

72167-43

12/30/2004

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



OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

**12/30/04**

J. Steve Lovell  
Nations Ag II, LLC  
4680 Monticello Avenue 18i-174  
Williamsburg, VA 23188

re: Abamectin 0.15 EC, EPA Reg. # 72167-43  
label changes submitted 10/28/04 (submitted as notification, processed as label amendment)  
accepted with comments

Dear Mr. Lovell,

The label referenced above was submitted as a notification. While minor grammatical changes and the addition of pests would qualify as a notification under PR Notice 98-10 and 40 CFR 152.46, the addition of Directions for Use (5 gallon/A aerial application for certain crops) requires processing as a label amendment.


The revised labeling reference to above, submitted in connection with the registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable provided you incorporate the changes required by the Agency as listed below.

Topic	Action required
Directions for Use Hops	ADD the following to the list of use restrictions:  "- Do not exceed 2 applications per growing season."

Submit two (2) copies of your final printed labeling incorporating the above changes prior to releasing your product for shipment. If the above provisions are 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 your label stamped "accepted with comments" is enclosed for your records. Feel free to contact me if you have any questions.

Sincerely yours,

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

enclosure

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# RESTRICTED USE PESTICIDE

TOXIC TO FISH, MAMMALS, AND AQUATIC ORGANISMS

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

ACCEPTED  
with COMMENTS  
In EPA Letter Dated:

DEC 30 2004

## Abamectin 0.15 EC

MITICIDE/INSECTICIDE

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act,  
as amended, this pesticide  
registered under EPA Reg. No.

72167-43

### ACTIVE INGREDIENT:

Abamectin (CAS No. 65195-56-4 and 65195-55-3):..... 1.9 %

INERT INGREDIENTS:..... 98.1 %

TOTAL: 100.0%

EPA Reg. No. 72167-43

EPA Est. No 37429-GA-02

1 gallon contains 0.15 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.)

See additional Precautionary Statements and Directions For Use inside booklet.

### First Aid

#### If swallowed

- 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

- 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

- 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

- 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.

### NOTE TO PHYSICIAN

- Early signs of intoxication include mydriasis (dilated pupils), ataxia (unsteadiness), and muscle tremors. Toxicity follows accidental ingestion of the *Abamectin 0.15EC* 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 parental 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.

HOT LINE NUMBER  
For 24-Hour Medical Emergency Assistance,  
Call 1-800-308-5391

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS:

**WARNING:** May be fatal if swallowed. Causes substantial but temporary eye injury. Do not get in eyes. Harmful if absorbed through skin or inhaled. Avoid contact with skin or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

### 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:

- Coveralls worn 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
- Chemical-resistant apron when cleaning equipment, mixing, or loading

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

### User Safety Recommendations

**Users should:**

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

**ENVIRONMENTAL HAZARDS**

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

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

**PHYSICAL OR CHEMICAL HAZARDS**

Do not use or store near heat or open flame.

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

**DIRECTIONS FOR USE**

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.**

#### Personal Protective Equipment (PPE)

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

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

When applied to crops in accordance with the Directions for Use, *Abamectin 0.15 EC*, an emulsifiable concentrate, effectively controls mites and other insects specified on this label. Thorough coverage is essential for effective insect and mite control.

*Abamectin 0.15 EC* offers a wide margin of safety when applied to a variety of crops. *Abamectin 0.15 EC* is also compatible with other commonly used pesticides, nutritional sprays, and crop oils. Users of this product should pre-test for physical compatibility and lack of phytotoxic effect when using any proposed mixtures with *Abamectin 0.15 EC*.

#### General Use Restrictions

- Do not apply this product through any type of irrigation system.
- Do not apply *Abamectin 0.15 EC* by aerial application equipment in New York State.

**Spray Drift Precautions When Using *Abamectin 0.15 EC* on Cotton, Celery, Celeriac, Cucurbits, Head Lettuce, Grapes, Potatoes, Peppers, Tomatoes, and Strawberries:**

OBSERVE THE FOLLOWING PRECAUTIONS WHEN SPRAYING IN THE VICINITY OF AQUATIC AREAS SUCH AS LAKES; RESERVOIRS; RIVERS; PERMANENT STREAMS, MARSHES OR NATURAL PONDS; ESTUARIES AND COMMERCIAL FISH FARM PONDS.

