



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

March 17, 2017

Kt Woodall
Rotam Agrochemical Company Ltd.
c/o Wagner Regulatory Associates, Inc.
P.O. Box 640
Hockessin, DE 19707

Subject: Notification per PRN 98-10 – Change to California restriction
Product Name: Emamectin Benzoate 4% SL
EPA Registration Number: 83100-35
Application Date: 10/17/2016
Decision Number: 522849

Dear Kt Woodall,

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10. The label submitted with the application has been stamped “Notification” and will be placed in our records.

Should you wish to add/retain a reference to the company’s website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA’s Office of Enforcement and Compliance.

If you have any questions, please contact Jessica Rogala by phone at 703-347-0263, or via email at rogala.jessica@epa.gov.

Sincerely,

A handwritten signature in black ink that reads "J Rogala".

Mark Suarez, Product Manager 07
Invertebrate & Vertebrate Branch 3
Registration Division (7505P)
Office of Pesticide Programs

NOTIFICATION

83100-35

The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:

03/17/2017



EMAMECTIN BENZOATE 4% SL

Master Label consisting of:

Pages 1-10: Emamectin Benzoate 4% SL

Pages 11-19: Sub-label A: ABN: BRANDT enTREE EB; For Use in BRANDT enTREE Ready-to-Use (RTU) Low Pressure Injection Technology

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

ACTIVE INGREDIENT:	
Emamectin Benzoate ¹	4.0%
Other Ingredients:	96.0%
Total:	100.0%

¹CAS No. 155569-91-8. Contains 0.36 lb. emamectin per gallon.

EPA Reg No. 83100-35

EPA Est. No.

NET CONTENTS: 1 LITER (33.8 oz.)

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

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 [complete] [additional] [First Aid] [Precautionary Statements] [and] Directions For Use inside booklet.]

Manufactured For:

Rotam Agrochemical Co., Ltd.
26/F E-Trade Plaza
24 Lee Chung Street
Chaiwan, Hong Kong

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 clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

FIRST AID	
IF SWALLOWED:	<ul style="list-style-type: none"> • Call poison control center or doctor immediately for treatment advice. Have person sip 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:	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
IF IN EYES:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
NOTE TO PHYSICIAN:	
<p>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) administer repeatedly 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.</p>	
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>	
HOT LINE NUMBER	
<p>For 24-Hour Medical Emergency Assistance (Human or Animal) call 1-800-222-1222. For Chemical Emergency Assistance (Spill, Leak, Fire or Accident) call CHEMTREC at 1-800-424-9300.</p>	

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
- 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 to come into contact with an oxidizing agent. Hazardous chemical reaction may occur.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of ROTAM AGROCHEMICAL CO., LTD. or Seller.

To the extent permitted by applicable law, Buyer and User agree to hold ROTAM AGROCHEMICAL CO., LTD. and Seller harmless for any claims relating to such factors.

ROTAM AGROCHEMICAL CO., LTD. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or ROTAM AGROCHEMICAL CO., LTD., and, (2) Buyer and User assume the risk of any such use. TO THE EXTENT PERMITTED BY APPLICABLE LAW ROTAM AGROCHEMICAL CO., LTD. MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.

To the extent permitted by applicable law, in no event shall ROTAM AGROCHEMICAL CO., LTD. be liable for any incidental, consequential or special damages resulting from the use or handling of this product.

TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF ROTAM AGROCHEMICAL CO., LTD. AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF ROTAM AGROCHEMICAL CO., LTD. OR SELLER, THE REPLACEMENT OF THE PRODUCT.

ROTAM AGROCHEMICAL CO., LTD. and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of ROTAM AGROCHEMICAL CO., LTD.

DIRECTIONS FOR USE

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

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

PRODUCT INFORMATION

EMAMECTIN BENZOATE 4% SL is for control of mature and immature insect and mite pests of deciduous, coniferous, 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). EMAMECTIN BENZOATE 4% SL 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

EMAMECTIN BENZOATE 4% SL is designed for use 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.

Dosages are based on the Diameter (in inches) of the tree at Breast Height ("DBH"). DBH is the outside bark diameter of the trunk at 4.5 feet (1.37m) 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 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.

