure thorough coverage.

See **SPRAY DRIFT** section of this label for spray drift precautions.

Unless specified differently below, apply ABBA Ultra with at least 1.6 pt Horticultural Spray Oil (not dormant oil)/100 gals finished spray (i.e., 0.2% of finished spray) for dilute sprays or at least 1.0 gallon of Horticultural Spray Oil per acre in concentrate sprays.

Pests	Dilute Sprays ¹	Concentrate Sprays ²
	fl oz ABBA Ultra/100 gals	fl oz ABBA Ultra/A
Citrus rust mite	0.25 – 1.0	2.5 – 10 ³
Broad mite	0.5 – 1.0	5 – 10 ³
Two-spotted spider mite	0.5 – 1.0	5 – 10
Citrus bud mite	0.5 – 1.0	5 – 10 ⁴
Asian Citrus Psyllid	---	5 – 10 ³
Citrus leafminer	---	2.5 – 10 ³
Citrus thrips	---	5 – 10 ⁵
	Plus at least 1.6 pt Horticultural Spray Oil**/100 gals (i.e., 0.2% of finished spray)	Plus at least 1 gal Horticultural Spray Oil**/A

** Not a dormant oil.

¹ The rate of ABBA Ultra per 100 gals is based on a volume of 1,000 gals/A dilute spray.

² For concentrate sprays, the dosage must be adjusted to apply an amount of product per acre equal to the amount required for full cover dilute sprays.

³ For ground application, use 150 – 300 gals/A of spray mix with a minimum of 3 gals /A of horticultural oil (not a dormant oil) and apply at a ground speed of 1 to 1.5 MPH.

⁴ Use at least 500 gals of spray mix per acre with at least 0.5% Horticultural Spray Oil**.

⁵ Use 100-250 gals of spray mix/A applied to achieve outside coverage.

Use Restrictions — Citrus Fruit Crop Group

- Aerial application is permitted only for control of citrus leafminer.
- All other pests: Ground application only. Do not apply by air.
- Aerial application to citrus is not approved in California.
- Always apply ABBA Ultra with Horticultural Spray Oil (not a dormant oil) as directed.
- Do not apply ABBA Ultra or any other abamectin-containing product within 30 days of the last treatment.
- Do not apply more than 20 fl oz per acre (0.046 lb ai/A) of ABBA Ultra or any other abamectin-containing product in any growing season. Do not make more than 3 applications of ABBA Ultra or any other abamectin-containing product in any growing season.
- Do not allow livestock to graze in treated orchards.
- Do not apply within 7 days of harvest.
- For resistance management, do not apply ABBA Ultra in citrus nurseries.

COTTON

For control of two-spotted spider mites, carmine spider mites, Pacific spider mites, and strawberry spider mites.

Apply when mites first appear. Aerial or ground applications are permitted. Thorough coverage of the crop is essential; for best coverage and control, apply ABBA Ultra with ground application equipment. Mix with sufficient volume of water to ensure thorough coverage but do not apply in less than 5 gallons of water per acre. The use rate depends on the size of the plant and the density of the foliage. Repeat applications as necessary (see **Use Restrictions**).

See **SPRAY DRIFT** section of this label for spray drift precautions.

ABBA Ultra can be used without a wetting agent. Improved mite control can be achieved by the addition of a spreading or penetrating surfactant. A nonionic surfactant is suggested to improve the wetting of foliage. Do not use binder or sticker-type surfactants.

For early-season applications, apply 2 – 3 fl oz of ABBA Ultra per acre when cotton is no more than 10 inches high. Do not use less than 2 fl oz of ABBA Ultra per acre. **West of the Rockies:** the lower use rates can only be used on cotton that is no more than 10 inches high and on applications that are made with ground equipment only.