- Do not apply this product by air within 150 feet, or by ground within 25 feet, of rivers, lakes, permanent streams, reservoirs, potholes, marshes, natural ponds, commercial fish farm ponds, and estuaries.
- Ensure that aerial and ground application equipment is properly maintained and calibrated with appropriate carriers as specified in the crop-specific directions.
- When applying aerially, mount the spray boom to minimize drift from wing tip vortices. Use the minimum practical boom length and do not exceed 75% of the wingspan or rotor diameter.
- Use the largest droplet size consistent with good pest control. To minimize formation of very small droplets, select the appropriate nozzle, orient nozzles away from the air stream as much as possible, and avoid excessive spray boom pressure. Release spray at the lowest height consistent with flight safety and pest control practices. Avoid applications more than 10 feet above the crop canopy.
- Aerial or ground applications should be made when wind conditions are favorable for on-target product deposition—approximately 3 to 10 mph. If wind velocity exceeds 15 mph, do not apply this product. If wind gusts approach 15 mph, applications should be avoided. Avoid applying *Abamectin 0.15 EC* when wind direction is toward aquatic area(s) to reduce risk of exposure to the aquatic area(s). Allow growth of a vegetative filter strip to safeguard aquatic areas. This can be accomplished by not cultivating within 25 feet of aquatic areas.
- Avoid applying this product during low humidity and/or high temperatures. These conditions increase the evaporation rate of spray droplets and, therefore, increase the likelihood of spray drift to aquatic areas.
- Do not apply by air or by ground during temperature inversions, which are characterized by stable air and temperatures increasing with height above the ground. Inversions are often accompanied by mist or fog in humid areas. Applicators may detect an inversion by producing smoke and observing a smoke layer near the ground.

### **Resistance Management**

To minimize the potential development of pest resistance to abamectin, use of resistance management strategies is imperative, especially when applying *Abamectin 0.15 EC* 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.

**ALMONDS AND WALNUTS:** For controlling strawberry spider mites, Pacific spider mites, two-spotted spider mites, and European red mites. (Ground application only.)

Apply *Abamectin 0.15 EC* when mites initially appear. To maintain control, make a second application of *Abamectin 0.15 EC* 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. *Abamectin 0.15 EC* should be used with a Horticultural Spray Oil (not a dormant oil) that is registered for use on almonds and walnuts. If applications are made without Horticultural Spray Oil, reduced efficacy and/or reduced residual control could result.

Reduce the risk to aquatic environments by maintaining a 25-yard buffer zone from all water bodies containing aquatic life (streams, ponds, lakes, rivers, springs, irrigation canals containing water year-round, swamps, bogs and marshes).

Almonds and Walnuts	Rate of <i>Abamectin 0.15 EC</i> & Horticultural Spray Oil*	
Pests	Dilute Sprays <sup>1</sup>	Concentrate Sprays <sup>2</sup>
Two-spotted spider mite Pacific spider mite Strawberry spider mite European red mite	2.5-5.0 fl. oz. <i>Abamectin 0.15 EC</i> /100 gals. water <i>plus</i> 1 qt. Horticultural Spray Oil*/100 gals. (i.e., 0.25% of finished spray)	10-20 fl. oz. <i>Abamectin 0.15 EC</i> /Ac <i>plus</i> at least 1 gal. Horticultural Spray Oil*/Ac

\*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 *Abamectin 0.15 EC* 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 may be less than 10 fl. oz./acre when used on smaller trees.

#### Use Restrictions-Almonds and Walnuts

- 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 20 fl. oz. of *Abamectin 0.15 EC* per acre per application or 40 fl. oz./Ac 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 orchards.

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

Apply *Abamectin 0.15 EC* 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 *Abamectin 0.15 EC* to the first generation white apple leafhopper. Apply with a horticultural spray oil\* soon after petalfall.

**Spider Mites:** Apply *Abamectin 0.15 EC* 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 petalfall through six weeks after petalfall.

**Tentiform Leafminers:** Apply *Abamectin 0.15 EC* 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 *Abamectin 0.15 EC* 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 registered for use on apples. If Horticultural Spray Oil is not used, reduced efficacy and/or reduced residual control could result.

*Abamectin 0.15 EC* may cause injury to fruit of some apple varieties, when used with Horticultural Spray Oils or when other products are sequentially applied. For example, russetting may occur on Golden Delicious and other light-skinned varieties. Users should carefully follow the Directions For Use and Precautions on the labels of Horticultural Spray Oils or those in official spray guides when using *Abamectin 0.15 EC* in combination with Horticultural Spray Oils.

