

**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®

GROUP 6 INSECTICIDE

## MITICIDE/INSECTICIDE

ACTIVE INGREDIENT:	% BY WT.
Abamectin .....	3.74%
OTHER INGREDIENTS: .....	96.26%
TOTAL: .....	100.00%

Contains 0.3 lb abamectin per gallon.

EPA Reg. No. 66222-226 EPA Est. No. 37429-GA-001<sup>ST</sup>  
37429-GA-002<sup>BO</sup>

Letter(s) in lot number correspond(s) to superscript in 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 en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

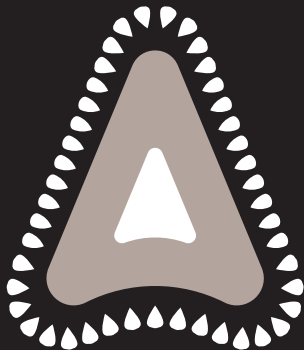
**VOXIEN<sup>®</sup>**  
FORMULATIONS

ABBA Ultra is an emulsifiable concentrate (EC) miticide/insecticide formulated as part of the Voxien family of products.

See First Aid, precautionary statements and directions for use inside booklet.

**How can we help? 1-866-406-6262**

Net Contents  
**1 gallon**



**MITICIDE/  
INSECTICIDE**

# ADAMA

## FIRST AID

<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"><li>• Call a poison control center or doctor immediately for treatment advice.</li><li>• Do not give any liquid to the person.</li><li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
<b>IF IN EYES:</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15–20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor immediately for treatment advice.</li></ul>
<b>IF ON SKIN OR CLOTHING:</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of soap and water for 15–20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>IF INHALED:</b>	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>

**Note to physician:** Early signs of intoxication include mydriasis (dilated pupils), ataxia (unsteadiness), and muscle tremors. Toxicity follows accidental ingestion of the ABBA® Ultra 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.

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.

## 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.

## ENGINEERING CONTROLS

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

## USER SAFETY RECOMMENDATIONS

### Users should:

- Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into 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 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.

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having a medium potential for reaching both surface water and aquatic sediment via runoff for several weeks to months after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of abamectin from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

#### **PHYSICAL OR CHEMICAL HAZARDS**

Do not use or store near heat or open flame. This product is reactive toward and should be stored away from strong oxidants.

**Attention: This product contains chemicals known to the State of California to cause birth defects or other reproductive harm.**

## **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  $\geq$  14 mils
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

### RESISTANCE MANAGEMENT

ABBA Ultra® contains a Group 6 insecticide. Insect/mite biotypes with acquired resistance to Group 6 (Chloride channel activators) may eventually dominate the insect/mite population if Group 6 insecticides/acaricides are used repeatedly in the same field or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by ABBA Ultra or other Group 6 Insecticides.

To delay insecticide resistance consider:

- Avoiding the consecutive use of ABBA Ultra or other Group 6 insecticides/acaricides that have a similar target site of action, on the same insect/mite species.
- Using tank-mixtures or premixes with insecticides/acaricides from a different target site of action Group as long as the involved products are all registered for the same use and have different sites of action.
- Basing insecticide/acaricide use on a comprehensive IPM program.
- Monitoring treated insect/mite populations for loss of field efficacy.
- Contacting your local extension specialist, certified crop advisors, and/or manufacturer for insecticide/acaricide resistance management and/or IPM recommendations for the specific site and resistant pest problems.

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

**PRODUCT INFORMATION**

ABBA Ultra is a member of the Voxien family of products. 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 adjuvants. Performance may be enhanced by mixing ABBA Ultra with a non-phytotoxic non-ionic adjuvant type wetting, spreading and/or penetrating adjuvant or horticultural spray oil (not a dormant oil) unless prohibited by specific crop Directions for Use statements or Crop Use Instructions. In addition to the container label instructions for the use of a horticultural spray oil (not a dormant oil), ABBA Ultra may also be used with adjuvants approved for use on crops listed that have spreading and penetrating properties to maximize leaf uptake. If applications are made without horticultural spray oil or a spray adjuvant having spreading and penetrating properties to maximize leaf uptake, reduced efficiency and/or reduced residual control could result. See Directions for Use for specific adjuvant recommendations. 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, the use of an adjuvant that meets the standards of the Chemical Producers and Distributors Association (CPDA) adjuvant certification program is recommended.