Apply 4 – 8 fl oz of ABBA Ultra per acre when mites are first observed and repeat applications as necessary (see **Use Restrictions**). Use rates depend on the size of the plant and the density of the foliage

Use Restrictions — Cotton

- Do not apply more than 2 times per season or more than 16 fl oz of product per acre (0.038 lb ai/A) per growing season.
- Do not apply at intervals of less than 21 days.
- Do not apply within 20 days of harvest.
- Do not feed or allow livestock to graze treated cotton.

CUCURBIT VEGETABLES CROP GROUP (CROP GROUP 9)

Chayote (fruit); Chinese waxgourd; Citron Melon; Cucumber; Gherkin; Edible Gourds (*Lagenaria* spp including hyotan, cucuzza; *Luffa acutangula*, *L. cylindrica* spp including hechima, Chinese okra); *Momordica* spp. (includes balsam apple, balsam pear, bittermelon, Chinese cucumber); Muskmelon (hybrids and cultivars of *Cucumis melo* includes true cantaloupe, cantaloupe, casaba, Crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon, and snake melon); Pumpkin; Summer Squash (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini); Winter Squash (includes butternut squash, calabaza, hubbard squash, acorn squash, spaghetti squash); and Watermelon (includes hybrids and/or varieties of *Citrullus lanatus*).

For controlling leafminers and spider mites.

Apply ABBA Ultra when adult leafminer flies or spider mites are initially seen. Repeat applications when needed to maintain control (see **Use Restrictions**). When low to moderate infestations are present, use 4 fl oz per acre; for severe infestations, use 8 fl oz per acre.

Apply as a foliar spray in at least 20 gallons of water per acre by ground or in at least 5 gallons per acre by air. Under conditions such as high pest populations, dense or rank foliage, high temperatures or other such adverse application situations, use a greater water volume to ensure adequate coverage. For best results, ensure that good upper and lower leaf coverage is attained. Do not apply ABBA Ultra by aerial application equipment in New York State.

Pests	fl oz ABBA Ultra/A
Spider mites	4.0 – 8.0
Leafminers	

Use Restrictions — Cucurbit Vegetables Crop Group

- Do not apply in less than 20 gallons of water per acre by ground or in less than 5 gallons per acre by aircraft.
- Do not apply at intervals of less than 7 days.
- Do not use more than 24 fl oz per acre (0.056 lb ai/A) in any growing season.
- Do not apply within 7 days of harvest.
- For resistance management, do not exceed 2 sequential applications.

FRUITING VEGETABLES CROP GROUP (EXCEPT CUCURBITS) (CROP GROUP 8)

Eggplant; Groundcherry; Pepino; Pepper (includes bell pepper, chili pepper, cooking pepper, pimento, sweet pepper); Tomatillo; and Tomato

For controlling Tomato pinworm, Broad mite, *Liriomyza* leafminers, Colorado potato beetle, Spider mites, Thrips palmi, Tomato russet mite, and Tomato psyllid.

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

Thrips palmi: Apply when thrips are first observed.

Tomato pinworm: Application can 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 4 fl oz/A for low to moderate infestations and 8 fl oz/A for severe infestations.

Apply as a foliar spray in at least 20 gallons of water per acre by ground or in at least 5 gallons per acre by air. Under conditions such as high pest populations, dense or rank foliage, high temperatures or other such adverse application situations, use a greater water volume to ensure adequate coverage. For best results, ensure thorough coverage of the crop canopy. With aerial application, spray coverage and the resulting control of mites is less than when using ground application equipment. For this reason, the user accepts all liability for the level and duration of control of mites when ABBA Ultra is aerially applied. Do not apply ABBA Ultra by aerial application equipment in New York State.

Repeat application as necessary to maintain control (see **Use Restrictions**).

ABBA Ultra can 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, use a nonionic surfactant. Do not use binder or sticker-type surfactants.