Apples	Rate of <i>Abamectin 0.15 EC</i> & Horticultural Spray Oil*	
Pests	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	2.5-5.0 fl. oz. <i>Abamectin 0.15 EC</i> /100 gals. water <i>plus</i> 1 qt. Horticultural Spray Oil*/100 gals (i.e., 0.25% of finished spray)	10-20 fl. oz. <i>Abamectin 0.15 EC</i> /Ac <i>plus</i> at least 1 gal. Horticultural Spray Oil*/Ac

\*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 *Abamectin 0.15 EC* 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 10 fl. oz./acre when used on smaller trees.



### Use Restrictions – Apples

- Do not apply aerially.
- Do not apply *Abamectin 0.15 EC* 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 20 fl. oz of *Abamectin 0.15 EC* per acre per application or 40 fl. oz./Ac 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.

### Spray Drift Precautions – Apples

The following precautions apply when spraying in the vicinity of aquatic areas such as reservoirs, permanent streams, lakes, natural ponds, marshes, estuaries, and commercial fish farm ponds:

- Do not apply *Abamectin 0.15 EC* within 110 feet upwind of any aquatic area.
- Do not apply *Abamectin 0.15 EC* when weather conditions favor drift to any aquatic area.
- Do not apply *Abamectin 0.15 EC* when wind speed exceeds 8 mph.
- Do not apply when a temperature inversion occurs.
- On the last three rows upwind of aquatic areas, use nozzles on one side only and direct sprays away from aquatic areas.
- Adjust or turn off top nozzles to avoid spraying over treetops. When applying *Abamectin 0.15 EC* onto the outside row, turn off nozzles on the side away from the grove/orchard being sprayed. When turning at ends of rows and when passing tree gaps within rows, turn off nozzles.

### **CELERIAC (*Apium graveollens*): For controlling two-spotted spider mites.**

Apply *Abamectin 0.15 EC* when mites first appear and repeat as necessary to maintain control.

Use conventional dilute or concentrate sprayers with enough water to provide thorough foliage coverage. Best results are obtained when *Abamectin 0.15 EC* is used in combination with a non-ionic surfactant.

<b>Celeriac</b>	
<b>Pests</b>	<b>Fl. oz. <i>Abamectin 0.15 EC</i>/Ac</b>
Two-spotted spider mites	16.0

### 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 48 fl. oz./Ac after transplanting.
- Do not apply within 7 days of harvest.
- For resistance management, do not exceed 2 applications sequentially.

**CELERY:** For controlling *Liriomyza* leafminers, two-spotted spider mites, and carmine spider mites.

**Spider mites:** Apply *Abamectin 0.15 EC* when mites first appear, then repeat as necessary to maintain control. For low to moderate infestations, use 8 fl. oz per acre; for severe infestations, use 16 fl. oz. per acre.

***Liriomyza* leafminers:** Apply when adult flies are initially observed and repeat as necessary to maintain control. For low to moderate infestations, use 8 fl. oz per acre; for severe infestations, use 16 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. *Abamectin 0.15 EC* can be used without a wetting agent; however, a nonionic surfactant is recommended to improve wetting of foliage and to spread out spray deposits.

<b>Celery</b>	
<b>Pests</b>	<b>Fl. oz. <i>Abamectin 0.15 EC</i>/Ac</b>
<i>Liriomyza</i> leafminers Spider mites	8.0-16.0

#### **Use Restrictions-Celery**

- Do not apply in less than 20 gallons of water per acre by ground or in less than 5 gallons of water per acre by aircraft.
- Do not apply at intervals of less than 7 days.
- Do not exceed 48 fl. oz./Ac after transplanting.
- Do not apply within 7 days of harvest.
- For resistance management, do not exceed 2 applications to celery before transplanting. After transplanting, do not exceed 2 sequential applications.

**CITRUS:** For controlling citrus rust mites, broad mites, citrus red mites, Texas citrus mites, two-spotted spider mites, and citrus bud mites, citrus leafminers, and citrus thrips. (Ground application only.)

**Mites (other than citrus bud mites):** Apply *Abamectin 0.15 EC* when mites initially appear in the spring, summer, and/or fall months.

**Citrus Bud Mites:** Best results can be attained when *Abamectin 0.15 EC* is applied at "bud swell."

**Citrus Leafminers:** *Abamectin 0.15 EC* should be applied to protect new growth during the spring, summer, or fall months.