**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 Restrictions 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 restrictions 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 Management**

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 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 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.

## 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 (not a dormant 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 that has been approved for use on apples. If Horticultural Spray Oil is not used, reduced efficacy and/or reduced residual control could result.

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 **RESTRICTIONS** 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 <sup>1</sup>	Concentrate Sprays <sup>2</sup>
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		
<sup>1</sup> Rates per 100 gals dilute spray are based on a 400 gals/acre spray volume.		
<sup>2</sup> 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 apply more than 10 fl oz/A (0.023 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per application.
- Do not apply more than 20 fl oz/A (0.046 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not exceed 2 applications of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not apply within 28 days of harvest.
- Do not allow livestock to graze in treated orchards.

### 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 spray oil*	Low	1-2
		Moderate	3-4
		Severe	More than 5

\*Not a dormant oil

**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 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 apply less than 5 fl oz of ABBA Ultra/A (0.012 lb ai/A) per application.
- Do not apply more than 10 fl oz/A of ABBA Ultra (0.023 lb ai/A) or any other foliarly applied product containing abamectin per application.
- Do not apply within 14 days of harvest.
- Do not retreat within 30 days of the first application.
- Do not make more than 2 applications of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not apply more than 20 fl oz/A (0.046 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping 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. Inadequate foliage coverage could result in reduced control. Best results are obtained when ABBA Ultra is used in combination with a non-ionic surfactant.

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

### **Use Restrictions – Celeriac**

- Do not apply aerially.
- Do not apply in less than 20 gallons of water per acre.
- Do not apply at intervals of less than 7 days.
- Do not apply more than 8 fl oz/A (0.019 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per application.
- Do not exceed 24 fl oz/A (0.056 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin after transplanting.
- Do not apply within 7 days of harvest.
- For resistance management, do not exceed 2 applications sequentially of ABBA Ultra or any other foliarly applied product containing abamectin.

### **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.

Unless specified differently below, apply ABBA Ultra with at least 1.6 pt Horticultural Spray Oil (not a 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 <sup>1</sup>	Concentrate Sprays <sup>2</sup>
	fl oz ABBA Ultra/100 gals	fl oz ABBA Ultra/A
Citrus rust mite	0.25 – 1.0	2.5-10 <sup>3</sup>
Broad mite	0.5 – 1.0	5-10 <sup>3</sup>
Two-spotted spider mite	0.5 – 1.0	5-10
Citrus bud mite	0.5 – 1.0	5-10 <sup>4</sup>
Asian Citrus Psyllid	---	5-10 <sup>3</sup>
Citrus leafminer	---	2.5-10 <sup>3</sup>
Citrus thrips	---	5-10 <sup>5</sup>
	<i>Plus</i> at least 1.6 pt Horticultural Spray Oil*/100 gals (i.e., 0.2% of finished spray)	<i>Plus</i> at least 1 gal Horticultural Spray Oil*/A
*Not a dormant oil		
<sup>1</sup> The rate of ABBA Ultra per 100 gals is based on a volume of 1,000 gals/A dilute spray.		
<sup>2</sup> 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.		
<sup>3</sup> For ground application, use 150 – 300 gals/A of spray mix with a minimum of 3 gals/A of horticultural spray oil and apply at a ground speed of 1 to 1.5 MPH.		
<sup>4</sup> Use at least 500 gals of spray mix per acre with at least 0.5% Horticultural Spray Oil.		
<sup>5</sup> 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 foliarly applied product containing abamectin within 30 days of the last treatment.
- Do not apply more than 20 fl oz/A (0.046 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not make more than 3 applications of ABBA Ultra or any other foliarly applied product containing abamectin per cropping 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**).