Pests	fl oz ABBA Ultra/A
Broad mite Colorado potato beetle <i>Liriomyza</i> leafminers Spider mites Thrips palmi Tomato psyllid Tomato Russet mite	4.0 – 8.0
Tomato pinworm	8.0

Use Restrictions — Fruiting Vegetables Crop Group (Except Cucurbits)

- Do not apply within 7 days of harvest.
- For resistance management, do not use on fruiting vegetables grown for transplanting.
- Wait at least 7 days before repeating application but do not make more than 2 sequential applications nor exceed 24 fl oz/A (0.056 lb ai/A) in a growing season.

GRAPES

For controlling two-spotted spider mites, Pacific spider mites, Willamette spider mites, Western grapeleaf skeletonizers, and for contact knock-down of Variegated leafhopper and Western grape leafhoppers.

Spider mites: Apply with a non-ionic surfactant when mites initially appear, but before the number of motiles exceeds 5 per leaf. When low to moderate infestations are present, use 4 fl oz/acre; for severe infestations, use 8 fl oz/acre.

Western grapeleaf skeletonizer: Apply ABBA Ultra with a non-ionic surfactant when the larvae are initially seen. For best results, apply ABBA Ultra shortly after eggs hatch. When low to moderate infestations are present, use 4 fl oz/acre; for severe infestations, use 8 fl oz/acre.

Western grape leafhoppers and variegated leafhoppers: For contact knock-down control of these pests, apply ABBA Ultra with a non-ionic surfactant when pest first appears. When low to moderate infestations are present, use 4 fl oz/acre; for severe infestations, use 8 fl oz/acre.

Use conventional ground sprayers only with enough water to provide thorough coverage. For good pest control, thorough coverage is essential. To improve the wetting of foliage and to spread out spray deposits, always use ABBA Ultra in combination with a non-ionic surfactant. To maximize coverage, ABBA Ultra must be applied to both sides of each row (i.e., do not use alternate row treatments).

It is not possible to test all grape varieties under the multitude of biotic and abiotic conditions that can cause phytotoxicity. Therefore, carefully follow the Directions for Use and Precautions sections of non-ionic surfactant labels and/or official spray guides when using ABBA Ultra with a non-ionic surfactant.

Pests	fl oz ABBA Ultra/A
Two-spotted spider mite Pacific spider mite Willamette spider mite Western grapeleaf skeletonizer Western grape leafhopper* Variegated leafhopper*	4.0 – 8.0 <i>Plus a nonionic surfactant**</i>

* Note: ABBA Ultra only provides contact knock-down control of this pest.

**Note: ABBA Ultra must be applied with a non-ionic surfactant to spread out spray deposits and improve wetting of foliage.

Use Restrictions — Grapes

- Do not apply in less than 50 gallons of water per acre except when using an electrostatic sprayer; do not use less than 5 gallons of water per acre with this type of spray equipment.
- Do not reapply within 21 days of first application.
- Do not use more than 8 fl oz of ABBA Ultra per acre (0.019 lb ai/A) per application or 16 fl oz per acre (0.038 lb ai/A) in a growing season.
- Do not exceed two applications per growing season nor apply within 28 days of harvest.

- Do not allow livestock to graze in treated vineyards.
- Do not apply aerially.

HERB CROP SUBGROUP (EXCEPT CHIVES) (CROP SUBGROUP 19A)

Some of the crops in this group are Angelica; Balm; Basil; Borage; Burnet; Chamomile; Catnip; Chervil (dried); Clary; Coriander (leaf); Cilantro (leaf); Costmary; Culantro (leaf); Curry (leaf); Dill weed; Horehound; Hyssop; Lavender; Lemongrass; Lovage (leaf); Marigold; Marjoram (*Origanum* spp.); Nasturtium; Parsley (dried); Pennyroyal; Rosemary; Rue; Sage; Savory (summer and winter); Sweet bay; Tansy; Tarragon; Thyme; Wintergreen; Woodruff; and Wormwood.

For controlling *Liriomyza* leafminers.