**Citrus Thrips:** Each application of *Abamectin 0.15 EC* 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 *Abamectin 0.15 EC* using conventional dilute or concentrate ground sprayers with enough water to provide thorough coverage (or outside coverage to control 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 *Abamectin 0.15 EC* 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.

Citrus	Dilute Sprays <sup>1</sup>	Concentrate Sprays <sup>2</sup>
Pests	Fl. oz. <i>Abamectin 0.15 EC</i> /100 gals	Fl. oz. <i>Abamectin 0.15 EC</i> /Ac
Citrus rust mite	0.5-2.0	5-20
Broad mite	1.0-2.0	10-20
Citrus red mite	1.0-2.0	10-20
Texas citrus mite	1.0-2.0/1.0-2.0	10-20
Two-spotted spider mite	1.0-2.0	10-20
Citrus bud mite	--	10-20 <sup>3</sup>
Citrus leafminer	--	10-20 <sup>4</sup>
Citrus thrips	Plus at least 1.6 pt. Horticultural Spray Oil*/100 gals (i.e., 0.2% of finished spray)	10-20 <sup>5</sup> Plus at least 1 gal. Horticultural Spray Oil*/Ac

\*Not a dormant oil

<sup>1</sup>The rate of *Abamectin 0.15 EC* per 100 gals. is based on a volume of 1,000 gals./Ac 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>To obtain best results use at least 500 gals. of spray mix per acre with at least 2 qts. Horticultural Spray Oil\*/100 gals (i.e., 0.5% of finished spray).

<sup>4</sup>For best results use 100-150 gals. of spray mix/Ac applied to achieve outside coverage.

<sup>5</sup>For best results use 100-250 gals. of spray mix/Ac applied to achieve outside coverage.

#### Use Restrictions--Citrus

- Do not apply aerially.
- *Abamectin 0.15 EC* should always be applied with Horticultural Spray Oil (not dormant oil) as directed.
- Do not apply until 30 days have passed since last treatment.

- Do not exceed 3 applications per season or 40 fl. oz./acre in a growing season.
- Do not apply within 7 days of harvest.
- For resistance management, do not apply *Abamectin 0.15 EC* in citrus nurseries.

#### **Spray Drift Precautions -- Citrus**

The following precautions apply when spraying in the vicinity of aquatic areas such as reservoirs, permanent streams, lakes, natural ponds, marshes, estuaries, and commercial fish farm ponds:

- Do not apply within 110 feet upwind of any aquatic area.
- Do not apply *Abamectin 0.15 EC* when current weather conditions favor drift to aquatic areas.
- Do not apply if a temperature inversion is present.
- Do not apply *Abamectin 0.15 EC* when wind speed exceeds 8 mph.
- On the last three rows upwind of aquatic areas, nozzles should be used on one side only with spray directed away from aquatic areas.
- Adjust or turn off top nozzles to avoid spraying over treetops. When applying *Abamectin 0.15 EC* onto the outside row, turn off nozzles on the side away from the grove/orchard being sprayed. When turning at ends of rows and when passing tree gaps within rows, turn off nozzles.

#### **COTTON (West of the Mississippi River only.): For control of two-spotted spider mites, carmine spider mites, Pacific spider mites, and strawberry spider mites.**

For early season control, apply *Abamectin 0.15 EC* when cotton is no more than 10 inches high. Use ground equipment only, dilute with water, and apply at a rate of 4-6 fl. oz. of *Abamectin 0.15 EC* per acre. Do not use less than 4 fl. oz. of *Abamectin 0.15 EC* per acre.

For mid-season or at lay-by control, apply *Abamectin 0.15 EC* when mites are first observed, and if necessary, repeat application. Mix *Abamectin 0.15 EC* with water and apply at the rates provided in the chart below. Depending on plant size and foliage density, use 8-16 fl. oz. of *Abamectin 0.15 EC* per acre. Apply by ground sprayer or by fixed wing aircraft or helicopter, using a minimum of 5 gallons of water per acre for thorough coverage.

<b>Cotton</b>	<b>Rate of <i>Abamectin 0.15 EC</i></b>	
<b>Pests</b>	<b>Early Season</b>	<b>Mid-Season/Lay-by</b>
Two-spotted spider mite Pacific spider mite Strawberry spider mite Carmine spider mite	4-6 fl. oz./Ac	8-16 fl. oz./Ac

#### **Use Restrictions – Cotton**

- Do not apply this product to cotton east of the Mississippi River.