ABBA Ultra can be used without a wetting agent. Improved mite control can be achieved by the addition of a spreading or penetrating surfactant. Use a nonionic surfactant to improve the wetting of foliage and to smooth out spray deposits. Do not use binder or sticker-type surfactants.

For early-season applications, apply 2 – 3 fl oz of ABBA Ultra /A when cotton is no more than 10 inches high. Do not use less than 2 fl oz of ABBA Ultra /A. **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 /A 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 applications of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not apply more than 8 fl oz/A (0.019 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per application.
- Do not apply more than 16 fl oz/A (0.038 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping 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, casa-ba,, 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/A ; for severe infestations, use 8 fl oz/A.

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. For best control, apply ABBA Ultra with ground application equipment. With aerial application, the resulting control of leafminers and spider mites could be less than with ground application. 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.

ABBA Ultra can be used without a wetting agent. Improved insect and mite control can be achieved by the addition of a spreading or penetrating surfactant. Use a nonionic surfactant to improve the wetting of foliage and to smooth out spray deposits. Do not use binder or sticker-type surfactants.

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

#### **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 apply more than 8 fl oz/A (0.019 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per application.
- Do not apply more than 24 fl oz/A (0.056 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not apply within 7 days of harvest.
- For resistance management, do not exceed 2 sequential applications of ABBA Ultra or any other foliarly applied product containing abamectin.
- Do not apply ABBA Ultra by aerial application equipment in New York State.



## DRY BEANS

*Cicer arietinum* - Chickpea, Garbanzo bean

*Lupinus* spp. - Sweet lupine, White sweet lupine, White lupine and Grain lupine

*Phaseolus* spp. - Kidney bean, Lima bean, Mung bean, Navy bean, Pinto bean, Snap bean and Waxbean

*Vicia faba* - Broad bean and Fava bean

*Vigna* spp. - Adzuki bean, Asparagus bean, Blackeyed pea, Catjang, Chinese longbean, Cowpea\*, Crowder pea, Moth bean, Mung bean, Rice bean, Southern pea, Urd bean and Yardlong bean

\* For use on cowpeas grown for dry seed only. Do not allow livestock to graze cowpea forage and do not harvest cowpea forage or hay for use as livestock feed.

### For controlling *Liriomyza* 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 4.0 fl oz/A; for severe infestations, use 8.0 fl oz/A.

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. For best control, apply ABBA Ultra with ground application equipment. With aerial application, the resulting control of leafminers and spider mites could be less than with ground application. 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.

ABBA Ultra can be used without a wetting agent. Improved insect and mite control can be achieved by the addition of a spreading or penetrating surfactant. Use a nonionic surfactant to improve the wetting of foliage and to smooth out spray deposits. Do not use binder or stick-er-type surfactants.

Pests	fl oz ABBA Ultra/A
Spider mites <i>Liriomyza</i> leafminers	4.0 – 8.0

### Use Restrictions – Dry Beans

- 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 apply more than 8.0 fl oz/A (0.019 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per application.

- Do not apply more than 24.0 fl oz/A (0.056 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not apply within 7 days of harvest.
- For resistance management, do not exceed 2 sequential applications of ABBA Ultra or any other foliarly applied product containing abamectin.
- Do not apply ABBA Ultra by aerial application equipment in New York State.

### **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. For best control, apply ABBA Ultra with ground application equipment. With aerial application, the resulting control of leafminers and spider mites could be less than with ground application. For this reason, the user accepts all liability for the level and duration of control of mites when ABBA Ultra is aerially applied. 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.

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

ABBA Ultra can be used without a wetting agent. Improved insect and mite control can be achieved by the addition of a spreading or penetrating surfactant. Use a nonionic surfactant to improve the wetting of foliage and to smooth out spray deposits. 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.
- Do not apply more than 8 fl oz/A (0.019 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per application.
- Do not make more than 2 sequential applications of ABBA Ultra or any other foliarly applied product containing abamectin.
- Do not apply more than 24 fl oz/A (0.056 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not apply ABBA Ultra by aerial application equipment in New York State.

