Additional Directions for Application in Trees

Tree Tissue	Target Pest	Comments
Seed and Cone	**Cone Beetle**[1] (*Conopthora* spp.) **Pine Cone Seed Bug** (suppression of *Leptoglossus* and *Tetyra* spp. in the year of treatment) **Pine Coneworm** (*Dioryctria* spp.)	For optimal control, apply in the fall for early season pests or at least 30 days before insect attack.
Bud and Leaf	**Aphid**[1] **Bagworm** **Conifer Mites**[1] **Fall Webworm** **Gypsy Moth** **Honeylocust Plant Bug** **Japanese Beetle** ***Leafminers*** (such as *Coleoptera, Hymenoptera Lepidoptera*) **Mimosa Webworm** **Oak Worm** **Pine Needle Scale** **Red Palm Mite** **Sawfly** (such as Elm, Pine) **Tussock Moth**	Apply at least 2-3 weeks before the pest has historically been present. Consult with a local extension agent for when this will occur in your area.
Shoot, Stem Trunk and Branch	**Flatheaded Borers** (such as adult and larvae of Bronze Birch Borer[1], Emerald Ash Borer and Two-lined Chestnut Borer[1]) **Tent Caterpillars** (such as Eastern, Forest, Pacific and Western) **Western Spruce Budworm** **Winter Moth**	For optimal control, apply at least 30 days before historical egg hatch of adult flight and to trees without vascular tissue damage. If vascular tissue is damaged or plugged by insect galleries, nematodes or fungi, uniform treatment and control may not be achieved.
	Clearwing Borers (such as adult and larvae of Bronze Birch Borer, Emerald Ash Borer[1] and Two-lined Chestnut Borer[1])	
	Ambrosia Beetles[1] **Cynipid Gall Wasp**[1] **Pinewood Nematode** **Roundheaded Borers** (excluding Asian Longhorn Beetles)	

[1]Not registered for use in California.

BOXER™ Insecticide-Miticide

Injected insecticide for two-year control of listed insect and mite pests in deciduous and coniferous trees and palm trees.

ArborSystems™
The No-Drill Injection Solution

800-698-4641 • Fax: 402-339-5011
P.O. Box 34645 • Omaha, NE 68134

EPA Reg. No. 69117-12
EPA Est. 69117-NE-1

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or on clothing. Thoroughly wash with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove contaminated clothing and wash before reuse.

FIRST AID

If Swallowed: Immediately call a poison control center or doctor for treatment advice. Have person sip a glass of water if able to swallow. 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 on Skin or Clothing: Take off contaminated clothing. Immediately rinse skin with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

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 for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

Note to Physician

Early signs of intoxication include dilation of pupils, muscular incoordination and muscular tremors. Vomiting within one-half hour of exposure can minimize toxicity following accidental ingestion of the product; rapidly after exposure (< 15 minutes) repeatedly administer medical charcoal in a large quantity of water or ipecac. 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 proper 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 Emamectin Benzoate 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 Emamectin Benzoate exposure.

Hot Line Number

For 24-hour Medical Emergency Assistance (Human or Animal) call 1.800.222.1222.

PERSONAL PROTECTIVE EQUIPMENT (PPE)
Applicators and other handlers must wear:

- Long-sleeved shirt and long pants;
- Chemical-resistant gloves (Category C) such as barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils or neoprene rubber ≥ 14 mils;
- Shoes and socks; and
- Protective eyewear.

ENVIRONMENTAL HAZARDS

This product is highly toxic to fish,mammals and aquatic invertebrates. 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 contaminate water when disposing of equipment washwater. This product is highly toxic to bees exposed to direct treatment or residues on blooming trees.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame. Do not mix or allow product to come into contact with an oxidizing agent; hazardous chemical reaction may occur.

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NOTICE OF WARRANTY
ArborSystems warrants that this product conforms to the chemical description on the label and is reasonably fit for use under average conditions when used strictly in accordance with the directions on the labeling. ArborSystems does not make or authorize any agent or representative to make any other warranty, guarantee or representation, express or implied, c oncerning this product.