Placement of Application/Injection Sites: Inject at the base of the tree. Inject into the stem within 12" of the soil, into the trunk flare or into tree roots exposing them by shallow excavation. Make applications into intact, healthy sapwood. Do not inject into injured areas or areas with decay.

Number of Injection Sites: Work around the tree, spacing injection sites approximately every 4 to 8 inches of tree's circumference or according to the manufacturer's recommendation for the application device.

Drill Depth: Drill through the bark then 5/8" to 1-5/8" (hardwoods) or 1-5/8" to 2" (conifers) into the sapwood with the appropriate sized drill bit. Use clean, sharp drill bits. Precautions should be taken to avoid diseased areas and transferring infected tissues to other injection sites.

Resinous Conifers: In resinous conifers, such as pine and spruce, start the injection immediately after drilling into the sapwood. A prolonged delay may reduce uptake on account of resin flow into opening.

WHEN TO TREAT

EMAMECTIN BENZOATE 4% SL contains the active ingredient emamectin benzoate which is a glycoside insecticide. It is active against immature and adult stages of arthropods. The primary route of toxicity is through ingestion.

ENVIRONMENTAL CONDITIONS: Uptake of EMAMECTIN BENZOATE 4% SL is dependent upon the tree's transpiration. Transpiration is dependent on a number of abiotic and biotic factors, such as soil moisture, soil and ambient temperature, and time of day. For uptake, apply when soil is moist, soil temperatures are above 45 ° F, ambient temperatures are between 40 ° to 90 ° F, and during the 24 hour period when transpiration is greatest, typically before 2:00 PM. Applications to drought or heat stressed trees may result in injury to tree tissue, poor treatment and subsequent control. Avoid treating trees that are moisture stressed or suffering from herbicide damage.

MONITOR TREE HEALTH and PEST INFESTATIONS: Effective injection treatment is favored by a full canopy (i.e., leaves) and healthy vascular system. Once these tissues are compromised by pest damage

(larval galleries, defoliation, leaf mining, etc.) an effective and uniform application of EMAMECTIN BENZOATE 4% SL 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 EMAMECTIN BENZOATE 4% SL in trees, this 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.

EMAMECTIN BENZOATE 4% SL 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 4% SL. Pests that attack the stem and branches such as bark beetles and clearwing borers may disrupt vascular tissue resulting in poor distribution in an infested tree. This includes the initial larval stages of pests, such as flat-headed borers and clearwing borers, that attack the stem and branches, which may disrupt vascular tissue resulting in poor distribution of the product in an infested tree. However, control may be achieved if larvae come into contact or feed on EMAMECTIN BENZOATE 4% SL treated tissues.

[OPTIONAL USE DIRECTIONS "A"]

USE RATES

Use as formulated or dilute with equivalent 1 to 3 volumes of water or more, as necessary.

Tree Diameter (DBH) (Inches)	Low (mL product/tree)	Medium (mL product/tree)	Medium - High (mL product/tree)	High (mL product/tree)
4 to 6	15	25	50	-
7 to 9	20	40	80	-
10 to 12	30	55	110	165
13 to 15	35	70	140	210
16 to 18	42	85	170	225
19 to 21	50	100	200	300
22 to 24	-	115	230	345
25 to 27	-	130	260	390
28 to 30	-	145	290	435
31 to 33	-	160	320	480
34 to 36	-	175	350	525
37 to 39	-	190	380	570
40 to 42	-	205	410	615
43 to 45	-	220	440	660
46 to 48	-	235	470	705
49 to 51	-	250	500	750
52 to 54	-	265	530	795
55 to 57	-	280	560	840
58 to 60	-	295	590	885
61 to 63	-	310	620	930
64 to 66	-	325	650	975
67 to 69	-	340	680	1020
70 to 72	-	355	710	1065

The use of low, medium, medium-high and high rates are based on the professional judgment of the applicator as to what constitutes a low, medium or high infestation. Higher rates tend to provide longer residual and control of more difficult to control insects. See **Target Pest** table for additional information in choosing the amount of product to apply.