### 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. For low to moderate infestations, use 4 fl oz/A; for severe infestations, use 8 fl oz/A.

**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. For low to moderate infestations, use 4 fl oz/A; for severe infestations, use 8 fl oz/A.

**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. For low to moderate infestations, use 4 fl oz/A; for severe infestations, use 8 fl oz/A.

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. Do not use alternate row treatments.

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>
<p>* ABBA Ultra only provides contact knock-down control of this pest.  **ABBA Ultra must be applied with a non-ionic surfactant to spread out spray deposits and improve wetting of foliage.</p>	

### Use Restrictions – Grapes

- Do not apply aerially.
- 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 apply more than 8 fl oz/A (0.019 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per application.
- Do not apply more than 16 fl oz/A (0.038 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not exceed two applications of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not apply within 28 days of harvest.
- Do not allow livestock to graze in treated vineyards.

### HERB CROP SUBGROUP (CROP SUBGROUP 19A)

Some of the crops in this group are Angelica; Balm; Basil; Borage; Burnet; Chamomile; Catnip; Chervil (dried); Chives; Chives (Chinese); 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 and Spider mites.**

Apply using conventional ground sprayers only in a minimum of 20 gallons of water per acre. Apply as a foliar spray providing thorough coverage of the upper and lower leaf surfaces. 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 **Use Restrictions**).

ABBA Ultra 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 for all crops in the Herb Crop Subgroup except chives. Do not use a surfactant when applying ABBA Ultra to chives.

Pests	fl oz ABBA Ultra/A
<i>Liriomyza</i> leafminers Spider mites	4.0 – 8.0

**Use Restrictions – Herb Crop Subgroup 19A**

- Do not apply aerially.
- Do not apply within 14 days of harvest. For chives, do not apply within 7 days of harvest.
- Do not use a surfactant when applying ABBA Ultra to chives.
- Do not reapply ABBA Ultra or any other foliarly applied product containing abamectin per application at less than 7 day intervals.
- Do not apply more than 8.0 fl oz/A (or 0.019 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per application.
- Do not make more than 2 applications of ABBA Ultra or any other foliarly applied product containing abamectin per single cutting (harvest).
- Do not apply more than 24.0 fl oz/A (0.056 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.

**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.

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 non-ionic surfactant to improve wetting of foliage and to spread out spray deposits.

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

#### Use Restrictions – Hops

- Do not apply aerially.
- Do not exceed 2 applications of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not apply more than 8 fl oz/A (0.019 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per application.
- Do not apply more than 16 fl oz/A (0.038 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not apply within 28 days of harvest.
- Do not allow livestock to graze in treated hop yards.
- 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.

#### 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*); Celtuçe (*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 rhubarbarum*); 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. For best control, apply ABBA Ultra with ground application equipment. With aerial application, the resulting control of leafminers and spider mites could be less than with ground application. For this reason, the user accepts all liability for the level and duration of control of mites when ABBA Ultra is aerially applied. 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. Use the lower rates for low to moderate infestations and the higher rate for severe infestations.

ABBA Ultra can be used without a wetting agent. Improved insect and mite control can be achieved by the addition of a spreading or penetrating surfactant. Use a nonionic surfactant to improve the wetting of foliage and to smooth out spray deposits. Do not use binder or sticker-type surfactants.

<b>Pests</b>	<b>fl oz ABBA Ultra/A</b>
Carmine spider mite <i>Liriomyza</i> leafminers Twospotted spider mite	4.0 – 8.0 <i>plus</i> 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.
- Do not apply more than 8 fl oz/A (0.019 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per application.
- Do not make more than 2 sequential applications of ABBA Ultra or any other foliarly applied product containing abamectin.
- Do not reapply within 7 days of first application.
- Do not apply more than 24 fl oz/A (0.056 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not apply ABBA Ultra by aerial application equipment in New York State.