- Do not apply more than 2 times per season or more than 32 fl. oz. or product per acre per growing season.
- Do not apply at intervals of less than 21 days.
- Do not apply within 20 days of harvest.
- Do not graze or feed treated cotton foliage.

**CUCURBITS:** For controlling leafminers and spider mites on Winter Squash, Summer Squash, Chayote, Chinese Waxgourd, Pumpkin, Citron Melon, Melons, Cucumbers, *Momordica* spp., Gherkin, Edible Gourds, and Watermelon.

Apply *Abamectin 0.15 EC* when adult leafminer flies or spider mites are initially seen. Repeat applications when needed to maintain control. When low to moderate infestations are present, use 8 fl. oz. per acre; for severe infestations, use 16 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.

Cucurbits	
Pests	Fl. oz. <i>Abamectin 0.15 EC</i> /Ac
Spider mites Leafminers	8.0-16.0

#### Use Restrictions--Cucurbits

- 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 48 fl. oz per acre in any growing season.
- Do not apply within 7 days of harvest.
- For resistance management, do not exceed 2 sequential applications.

**GRAPES:** For controlling two-spotted spider mites, Pacific spider mites, Willamette spider mites, and western grapeleaf skeletonizers; and for contact knock-down control of western grape leafhoppers and variegated leafhoppers.

**Spider mites:** Apply when mites initially appear, but before the number of motiles exceeds 5 per leaf. When low to moderate infestations are present, use 8 fl. oz/acre; for severe infestations, use 16 fl. oz./acre.

**Western grapeleaf skeletonizer:** Apply *Abamectin 0.15 EC* with a non-ionic surfactant when the larvae are initially seen. For best results, apply *Abamectin 0.15 EC* shortly after eggs hatch. When low to moderate infestations are present, use 8 fl. oz/acre; for severe infestations, use 16 fl. oz./acre.

**Western grape leafhoppers and variegated leafhoppers:** For contact knock-down control of these pests, apply Abamectin 0.15 EC with a non-ionic surfactant when pest first appears. When low to moderate infestations are present, use 8 fl. oz./acre; for severe infestations, use 16 fl. oz./acre.

Use conventional ground sprayers 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 *Abamectin 0.15 EC* in combination with a non-ionic surfactant. To maximize coverage, *Abamectin 0.15 EC* 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 may cause phytotoxicity. Therefore, carefully follow the **Directions for Use** and **Precautions** sections of non-ionic surfactant labels and/or official spray guides when using *Abamectin 0.15 EC* with a non-ionic surfactant.

<b>Grapes</b>	
<b>Pests</b>	<b>Fl. oz. <i>Abamectin 0.15 EC</i>/Ac</b>
Two-spotted spider mite Pacific spider mite Willamette spider mite Western grapeleaf skeletonizer Western grape leafhopper* Variegated leafhopper*	8.0-16.0 Plus a nonionic surfactant**

\* Note: *Abamectin 0.15EC* only provides contact knock-down control of this pest.

\*\*Note: *Abamectin 0.15 EC* 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.
- Do not re-apply within 21 days of first application.
- Do not use more than 16 fl. oz. of *Abamectin 0.15 EC* per acre per application or 32 fl. oz. per acre in a growing season.
- Do not exceed two applications per growing season.
- Do not apply within 28 days of harvest.
- Do not graze treated vineyards.

#### **HEAD LETTUCE: For controlling *Liriomyza* leafminers.**

Apply *Abamectin 0.15 EC* when adult flies are initially observed. Repeat applications when needed to maintain control. When low to moderate infestations are present, use 8 fl. oz./acre; for severe infestations, use 16 fl. oz./acre.

Apply as a foliar spray in at least 20 gallons of water per acre by ground or in less than 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, good upper and lower leaf coverage is essential. *Abamectin 0.15 EC* can be used without a wetting agent; however, a nonionic surfactant is recommended to improve wetting of foliage and to spread out spray deposits.

<b>Head Lettuce</b>	
<b>Pests</b>	<b>Fl. oz. <i>Abamectin 0.15 EC</i>/Ac</b>
<i>Liriomyza</i> leafminers	8.0-16.0

#### **Use Restrictions-Head Lettuce**

- Do not apply in less than 20 gallons of water per acre by ground or in less than 5 gallons of water per acre by aircraft.
- Do not apply at intervals of less than 7 days.
- Do not use more than 48 fl. oz per acre in any growing season.
- Do not apply within 7 days of harvest.
- For resistance management, do not exceed 2 sequential applications.