ADDITIONAL DIRECTIONS FOR APPLICATION IN TREES			
Tree Tissue	Target Pest	Application Rate Range ¹	Comments
Seed and Cone	Pine Coneworm (<i>Dioryctria</i> spp.) Cone Beetle ² (<i>Conophthora</i> spp.) Pine Cone Seed Bug (suppression of <i>Leptoglossus</i> and <i>Tetyra</i> spp. in the year of treatment)	Medium to High	For optimal control apply in the fall for early season pests or at least 30 days before insect attack.
Bud and Leaf	Aphid ² Bagworm Conifer Mites ² Fall Webworm Japanese Beetle Gypsy Moth Mimosa Webworm Oak Worm Tussock Moth Leafminers (such as <i>Lepidoptera</i> , <i>Coleoptera</i> , <i>Hymenoptera</i>) Honeylocust Plant Bug Pine Needle Scale Red Palm Mite Sawfly (such as Elm, Pine)	Low to High	Apply at least 2-3 weeks before the pest has historically been present. Consult with local extension agent for when this will occur in your area.
	Tent Caterpillars (such as Eastern, Forest, Pacific, and Western) Western Spruce Budworm Winter Moth	Low to High	
Shoot, Stem Trunk and Branch	Flatheaded Borers (such as adult and larvae of Bronze Birch Borer ² , Emerald Ash Borer, and Two-lined Chestnut Borer ²)	Low to High	For optimal control apply at least 30 days before historical egg hatch or adult flight and to trees whose vascular tissue is not damaged. 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 Ash and Sequoia Pine Pitch Tube Moth)	Low to High	
	Ambrosia Beetles ² Roundheaded Borers (excluding Asian longhorn beetles) Scolytids (bark beetles) <i>Ips</i> Engraver Beetles, Mountain Pine Beetle, Southern Pine Beetle, Spruce Beetle, Western Pine Beetle Cynipid Gall Wasp ² Pinewood Nematode	Medium to High	

¹Use medium to high rates for remedial and longer residual control.

²Not registered for use in California.

COMPATIBILITY

Do not mix EMAMECTIN BENZOATE 4% SL before injection with other products such as insecticides, fungicides, plant growth regulators, surfactants, adjuvants, and fertilizers whose labels indicate that it should not be mixed with Emamectin Benzoate 4% SL. If applicator has no prior experience with a particular tank mix; check physical compatibility by making a small clear jar test using correct proportions to be tank mixed.

RESTRICTION

Do not apply to trees that may be harvested for food consumption by humans or used in animal feed.

[OPTIONAL USE DIRECTIONS "B"]**USE RATES**

Use as formulated or dilute with equivalent 1 to 3 volumes of water or more, as necessary.

Tree Diameter (DBH) (Inches)	Low mL product/tree	Medium mL product/tree	High mL product/tree
4 to 6	15	25	50
7 to 9	20	40	80
10 to 12	30	55	110
13 to 15	35	70	140
16 to 18	42	85	170
19 to 21	50	100	200
22 to 24	-	115	230
25 to 27	-	130	260
28 to 30	-	145	290
31 to 33	-	160	320
34 to 36	-	175	350
37 to 39	-	190	380
40 to 42	-	205	410
43 to 45	-	220	440
46 to 48	-	235	470
49 to 51	-	250	500
52 to 54	-	265	530
55 to 57	-	280	560
58 to 60	-	295	590
61 to 63	-	310	620
64 to 66	-	325	650
67 to 69	-	340	680
70 to 72	-	355	710

The use of low, medium, and high rates are based on the professional judgment of the applicator as to what constitutes a low, medium or high infestation. Higher rates tend to provide longer residual and control of more difficult to control insects. See **Target Pest** table for additional information in choosing the amount of product to apply.

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Shoot, Stem Trunk and Branch	Flatheaded Borers (such as adult and larvae of Bronze Birch Borer ² , Emerald Ash Borer, and Two-lined Chestnut Borer ²)	Low to High	For optimal control apply at least 30 days before historical egg hatch or adult flight and to trees whose vascular tissue is not damaged. If vascular tissue is damaged or plugged by insect galleries, nematodes or fungi, uniform treatment and control may not be achieved.
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¹Use medium to high rates for remedial and longer residual control.

²Not registered for use in California.

COMPATIBILITY

Do not mix EMAMECTIN BENZOATE 4% SL before injection with other products such as insecticides, fungicides, plant growth regulators, surfactants, adjuvants, and fertilizers whose labels indicate that it should not be mixed with Emamectin Benzoate 4% SL. If applicator has no prior experience with a particular tank mix; check physical compatibility by making a small clear jar test using correct proportions to be tank mixed.