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ACTIVE INGREDIENT:

Emamectin Benzoate (CAS No. 155569-91-8)	4%
OTHER INGREDIENTS	96%
Total	100%

Contains 0.36 lb Emamectin per gallon

Net Contents: 4 fl oz (120 ml)
Net Contents: 1 qt 2 fl oz (1000 ml)

Keep Out of Reach of Children
CAUTION
See Inside for First Aid, additional Precautionary Statements and complete Directions for Use.

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BOXER™ Insecticide-Miticide

DIRECTIONS FOR USE

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

IMPORTANT: Read the entire label before using this product. Failure to follow label instructions may result in poor control or tree injury and may cause injury to people, animals and the environment.

PRODUCT INFORMATION

BOXER™ Insecticide-Miticide is for the control of mature and immature insect and mite pests of deciduous and coniferous trees and palm trees including, but not limited to, those growing in residential and commercial landscapes, parks, plantations, seed orchards and forested sites in private, municipal, state, tribal and national areas. BOXER™ Insecticide-Miticide contains the active ingredient Emamectin Benzoate and is formulated to translocate in the tree's vascular system when injected. This product must be placed into active sapwood and will actively control pests for up to two years.

DIRECTIONS FOR USE

BOXER™ Insecticide-Miticide is designed to be used with tree injection devices that meet the label and dose requirements for the control of listed pests of trees. Follow manufacturer's directions for equipment use.

Factors Affecting Application: Applications are most effective when made prior to insect infestation and in conjunction with good cultural management practices. The species and health of the tree, as well as local environmental conditions, will determine the rate of uptake when using low-pressure injection technology.

Environmental Conditions: This technology relies on the natural uptake rate of the tree; and thus, factors that affect the transpiration rate can greatly affect the uptake rate. Transpiration is dependent on a number of factors, such as soil moisture/temperature, ambient temperature and time of day. For optimum uptake, apply when soil moisture is adequate and soil temperatures are above 45°F. Preferred conditions for injections are morning to early afternoon hours with warm temperatures (55°F to 85°F/13°C to 30°C) accompanied by low humidity, clear skies and a slight breeze. Sunny conditions along with moist soil and a well-hydrated tree will also increase the transpiration rate and will therefore improve uptake. Conversely, cool temperatures, cloudy and/or evening skies and trees under moisture stress will slow down the uptake rate. Extreme heat and cold temperatures will adversely affect rates as well.

Trees that have a healthy vascular system will have correspondingly higher uptake rates. Trees in advanced stages of pest development may not respond to treatment, as vascular plugging caused by disease inhibits transpiration. The injection devices need to be evenly placed at points on the trunk free of visible decay areas and wounds from the point of injection to where branching begins.

Do not inject trees that are drought stressed. Applications to drought- or heat-stressed trees may result in injury to tree tissue, poor treatment and subsequently poor control. Avoid treating trees that are moisture-stressed or suffering from herbicide damage.

Do not inject trees that are in a state of dormancy.

Monitor Tree Health and Pest Infestations: Effective injection treatment is favored by a full canopy (i.e., leaves) and a healthy vascular system. Once these tissues are compromised by pest damage (larval galleries, defoliation, leaf mining, etc.) an effective and uniform application of BOXER™ Insecticide-Miticide may be difficult to achieve and subsequent control may be poor. For optimum results, treat at least 2 to 3 weeks before pests historically infest the host tree. As a result of systemic movement and longevity of BOXER™ Insecticide-Miticide in trees, the interval may be extended much earlier to 6 months should tree dormancy, adverse weather, management, asynchronous life cycle of pests, etc., allow earlier application timing.

BOXER™ Insecticide-Miticide may also be effective as a remedial treatment against some pests, such as those with slower development or if multiple life stages are susceptible to Emamectin Benzoate. Pests that attack the stem and branches, such as clearwing borers, may disrupt vascular tissue resulting in poor distribution in an infested tree. However, control may be achieved if larvae come into contact or feed on tissues treated with BOXER™ Insecticide-Miticide.