#### **HOPS: For controlling two-spotted spider mites. (Ground application only.) (NOT REGISTERED FOR USE IN CALIFORNIA.)**

Apply *Abamectin 0.15 EC* when populations of two-spotted spider mites reach treatment thresholds. When hop vines are 6-8 feet tall, use 8-16 fl. oz. *Abamectin 0.15 EC* in at least 40 gallons of water. When hop vines exceed 8 feet in height, use 16 fl. oz. *Abamectin 0.15 EC* in at least 100 gallons of water. Do not retreat with an abamectin product within 21 days of the initial application, and only apply after another miticide with a different mode of action has been used.

Mix with water as specified below then apply with ground equipment as a foliar spray to obtain good upper and lower leaf coverage. Spray volume may 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 *Abamectin 0.15 EC* remains the same as that of dilute sprays. *Abamectin 0.15 EC* can be used without a wetting agent; however, a nonionic surfactant is recommended to improve wetting of foliage and to spread out spray deposits.

<b>Hops</b>	
<b>Pests</b>	<b>Fl. oz. <i>Abamectin 0.15 EC</i>/Ac</b>
Two-spotted spider mites	8.0-16.0

#### **Use Restrictions-Hops**

- Do not apply aerially.
- Do not apply in less than 40 gallons of water per acre.

- 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.
- Do not use more than 16 fl. oz per acre per application and no more than 32 fl. oz./acre in any growing season.
- Do not apply within 28 days of harvest.
- Do not graze treated hop yards.

#### **Spray Drift Precautions—Hops:**

Ensure that all ground application equipment is properly maintained and calibrated with appropriate carriers. Whenever spraying in the vicinity of aquatic areas (lakes, permanent streams, marshes, reservoirs, natural ponds, estuaries, commercial fish farm ponds), observe these precautions:

- Do not apply using ground equipment within 25 ft. of the aquatic areas mentioned above.
- Avoid applications when wind direction is toward aquatic areas.
- Do not apply if heavy rainfall is imminent or during temperature inversions that are characterized by stable air and temperatures increasing with height above the ground. Inversions are often accompanied by mist or fog in humid areas. Applicators may detect an inversion by producing smoke and observing a smoke layer near the ground.
- Use the largest droplet size consistent with good pest control. To minimize formation of very small droplets, select the appropriate nozzle, orient nozzles away from the air stream as much as possible, and avoid excessive spray boom pressure.
- Apply by ground when wind velocity favors on-target product deposition (approximately 3-10 mph). If wind is gusting or if wind velocity approaches 15 mph, do not apply. Consider use of a compatible drift reducing agent.
- Spray drift potential is increased when low humidity and high temperature increase the evaporative rate of droplets. When applying *Abamectin 0.15 EC* in these conditions, adjust equipment settings to produce larger droplets to compensate for evaporation.

**PEARS (Including oriental pear trees):** For controlling European red mites, pear rust mites, yellow mites, two-spotted spider mites, McDaniel spider mites, and pear psylla. (Ground application only.)

Apply *Abamectin 0.15 EC* using conventional dilute or concentrate ground sprayers calibrated to deliver enough water for thorough coverage. 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 *Abamectin 0.15 EC* combined with a Horticultural Spray Oil (not dormant oil) as directed.

Apply *Abamectin 0.15 EC* 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.

Pears	Rate of <i>Abamectin 0.15 EC</i> & Horticultural Spray Oil *	
Pests	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	2.5-5.0 fl. oz. <i>Abamectin 0.15 EC</i> /100 gals water <i>plus</i> 1 qt. Horticultural Spray Oil*/100 gals (i.e., 0.25% of finished spray)	10-20 fl. oz. <i>Abamectin 0.15 EC</i> /Ac <i>plus</i> at least 1.0 gal. Horticultural Spray Oil*/Ac
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\*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 *Abamectin 0.15 EC* 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 may be less than 10 fl. oz./acre when used on smaller trees.

#### Use Restrictions—Pears

- Do not apply aerially.
- Do not apply in less than 40 gallons of water per acre.
- Do not re-treat within 21 days of the first application.
- Do not use more than 20 fl. oz. of *Abamectin 0.15 EC* per acre per application. Do not exceed 40 fl. oz./acre in a single growing season.
- Do not exceed 2 applications per growing season.
- Do not apply within 28 days of harvest.
- Do not graze treated orchards.