Apply using conventional ground sprayers only in a minimum of 30 gallons of water per acre. Apply as a foliar spray providing thorough coverage of the upper and lower leaf surfaces. ABBA Ultra can be used without a wetting agent. When it is necessary to smooth out spray deposits or improve the wetting of foliage, a nonionic surfactant can be used. To avoid crop injury, carefully follow the **DIRECTIONS FOR USE** and **PRECAUTIONS** sections of non-ionic surfactant labels and/or official spray guides when using ABBA Ultra with a non-ionic surfactant.

Use the lower rate for low to moderate infestations and the higher rate for severe infestations. Apply when adult flies are first observed and repeat application as necessary to maintain control (see **User Restrictions**).

Pest	fl oz ABBA Ultra/A
<i>Liriomyza</i> leafminers	4.0 – 8.0

Use Restrictions — Herb Crop Subgroup (Except Chives)

- Do not apply within 14 days of harvest.
- Do not reapply within 7 days of first application.
- Do not make more than 2 applications per single cutting (harvest) nor make more than 24 fl oz/A (0.056 lb ai/A) per cropping season (6 applications at 4 fl oz/A or 3 applications at 8 fl oz/A).
- Do not apply aerially.

HOPS (Not registered for use in California)

For controlling two-spotted spider mites.

Apply ABBA Ultra when populations of two-spotted spider mites reach treatment thresholds. When hop vines are 6 - 8 feet tall, use 4 – 8 fl oz ABBA Ultra in at least 40 gallons of water using conventional ground equipment only. When hop vines exceed 8 feet in height, use 8 fl oz ABBA Ultra in at least 100 gallons of water. Do not retreat with an abamectin product within 21 days of the initial application and then only after treatment with an alternative miticide with a different mode of action.

Mix with water as specified then apply with ground equipment as a foliar spray to obtain good upper and lower leaf coverage. Spray volume can vary with plant size and density of foliage. To control two-spotted mites, thorough coverage of foliage is essential. When using concentrate sprays, the volume of water is reduced, but the amount per acre of ABBA Ultra remains the same as that of dilute sprays. ABBA Ultra can be used without a wetting agent; however, use a nonionic surfactant to improve wetting of foliage and to spread out spray deposits.

See **SPRAY DRIFT** section of this label for spray drift precautions.

Pests	fl oz ABBA Ultra/A
Two-spotted spider mites	4.0 – 8.0

Use Restrictions — Hops

- Do not exceed 2 applications or 16 fl oz/acre (0.038 lb ai/A) per growing season nor apply within 28 days of harvest.
- Do not allow livestock to graze in treated hop yards.
- Do not apply aerially.

LEAFY VEGETABLE CROP GROUP (EXCEPT BRASSICA VEGETABLES) (CROP GROUP 4)

Some of the crops in this group are Amaranth (leafy Amaranth, Chinese spinach, tampala) (*Amaranthus* spp.); Arugula (Roquette) (*Eruca sativa*); Cardoon (*Cynara cardunculus*); Celery (*Apium graveolens* var. *dulce*); Celery, Chinese (*Apium graveolens* var. *secalinum*); Celtuce (*Lactuca sativa* var. *angustana*); Chervil (*Anthriscus cerefolium*); Chrysanthemum, edible-leaved (*Chrysanthemum coronarium* var. *coronarium*); Chrysanthemum, garland (*Chrysanthemum coronarium* var. *spatiosum*); Corn salad (*Valerianella locusta*); Cress, garden (*Lepidium*

sativum); Cress, upland (yellow rocket, winter cress) (*Barbarea vulgaris*); Dandelion (*Taraxacum officinale*); Dock (sorrel) (*Rumex* spp.); Endive (escarole) (*Cichorium endivia*); Fennel, Florence (finocchio) (*Foeniculum vulgare* Azoricum Group); Lettuce, head and leaf (*Lactuca sativa*); Orach (*Atriplex hortensis*); Parsley (*Petroselinum crispum*); Purslane, garden (*Portulaca oleracea*); Purslane, winter (*Montia perfoliata*); Radicchio (red chicory) (*Cichorium intybus*); Rhubarb (*Rheum rhabarbarum*); Spinach (*Spinacia oleracea*); Spinach, New Zealand (*Tetragonia tetragonioides. T. expansa*); Spinach, vine (Malabar spinach, Indian spinach) (*Basella alba*); and Swiss chard (*Beta vulgaris* var. *cicla*).