Application Instructions

Injection dosages are based on the Diameter (inches or centimeters) of the tree at Breast Height ("DBH"). DBH is the outside bark diameter of the trunk at 4.5 feet (1.37 m) above the ground on the uphill side of the tree. For the purposes of determining breast height, the ground includes the duff layer that may be present, but does not include unincorporated woody debris that may rise above the ground line.

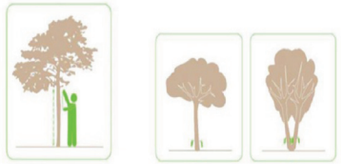
The diameter is determined by measuring the circumference of the tree at DBH and dividing the circumference (in inches) by three (3). To determine DBH for multi-stemmed woody ornamentals, measure the DBH for each stem or branch and add together for the total DBH per tree (***Figure 1***).

Number of Injection Devices Required for Treatment: Take the DBH of the tree and divide by five (5) to determine the appropriate number of devices to adequately treat the tree at the desired application rate. **Do not** treat newly established trees less than 5" DBH or 15" in circumference. In the event that the tree has multiple trunks that separate less than three (3) feet from the ground (i.e., avocado, citrus, peach, etc.) each individual trunk must be treated separately to ensure equally homogenous distribution of solution to all parts of the tree. In this instance, each individual trunk must be measured in the same way as if the trunks were standing individually (***Figure 1***).

Do not exceed calculated number of RTU injection devices per tree as injury may occur.

Retreatment: At the time of initial application, make note of the health level of each tree. Re-evaluate level in treated trees at 12-month intervals to determine the need for additional treatment. Consider applying preventative applications 12-36 months after the initial injection. Trees in high pest pressure areas or highly valued trees should be evaluated for retreatment 12 months after each treatment. Follow application procedures described above for repeat injections; new holes will be required for subsequent treatment. To ensure proper intake equally stagger the holes in subsequent applications.

Figure 1: When making a determination for the application site using the RTU injection device, consider trunk configuration.



A. Single trunk trees: The RTU injection device can be injected anywhere from the root flare to at least 20" (50.8 cm) below the branches, preferably at the base of the tree, within 12" (30.48 cm) of the soil.
B. Multi-stem trees: Be sure to calculate the combined total diameter of the stems and install the devices evenly between the stems, preferably at the base of the tree, within 12" (30.48 cm) of the soil.

RESTRICTION: Do not apply to trees/plants or tree/plant crops that may be harvested for food consumption by humans or used in animal feed.

Use Rates
(25 ml RTU Injector)
Application Rate/RTU Injector Table

Tree Diameter (DBH) (Inches)	Circumference (Inches)	Number of RTU Injectors	Application Rate fl oz	mls
4 to 6	12 to 18	1	0.8	25
7 to 9	21 to 27	2	1.7	50
10 to 12	30 to 36	3	2.5	75
13 to 15	39 to 45	3	2.5	75
16 to 18	48 to 54	4	3.4	100
19 to 21	57 to 63	4	3.4	100
22 to 24	66 to 72	5	4.2	125
25 to 27	75 to 81	6	5.1	150
28 to 30	84 to 90	6	5.1	150
31 to 33	93 to 99	7	5.9	175
34 to 36	102 to 108	7	5.9	175
37 to 39	111 to 117	8	6.8	200
40 to 42	120 to 126	9	7.6	225
43 to 45	129 to 135	9	7.6	225
46 to 48	138 to 144	10	8.4	250
49 to 51	147 to 153	10	8.4	250
52 to 54	156 to 162	11	9.3	275
55 to 57	165 to 171	12	10.1	300
58 to 60	174 to 180	12	10.1	300
61 to 63	183 to 189	13	11.0	325
64 to 66	192 to 198	13	11.0	325
67 to 69	201 to 207	14	11.8	350
70 to 72	210 to 216	15	12.7	375

STORAGE AND DISPOSAL

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

Pesticide Storage: Store in original container in a cool, dry place away from children and pets. Keep from freezing.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Non-refillable container; do not reuse or refill this container. Offer for recycling if available.

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