RESTRICTION

Do not apply to trees that may be harvested for food consumption by humans or used in animal feed.

STORAGE AND DISPOSAL

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

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

Pesticide Disposal: Waste 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. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, if allowed by state and local authorities Stay out of smoke from burning container.

Pages 11-19: Sub-Label A: ABN: BRANDT enTREE EB

Use in BRANDT enTREE Ready-to-Use (RTU) Low Pressure Injection Technology

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

ACTIVE INGREDIENT:	
Emamectin Benzoate ¹	4.0%
Other Ingredients:	<u>96.0%</u>
Total:	100.0%

¹CAS No. 155569-91-8. Contains 0.36 lb. emamectin per gallon.

EPA Reg No. 83100-35

EPA Est. No.

NET CONTENTS: 25 total mls. devices

(50 x 25 mls., 48 x 25 mls., 24 x 25 mls., 12 x 25 mls., 6 x 25, 4 x 25 mls.)

NOTIFICATION

83100-35

The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:

03/20/2017

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

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 [complete] [additional] [First Aid] [Precautionary Statements] [and] Directions For Use inside booklet.]

Distributed by:

BRANDT Consolidated, Inc.
2935 South Koke Mill Road
Springfield, IL 62711
www.brandt.co
800-300-6559

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 clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

FIRST AID	
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To the extent permitted by applicable law, Buyer and User agree to hold BRANDT Consolidated, Inc. and Seller harmless for any claims relating to such factors.

BRANDT Consolidated, Inc. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or BRANDT CONSOLIDATED, INC., and, (2) Buyer and User assume the risk of any such use. TO THE EXTENT PERMITTED BY APPLICABLE LAW, BRANDT CONSOLIDATED, INC. MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.

To the extent permitted by applicable law, in no event shall BRANDT Consolidated, Inc. be liable for any incidental, consequential or special damages resulting from the use or handling of this product.

TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF BRANDT CONSOLIDATED, INC. AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF BRANDT CONSOLIDATED, INC. OR SELLER, THE REPLACEMENT OF THE PRODUCT.

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

PRODUCT INFORMATION

BRANDT enTREE EB is for the control of mature and immature insect and mite pests of deciduous, coniferous, 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). BRANDT enTREE EB contains the active ingredient emamectin benzoate which is a glycoside insecticide, and is formulated to translocate in the tree's vascular system when injected. It is active against immature and adult stages of arthropods, and its primary route of toxicity is through ingestion. This product must be placed into active sapwood and will actively control pests for up to two years.

DIRECTIONS FOR 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 BRANDT enTREE Ready-to-Use (RTU) 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, soil and 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°-85° F/13°-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 rate of uptake. Extreme heat and cold temperatures will adversely affect rates as well.

Trees that have health vascular systems 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. If the BRANDT enTREE RTU device has not started to absorb within one hour, consider removing the device (following the proper sequence provided in the removal instructions) and; drill a new hole in a different area of the trunk and inject again. 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. If the BRANDT enTREE RTU device has not started to absorb within one hour after the second attempt, the vascular system of the tree may be too compromised for treatment and there is significant decay in that local injection area.

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 healthy vascular system. Once these tissues are compromised by pest damage (larval galleries, defoliation, leaf mining, etc.) an effective and uniform application of BRANDT enTREE EB 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 BRANDT enTREE EB 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.

BRANDT enTREE EB 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 the active ingredient. 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 BRANDT enTREE EB treated tissues.

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 (1.37m) 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 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 BRANDT enTREE RTU Injection Devices Required for Treatment: Take the DBH of the tree and divide by five (5) to determine the appropriate number of BRANDT enTREE RTU 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 trunk were standing individually (**Figure 1**).

Refer to the **Application Rate/Number of RTU Injection Devices** chart. DO NOT exceed calculated number of RTU injection devices per tree as injury may occur.

Preparing the Holes: To ensure an equal and homogenous delivery of active ingredient to all parts of the tree's branching structure, space the required number of holes evenly around the circumference of the tree. Hole placement can range from lowest point at the roof flare to highest point of chest height (approximately 4.5 ft. [1.368m] above the ground). Injection holes must be at least 20" (50.80 cm) below the lowest branch on the trunk. The preferred method is to inject at the base of the tree, within 12" (30.48 cm) of the soil. Prepare injection sites in healthy wood free from any defects such as old wounds or decayed areas. Avoid any placement of devices in between the root flares where there is tight compression of the bark and cambium tissue.