For controlling carmine spider mite, *Liriomyza* leafminers, and two-spotted spider mite.

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

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

Apply as a foliar spray in at least 20 gallons of water per acre by ground or in at least 5 gallons per acre by air. Under conditions such as high pest populations, dense foliage, high temperatures, or other such adverse application situations, use a greater water volume to ensure adequate coverage. Thorough coverage of the crop canopy is essential. With aerial application, spray coverage and the resulting control of mites is less than when using ground application equipment. For this reason, the user accepts all liability for the level and duration of control of mites when ABBA Ultra is aerially applied. Use the lower rates for low to moderate infestations and the higher rate for severe infestations. Do not apply ABBA Ultra by aerial application equipment in New York State.

ABBA Ultra can 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, use a nonionic surfactant. Do not use binder or sticker-type surfactants.

Pests	fl oz ABBA Ultra/A
Carmine spider mite <i>Liriomyza</i> leafminers Twospotted spider mite	4.0 – 8.0 plus a nonionic surfactant

Use Restrictions — Leafy Vegetable Crop Group (Except Brassica Vegetables)

- Do not apply within 7 days of harvest.
- For resistance management, do not use on leafy vegetables grown for transplanting nor make more than 2 sequential applications.
- Do not reapply within 7 days of first application.
- Do not apply more than 24 fl oz/A (0.056 lb ai/A) per growing season.

MINT (PEPPERMINT AND SPEARMINT)

For controlling two-spotted spider mite

Apply as a foliar spray in at least 20 gallons of water per acre by ground or in at least 5 gallons per acre by air. Under conditions such as high pest populations, dense foliage, high temperatures, or other such adverse application situations, use a greater water volume to ensure adequate coverage. Thorough coverage of the crop canopy is essential. With aerial application, spray coverage and the resulting control of mites is less than when using ground application equipment. For this reason, the user accepts all liability for the level and duration of control of mites when ABBA Ultra is aerially applied. Do not apply ABBA Ultra by aerial application equipment in New York State.

Use the lower rates for low to moderate infestations and the higher rate for severe infestations. For optimum control, a nonionic or organosilicone-based surfactant can be used at rates specified on the surfactant label. To avoid crop injury, carefully follow the Directions for Use and Precautions sections of the surfactant labels and/or official spray guides when using in the spray mixture.

Pest	fl oz ABBA Ultra/A
Twospotted spider mite	4.0 – 6.0

Use Restrictions — Mint (Peppermint and Spearmint)

- Do not apply within 28 days of harvest.
- Do not apply more than 6 fl oz/A (0.014 lb ai/A) per application nor more than 18 fl oz/A (0.042 lb ai/A) per crop season.
- Do not reapply within 7 days of first application.
- Do not make more than 2 sequential applications and do not apply more than 3 applications per season.
- Do not allow livestock to graze or feed treated foliage to livestock.

PEARS (including oriental pear trees)

For controlling European red mite, pear rust mite, yellow mite, two-spotted spider mite, McDaniel spider mite, and pear psyllid.

Apply ABBA Ultra using conventional dilute or concentrate ground sprayers only calibrated to deliver enough water for thorough coverage but not less than 40 gallons of water per acre. Spray volume will vary with the size and number of trees per acre and foliage density. Assure thorough coverage to attain effective spider mite and insect control. Always apply ABBA Ultra combined with a Horticultural Spray Oil (not dormant oil) as directed.

See **SPRAY DRIFT** section of this label for spray drift precautions.