#### Spray Drift Precautions—Pears

The following precautions apply when spraying in the vicinity of aquatic areas such as lakes, reservoirs, marshes, natural ponds, estuaries, permanent streams, and commercial fish farm ponds:

- Do not apply within 110 feet upwind of any aquatic area.
- Do not apply *Abamectin 0.15 EC* when current weather conditions favor drift to any aquatic area.
- Do not apply *Abamectin 0.15 EC* when wind speed exceeds 8 mph. Do not apply when a temperature inversion occurs.
- On the last three rows upwind of aquatic areas, use nozzles on one side only and direct sprays away from aquatic areas.
- Adjust or turn off top nozzles to avoid spraying over treetops. When applying *Abamectin 0.15 EC* onto the outside row, turn off nozzles on the side away from the grove/orchard being sprayed. When turning at ends of rows and when passing tree gaps within rows, turn off nozzles.

**PEPPERS** (sweet peppers, pimentos, bell peppers, cooking peppers, and chili peppers): For controlling broad mites, spider mites, *Thrips palmi*, and *Liriomyza* leafminers.

**Broad mites and spider mites:** Apply *Abamectin 0.15 EC* when mites first appear then repeat as necessary to maintain control. For low to moderate infestations, use 8 fl. oz per acre; for severe infestations, use 16 fl. oz. per acre.

***Liriomyza* leafminers:** Apply *Abamectin 0.15 EC* when adult flies are initially observed, with repeat applications as necessary to maintain control. For low to moderate infestations, use 8 fl. oz per acre; for severe infestations, use 16 fl. oz. per acre.

***Thrips palmi*:** Apply when thrips are first seen and repeat application if necessary. For low to moderate infestations, use 8 fl. oz per acre; for severe infestations, use 16 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. *Abamectin 0.15 EC* can be used without a wetting agent; however, a nonionic surfactant is recommended to improve wetting of foliage and to spread out spray deposits.

Peppers	
Pests	Fl. oz. <i>Abamectin 0.15 EC</i> /Ac
<i>Liriomyza</i> leafminers Spider mites Broad mites <i>Thrips palmi</i>	8.0 – 16.0

#### Use Restrictions--Peppers

- 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 in intervals of less than 7 days.
- Do not exceed 48 fl. oz./acre in a single growing season.
- Do not exceed 2 sequential applications.
- Do not apply within 7 days of harvest.
- For resistance management, *Abamectin 0.15 EC* should not be used on peppers cultivated for transplanting.

**POTATOES:** For controlling Colorado potato beetles, *Liriomyza* leafminers, and spider mites.

**Colorado potato beetles:** Apply *Abamectin 0.15EC* when 50% of egg masses have hatched and larvae are observed. If two applications are planned, they should be

restricted to a single Colorado potato beetle generation per season, and intervals of at least 7 days should be observed. For low to moderate infestations, use 8 fl. oz per acre; for severe infestations, use 16 fl. oz. per acre. Do not exceed 2 applications per season.

***Liriomyza* leafminers:** Initial application should be made when adult flies are first seen. Repeat applications as necessary to maintain control so long as there is a minimum of 7-day intervals between applications. For low to moderate infestations, use 8 fl. oz per acre; for severe infestations, use 16 fl. oz. per acre.

**Spider mites:** Apply the first application when mites first appear. Repeat applications as necessary to maintain control so long as there is a minimum of 7-day intervals between applications. For low to moderate infestations, use 8 fl. oz per acre; for severe infestations, use 16 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 recommended rate. Effectiveness may be reduced if *Abamectin 0.15 EC* is used with a binder or sticker type product (such as Bravo Weather Stik).

Potatoes	
Pests	Fl. oz. <i>Abamectin 0.15 EC</i> /Ac
Colorado potato beetles Spider mites <i>Liriomyza</i> leafminers	8.0 – 16.0

#### Use Restrictions – Potatoes

- 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 use more than 48 fl. oz./acre per season to control leafminers.
- Do not use more than 32 fl. oz./acre per season to control spider mites or Colorado potato beetles.
- Do not exceed 2 sequential applications.
- Do not apply within 14 days of harvest.
- Do not graze or feed treated foliage to livestock.

**STRAWBERRIES:** For controlling two-spotted spider mites. (Ground application only.)

Apply 16 fl. oz. per acre of *Abamectin 0.15 EC* when mites are initially seen. Make 2 applications at intervals of 7-10 days and repeat this sequence as needed to maintain control. To ensure maximum coverage of tops and undersides of foliage, adjust

nozzle placement and spray volume. *Abamectin 0.15EC* can be used without a wetting agent; however, a nonionic surfactant is recommended to improve wetting of foliage and to spread out spray deposits.