Using an electric drill, select a 15/64" (.58420 cm) fast spiral drill bit (for optimal performance, a high-helix drill bit is recommended). It is necessary to drill holes into the tree deep enough to reach the tree's vascular system for translocation of the active ingredient throughout the tree. Make injection holes at least ½ to ¾ inch into healthy xylem (white wood) with actual depth up to 2 inches (5.08 cm) or more from the outer trunk surface depending upon the tree species and outer bark thickness. For conifer species with high resin pressure, drill holes higher on the trunk (36-48" or 91.44-121.92 cm) and to a deeper drill depth of 2+ inches (5.08+ cm).

For optimal device performance and to minimize leakage and improve holding capacity of the injector, be sure to:

- (1) use clean, sharp drill bits;
- (2) slightly angle depth of hole downwards; and
- (3) make one clean drill entrance into the tree (i.e., avoid multiple in-and-out motions of drill bit in hole) to reduce shavings residual left inside the hole. Follow good application practices by disinfecting drill bits prior to use on each tree to minimize the spread of disease where known infections occur (**Figure 2**).

Inserting the Connector: Once the injection site is drilled, insert the longer and thicker part of the connector into the tree hole, and secure its placement by push and twist of hand, or by gently tapping the connector with a nylon hammer or rubber mallet. The connector shall only be inserted to the point where it fits snugly in the hole. **DO NOT** force the connector too deep into the hole. Be sure to leave approximately ½" (1.27 cm) of open chamber at the end of the connector to allow the solution to collect and be pulled through the vascular system of the tree (**Figure 3**).

Connecting the RTU Injection Device: Remove the colored device cap and connect the RTU injection device to the connector by firmly pushing the connector through the membrane of the device top. To ensure the device is securely inserted, slightly twist and gently force the RTU injection device until it snaps into final position. The RTU Injection device can be placed upright, sideways, or upside-down on the connector depending upon the placement of the connector on the tree (**Figure 4**).

Resinous Conifers: In resinous conifers, such as pine and spruce, start the injection immediately after drilling into the sapwood. A prolonged delay may reduce uptake due to resin flow into the opening.

Removing the RTU Injection Device: When the RTU injection device is emptied:

- (1) Remove the device from its connector; then
- (2) Remove the connector from the tree.

Gently shake the device to ensure all contents have been injected. If there is remaining material, re-insert the connector and connect the device for further uptake.

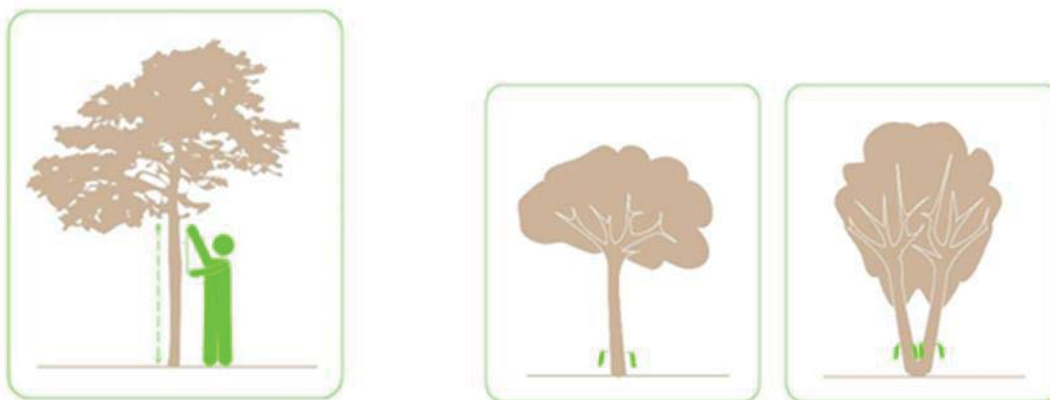
NOTE: The RTU injection device membrane will re-seal itself to avoid and leakage or spillage until it is re-penetrated with the connector (**Figure 5**).

It is not necessary to treat the drill holes with wound paint or other sealing compounds.