Apply ABBA Ultra using at least 1 qt Horticultural Spray Oil*/100 gals (i.e., 0.25% of finished spray) in dilute sprays or with at least 1.0 gal of Horticultural Spray Oil* per acre in concentrate sprays.

Applying ABBA Ultra plus horticultural spray oil less than 14 days before or after applying Captan can result in phytotoxicity and crop loss.

Pests	Rate of ABBA Ultra & Horticultural Spray Oil *	
	Dilute Sprays ¹	Concentrate Sprays ²
Two-spotted spider mite McDaniel spider mite European red mite Pear rust mite Yellow mite Pear psylla	1.25 – 2.5 fl oz ABBA Ultra/100 gals water <i>plus</i> 1 qt. Horticultural Spray Oil*/100 gals (i.e., 0.25% of finished spray)	5 – 10 fl oz ABBA Ultra/A <i>plus</i> at least 1.0 gal Horticultural Spray Oil*/A

* Not a dormant oil.

¹ Rates per 100 gals are based on a volume of 400 gals/acre dilute spray.

² To determine the ABBA Ultra rate per acre for concentrate sprays, it is necessary to first determine the amount needed for a full cover dilute spray. Use the same amount of product per acre in concentrate sprays as required for dilute sprays to the same grove/orchard. The result can be less than 5 fl oz/acre when used on smaller trees.

Use Restrictions — Pears (including oriental pear trees)

- Do not reapply within 21 days of first application nor apply within 28 days of harvest.
- Do not use more than 10 fl oz of ABBA Ultra per acre (0.023 lb ai/A) per application. Do not exceed 20 fl oz/acre (0.046 lb ai/A) in a single growing season.
- Do not exceed 2 applications per growing season.
- Do not allow livestock to graze in treated orchards.
- Do not apply aerially.

STONE FRUIT CROP GROUP (CROP GROUP 12)

Crops in this group are: apricot, cherry (sweet and tart); nectarine; peach; plum; plum (chicasaw, damson, and Japanese); plumcot; and prune (fresh).

For controlling European spider mite, Pacific spider mite, and two-spotted spider mite.

Use conventional dilute or concentrate ground sprayers only with enough water to produce thorough coverage, but do not use less than 40 gallons of water per acre. Spray volume will vary with the size and number of trees per acre and foliage density. Assure thorough coverage to attain spider mite control.

See **SPRAY DRIFT** section of this label for spray drift precautions.

Apply when mites first appear. A second application can be made, if needed, to maintain control (see **Use Restrictions**).

Apply ABBA Ultra 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). To avoid crop injury, carefully follow the **DIRECTIONS FOR USE** and **PRECAUTIONS** sections of the surfactant or oil label(s) and/or official spray guides when using in the spray mixture.

Pest	For dilute sprays ¹ fl oz/100 gals	For Concentrate sprays ² fl/oz/A
European red mite Pacific spider mite Twospotted spider mite	1.25 – 2.5 <i>plus</i> 0.25% or 1 gal/A horticultural spray oil (not a dormant oil) or nonionic surfactant at the labeled rate	5 – 10 <i>plus</i> horticultural spray oil (not a dormant oil) at a minimum of 1 gal/A

¹ The rate of ABBA Ultra per 100 gals is based on volume of 400 gals/A dilute spray.

² 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 can result in use of less than 5 fl oz/A on small trees.

Use Restrictions — Stone Fruit Crop Group

- Do not reapply within 21 days of first application nor within 21 days of harvest.
- Do not apply more than 10 fl oz/A (0.023 lb ai/A) per application nor more than 20 fl oz/A (0.046 lb ai/A) in a growing season.
- Do not make more than 2 applications per growing season.
- Do not allow livestock to graze in treated orchards.
- Do not apply aerially.

STRAWBERRIES

For controlling two-spotted spider mites and strawberry spider mite.