#### **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.

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 Restrictions sections of the surfactant labels and/or official spray guides when using in the spray mixture.

Pests	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) of ABBA Ultra or any other foliarly applied product containing abamectin per application.
- Do not apply more than 18 fl oz/A (0.042 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not reapply within 7 days of first application.
- Do not make more than 2 sequential applications of ABBA Ultra or any other foliarly applied product containing abamectin.
- Do not apply more than 3 applications of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not allow livestock to graze or feed treated foliage to livestock.
- Do not apply ABBA Ultra by aerial application equipment in New York State.

#### **ONION, BULB (CROP SUBGROUP 3-07A)**

Onion, bulb including daylily bulb; Fritillaria bulb; Garlic bulb; Garlic, great-headed bulb; Garlic, serpeant bulb; Lily bulb; Onion, Chinese bulb; Onion, pearl; Onion, potato bulb; Shallot, bulb; Cultivars, varieties and/or hybrids of these.

#### **For controlling *Liriomyza* leafminers and thrips.**

For leafminers, apply ABBA Ultra when adult leafminer flies are initially seen and repeat applications as needed for control (see **Use Restrictions**). For thrips, apply ABBA Ultra when thrips are at economic threshold and repeat applications when needed to maintain control (see **Use Restrictions**). When low to moderate infestations are present, use 4.0 fl oz/A; for severe infestations, use 8.0 fl oz/A.

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. For best control, apply ABBA Ultra with ground application equipment. With aer-



ial application, the resulting control of leafminers and spider mites could be less than with ground application. 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.

ABBA Ultra can be used without a wetting agent. Improved insect and mite control can be achieved by the addition of a spreading or penetrating surfactant. Use a nonionic surfactant to improve the wetting of foliage and to smooth out spray deposits. Do not use binder or sticker-type surfactants.

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

#### **Use Restrictions – Onion, Bulb (Crop Subgroup 3-07A)**

- 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 apply more than 8.0 fl oz/A (or 0.019 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per application.
- Do not apply more than 24.0 fl oz/A (0.056 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not apply within 30 days of harvest.
- Make 2 consecutive applications of ABBA Ultra, then rotate to a chemistry with a different mode of action. Make at least 2 applications of a chemistry with a different mode of action before making additional ABBA Ultra applications. For resistance management, do not exceed 2 sequential applications of ABBA Ultra or any other foliarly applied product containing abamectin.
- Do not apply ABBA Ultra by aerial application equipment in New York State.

#### **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.

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 <sup>1</sup>	Concentrate Sprays <sup>2</sup>
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

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

<sup>2</sup>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 apply aerially.
- Do not reapply within 21 days of first application.
- Do not apply within 28 days of harvest.
- Do not apply more than 10 fl oz/A (0.023 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per application.
- Do not apply more than 20 fl oz/A (0.046 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not exceed 2 applications per cropping season.
- Do not allow livestock to graze in treated orchards.
- Applying the combination of ABBA Ultra and horticultural spray oil fewer than 14 days before or after applying captan or other sulfur-containing products can result in phytotoxicity and crop loss.

### 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.

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 **RESTRICTIONS** sections of the surfactant or oil label(s) and/or official spray guides when using in the spray mixture.

Pests	For dilute sprays <sup>1</sup> fl oz/100 gals	For Concentrate sprays <sup>2</sup> 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 or nonionic surfactant at the labeled rate	5 – 10 <i>plus</i> horticultural spray oil at a minimum of 1 gal/A

<sup>1</sup>The rate of ABBA Ultra per 100 gals is based on volume of 400 gals/A dilute spray.  
<sup>2</sup>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 apply aerially.
- Do not reapply within 21 days of first application.
- Do not apply within 21 days of harvest.
- Do not apply more than 10 fl oz/A (0.023 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per application.
- Do not apply more than 20 fl oz/A (0.046 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not make more than 2 applications of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not allow livestock to graze in treated orchards.