Strawberries	
Pests	Fl. oz. <i>Abamectin 0.15 EC</i> /Ac
Spider mites	16.0

#### Use Restrictions – Strawberries

- Do not apply aerially.
- Do not apply in less than 100 gallons of water per acre.
- Do not re-treat within 21 days of the second application.
- Do not use more than 16 fl. oz. of *Abamectin 0.15 EC* per acre per application. Do not exceed 64 fl. oz./acre in a single growing season.
- Do not apply within 3 days of harvest.
- For resistance management, *Abamectin 0.15 EC* must not be used in strawberry nurseries.

**TOMATOES:** For controlling Colorado potato beetles, spider mites, russet mites, tomato pinworms, and *Liriomyza* leafminers.

**Colorado potato beetles:** Apply *Abamectin 0.15 EC* when newly emerged larvae are observed. Repeat applications as needed to maintain control. For low to moderate infestations, use 8 fl. oz per acre; for severe infestations, use 16 fl. oz. per acre.

**Spider and russet mites:** Apply when damage done by mites is initially visible. Repeat applications as needed to maintain control. For low to moderate infestations, use 8 fl. oz per acre; for severe infestations, use 16 fl. oz. per acre.

**Tomato pinworms:** Apply *Abamectin 0.15 EC* at 16 fl. oz. per acre when larvae are first seen. Repeat applications as needed to maintain control.

***Liriomyza* leafminers:** Apply when adult flies are initially observed. Repeat applications as needed to maintain control. For low to moderate infestations, use 8 fl. oz per acre; for severe infestations, use 16 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 of water 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. *Abamectin 0.15 EC* can be used without a wetting agent; however, a nonionic surfactant is recommended to improve wetting of foliage and to spread out spray deposits.

Tomatoes	
Pests	Fl. oz. <i>Abamectin 0.15 EC</i> /Ac

Colorado potato beetles <i>Liriomyza</i> leafminers Spider mites Tomato russet mite	8.0 – 16.0
Tomato pinworm	16.0

### Use Restrictions – Tomatoes

- 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 48 fl. oz./acre in a single growing season.
- Do not exceed 2 sequential applications.
- Do not apply within 7 days of harvest.
- For resistance management, *Abamectin 0.15 EC* must not be used on tomatoes cultivated for transplanting.

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

**Container Disposal:** Triple rinse (or equivalent) and dispose of in an incinerator or landfill approved for pesticide containers.

**Spills:** 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.

**In the event of a major spill, fire, or other emergency, call 1-800-424-9300.**

### IMPORTANT INFORMATION—READ BEFORE USING PRODUCT

**IMPORTANT:** Read the information below before using this product. If the terms are not acceptable, you should return the unopened product container immediately for a complete refund.

### WARRANTY LIMITATIONS AND DISCLAIMER

Upon purchase or use of this product, purchaser and user agree to the following terms:

**Warranty:** Nations Ag II, LLC, (the Company) warrants that this product conforms to the chemical description on the label in all material respects and is reasonably fit for the purpose referred to in the directions for use, subject to the exceptions noted below, which are beyond the Company's control. The Company makes no other representation or warranty, express or implied, concerning the product, including no implied warranty of merchantability or fitness for a particular purpose; no such warranty shall be implied by law, and no agent or representative is authorized to make any such warranty on the Company's behalf.

**Terms of Sale:** The Company's directions for use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, and the manner of use or application (including failure to adhere to label directions), all of which are beyond the Company's control. All such risks are assumed by the user.

**Limitation of Liability:** The exclusive remedy against the Company for any cause of action relating to the handling or use of this product is a claim for damages, and in no event shall damages or any other recovery of any kind exceed the price of the product which caused the alleged loss, damage, injury or other claim. Under no circumstances shall the Company be liable for any special, indirect incidental or consequential damages of any kind, including loss of profits or income, and any such claims are hereby waived. Some states do not allow the exclusion or limitation of incidental or consequential damages.

The Company and the seller offer this product, and the purchaser and user accept this product, subject to the foregoing warranty, terms of sale and limitation of liability, which may be varied or modified only by an agreement in writing signed on behalf of the Company by an authorized representative.

**Product usage questions? Call 800-979-8994.**

**Nations Ag II, L.L.C**  
**2901-12 Rivendell**  
**Knoxville, TN 37922**

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