Apply 8 fl oz per acre of ABBA Ultra when mites are initially seen. Make 2 applications at intervals of 7 - 10 days and repeat this sequence as needed to maintain control (see **Use Restrictions**). Wait at least 21 days after the second application before repeating application. To ensure maximum coverage of tops and undersides of foliage, adjust nozzle placement and spray volume. ABBA Ultra can be used without a wetting agent; however, use a nonionic surfactant to improve wetting of foliage and to spread out spray deposits.

Pests	Fl Oz ABBA Ultra/A
Two-spotted spider mite Strawberry spider mite	8.0

Use Restrictions — Strawberries

- Do not apply in less than 50 gallons of water per acre with conventional ground application equipment only except when using an electrostatic sprayer; do not use less than 10 gallons of water per acre with this type of spray equipment.
- Do not use more than 8 fl oz of ABBA Ultra per acre (0.019 lb ai/A) per application. Do not exceed 32 fl oz/acre (0.075 lb ai/A) in a single growing season.
- Do not apply within 3 days of harvest.
- For resistance management, ABBA Ultra must not be used in strawberry nurseries.
- Do not apply aerially.

TREE NUTS CROP GROUP (CROP GROUP 14) AND PISTACHIO

Crops in this group are: almond, beech nut, Brazil nut, butternut, cashew, chestnut, chinquapin, filbert (hazelnut), hickory nut, macadamia nut, pecan, and walnuts (black and English).

For controlling strawberry spider mites, Pacific spider mites, two-spotted spider mites, and European red mites. (Ground application only.)

Apply ABBA Ultra when mites initially appear. To maintain control, make a second application of ABBA Ultra after at least 21 days, if needed. Spray deposits on newer leaves (compared to older leaves) provide greater residual spider mite control.

Use conventional dilute or concentrate ground sprayers with enough water to provide thorough coverage. Volume of spray will vary with the size and number of trees per acre and foliage density. Assure thorough coverage to attain spider mite control. Use ABBA Ultra with a Horticultural Spray Oil (not a dormant oil) that is approved for use on Tree Nuts Crop Group and Pistachio. If applications are made without Horticultural Spray Oil, reduced efficacy and/or reduced residual control could result.

See **SPRAY DRIFT** section of this label for spray drift precautions.

160917

Pests	Rate of ABBA Ultra & Horticultural Spray Oil*	
	Dilute Sprays ¹	Concentrate Sprays ²
Two-spotted spider mite Pacific spider mite Strawberry spider mite European red mite	1.25 – 2.5 fl oz ABBA Ultra/100 gals water plus 1 qt. Horticultural Spray Oil*/100 gals (i.e., 0.25% of finished spray)	5 – 10 fl oz ABBA Ultra/A plus at least 1 gal Horticultural Spray Oil*/A

* Not a dormant oil

¹ Rates per 100 gals dilute spray are based on a 400 gal/acre spray volume.

² To determine the ABBA Ultra rate per acre for concentrate sprays, it is necessary to first determine the amount needed for a full cover dilute spray. Use the same amount of product per acre in concentrate sprays as required for dilute sprays to the same grove/orchard. The result can be less than 5 fl oz/acre when used on smaller trees.

Use Restrictions — Tree Nuts Crop Group and Pistachio

- Do not apply aerially.
- Do not apply in less than 40 gallons of water per acre.
- Do not retreat within 21 days of the first application.
- Do not use more than 10 fl oz of ABBA Ultra per acre (0.023 lb ai/A) per application or 20 fl oz/A (0.046 lb ai/A) in a growing season.
- Do not exceed 2 applications per growing season.
- Do not apply within 21 days of harvest.
- Do not allow livestock to graze treated groves or orchards.

TUBEROUS AND CORM VEGETABLES CROP SUBGROUP (CROP SUBGROUP 1C)

Crops in this subgroup are: arracha; arrowroot; artichoke, Chinese; artichoke, Jerusalem; canna, edible; cassava (bitter and sweet); chayote (root); chufa; dasheen; ginger; leren; potato; sweet potato; tanier; turmeric; yam bean; and yam, true.