## STRAWBERRIES

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

Apply 8 fl oz/A 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 aerially.
- 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.
- Wait at least 21 days after the second application before repeating application.
- Do not apply more than 8 fl oz/A (0.019 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per application.
- Do not apply more than 32 fl oz/A (0.075 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not apply within 3 days of harvest.
- For resistance management, do not use ABBA Ultra in strawberry nurseries.

### 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. Apply ABBA Ultra in combination with a

nonionic surfactant that spreads on and/or penetrate the leaf cuticle or apply with a Horticultural Spray Oil (not a dormant oil) that is approved for use on Tree Nuts Crop Group and Pistachio.

Pests	Rate of ABBA Ultra & Horticultural Spray Oil *	
	Dilute Sprays <sup>1</sup>	Concentrate Sprays <sup>2</sup>
Two-spotted spider mite Pacific spider mite Strawberry spider mite European red mite	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		
<sup>1</sup> Rates per 100 gals dilute spray are based on a 400 gal/acre spray volume. <sup>2</sup> 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 apply more than 10 fl oz/A (0.023 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per application.
- Do not apply more than 20 fl oz/A (0.046 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season.
- Do not exceed 2 applications of ABBA Ultra or any other foliarly applied product containing abamectin per cropping 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/A; for severe infestations, use 8 fl oz/A. 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/A; for severe infestations, use 8 fl oz/A.

**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/A; for severe infestations, use 8 fl oz/A.

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. For best control, apply ABBA Ultra with ground application equipment. With aerial application, the resulting control of leafminers and spider mites could be less than with ground application. 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®).

Pests	fl oz ABBA Ultra/A
Colorado potato beetles Spider mites <i>Liriomyza</i> leafminers Potato psyllid	4.0 - 8.0

#### **Use Restrictions – Tuberous and Corm Vegetables Crop Subgroup**

- Do not apply more than 8 fl oz/A (0.019 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per application.
- Do not apply more than 16 fl oz/A (0.038 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season to control spider mites or Colorado potato beetles.
- Do not apply more than 24 fl oz/A (0.056 lb ai/A) of ABBA Ultra or any other foliarly applied product containing abamectin per cropping season to control leafminers.
- Do not exceed 2 sequential applications of ABBA Ultra or any other foliarly applied product containing abamectin.
- 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.
- Do not apply ABBA Ultra by aerial application equipment in New York State.

## STORAGE AND DISPOSAL

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

### PESTICIDE STORAGE:

Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food and feed. Store in original container and out of reach of children, preferably in a locked storage area.

Do not store above 100°F for extended periods of time. Storage below 20°F can result in formation of crystals. If product crystallizes, store at 50°F to 70°F and agitate to redissolve crystals. If container is damaged or spill occurs, use product immediately or dispose of product and damaged container as indicated below.

### PESTICIDE DISPOSAL:

Open dumping is prohibited. Pesticide wastes are toxic. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by 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 CONTAINERS:

**Rigid, Nonrefillable containers small enough to shake (i.e. with capacities equal to less than five gallons).**

Nonrefillable container. Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) 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 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. Then offer for recycling or reconditioning if available, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or a mix tank or collect rinsate at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Once container is rinsed, offer for recycling if available, or puncture and dispose of in a sanitary landfill.

## 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 ADAMA. All such risks shall be assumed by the user or buyer.

**DISCLAIMER OF WARRANTIES:** To the extent consistent with applicable law, ADAMA 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 ADAMA is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. To the extent consistent with applicable law, ADAMA 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 ADAMA's election, the replacement of product.

ABBA Ultra is a registered trademark of an ADAMA Group Company.  
Bravo and Weather Stik are trademarks of Syngenta Group Company.

Manufactured for:  
Makhteshim Agan of North America, Inc.  
d/b/a ADAMA  
3120 Highwoods Blvd., Suite 100  
Raleigh, NC 27604