For controlling Colorado potato beetles, *Liriomyza* leafminers, Potato psyllid and Spider mites.

Colorado potato beetles: Apply ABBA Ultra when 50% of egg masses have hatched and larvae are observed. If two applications are planned, they must be restricted to a single Colorado potato beetle generation per season, and intervals of at least 7 days must be observed. For low to moderate infestations, use 4 fl oz per acre; for severe infestations, use 8 fl oz per acre. Do not exceed 2 applications per season.

***Liriomyza* leafminers:** Make initial application when adult flies are first seen. Repeat applications as necessary to maintain control (see **Use Restrictions**) as long as there is a minimum of 7-day intervals between applications. For low to moderate infestations, use 4 fl. oz per acre; for severe infestations, use 8 fl oz per acre.

Spider mites: Apply the first application when mites first appear. Repeat applications as necessary to maintain control (see **Use Restrictions**) as long as there is a minimum of 7-day intervals between applications. For low to moderate infestations, use 4 fl. oz per acre; for severe infestations, use 8 fl oz per acre.

Apply as a foliar spray in at least 20 gallons of water per acre by ground or in at least 5 gallons per acre by air. Under conditions such as high pest populations, dense or rank foliage, high temperatures or other such adverse application situations, use a greater water volume to ensure adequate coverage. For best results, ensure that good upper and lower leaf coverage is attained. To optimize pest control, add an organosilicone-based surfactant or non-ionic surfactant at the manufacturer's specified rate. Effectiveness can be reduced if ABBA Ultra is used with a binder or sticker type product (such as Bravo Weather Stik®). Do not apply ABBA Ultra by aerial application equipment in New York State.

Pests	fl oz ABBA Ultra/A
Colorado potato beetles Spider mites <i>Liriomyza</i> leafminers Potato psyllid	4 – 8

Use Restrictions — Tuberos and Corm Vegetables Crop Subgroup

- Do not use more than 16 fl oz/acre (0.038 lb ai/A) per season to control spider mites or Colorado potato beetles or more than 24 fl oz/acre (0.056 lb ai/A) per season to control leafminers.
- Do not exceed 2 sequential applications and wait at least 7 days between applications.
- Do not apply within 14 days of harvest.
- Do not allow livestock to graze or feed treated foliage.

STORAGE AND DISPOSAL

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

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

PESTICIDE DISPOSAL: Pesticide spray mixture or rinsate that cannot be used must 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 HANDLING:

Nonrefillable Container (five gallons or less): Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. 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.

Nonrefillable Container (greater than five gallons): Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Refillable Container (greater than 55 gallons): Refillable container. Refill this container with abamectin only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. For final disposal, offer for recycling or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes.

LIMITATION OF WARRANTY AND LIABILITY

Read the entire directions for use, conditions of warranties and limitations of liability before using this product. If terms are not acceptable, return the unopened product container at once.

By using this product, user or buyer accepts the following **CONDITIONS, DISCLAIMER OF WARRANTIES and LIMITATIONS OF LIABILITY.**

CONDITIONS: The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Makhteshim Agan of North America, Inc. All such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: To the extent consistent with applicable law, Makhteshim Agan of North America, Inc. makes no other warranties, express or implied, of merchantability or of fitness for a particular purpose or otherwise, that extend beyond the statements made on this label. No agent of Makhteshim Agan of North America, Inc. is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. To the extent consistent with applicable law, Makhteshim Agan of North America, Inc. disclaims any liability whatsoever for special, incidental or consequential damages resulting from the use or handling of this product.

LIMITATIONS OF LIABILITY: To the extent consistent with applicable law, the exclusive remedy of the user or buyer for any and all losses, injuries or damages resulting from the use or handling of this product, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the purchase price paid or at Makhteshim Agan of North America, Inc.'s election, the replacement of product.

ABBA is a trademark of Makhteshim Agan of North America, Inc.

Avri-Mek, Bravo, and Weather Stik are trademarks of Syngenta Group Company.