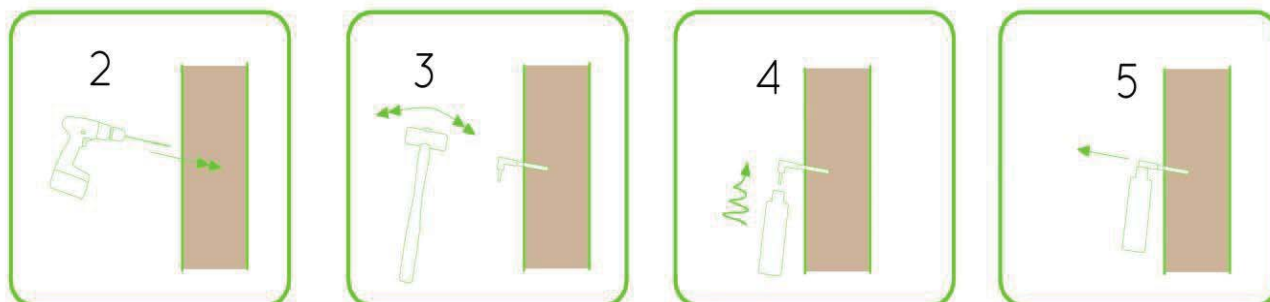
Retreatment:

At the time of initial application, make note of the level of health of each tree. Re-evaluate level in treated trees at 12-month intervals to determine the need for treatment. Preventative applications should be considered 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 drill holes will be required for subsequent treatments. Stagger the holes equally in subsequent applications to ensure proper intake.

1. When making a determination for the site of the application using the BRANDT enTREE RTU injection device, consideration should be taken for trunk configuration.



- A. Single trunk trees: the BRANDT enTREE RTU 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 total diameter of the stems combined and install the devices evenly between the stems, preferably at the base of the tree, within 12" (30.48 cm) of the soil.



2. Using an electric drill, select a 15/64" (.58420 cm) fast-spiral high-helix drill bit and drill a hole 2" (5.08 cm) deep slightly angled downwards. Hole depth will vary depending on bark thickness. Hole placement can range from injection at the root flare to chest height (approximately 4.5 ft. [1.368 m] above the ground) remaining at least 20" (50.8 cm) below lowest branch. The preferred method is to inject at the base of the tree within 12" (30.48 cm) of the soil.
3. Insert the longer and thicker branch of the connector into tree hole and secure its placement by push and twist of hand OR by gently tapping the connector with a nylon hammer or rubber mallet
4. Remove colored cap and connect RTU injection device to the connector by firmly pushing the connector through the membrane of the device top. To ensure the device is securely inserted, slightly twist and snap the device into final position.
5. When the device is emptied, (1) first remove the device from its connector and then (2) remove the connector from the tree. Gently shake the device to ensure all contents have been injected. If there is remaining material, re-insert the connector and connect device for further uptake. Rate of uptake will vary and there is no need to cover the holes- the tree will heal naturally. Note: The injection device membrane will re-seal itself to avoid any leakage or spillage until it is re-penetrated with the connector.

USE RATES – 25 ml enTREE RTU Injector

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

Tree Tissue	Target Pest	Comments
Seed and Cone	Pine Coneworm (<i>Dioryctria</i> spp.) Cone Beetle ¹ (<i>Conophthora</i> spp.) Pine Cone Seed Bug (suppression of <i>Leptoglossus</i> and <i>Tetyra</i> spp. in the year of treatment)	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 Fall Webworm Japanese Beetle Gypsy Moth Mimosa Webworm Oak Worm Tussock Moth Leafminers (such as <i>Lepidoptera</i> , <i>Coleoptera</i> , <i>Hymenoptera</i>) Honeylocust Plant Bug Pine Needle Scale Red Palm Mite Sawfly (such as Elm, Pine) Tent Caterpillars (such as Eastern, Forest, Pacific, and Western) Western Spruce Budworm Winter Moth	Apply at least 2-3 weeks before the pest has historically been present. Consult with 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) Clearwing Borers (such as Ash and Sequoia Pine Pitch Tube Moth) Ambrosia Beetles ⁴ Roundheaded Borers (excluding Asian longhorn beetles) Cynipid Gall Wasp ¹ Pinewood Nematode	<p>For optimal control apply at least 30 days before historical egg hatch or adult flight and to trees whose vascular tissue is not damaged.</p> <p>If vascular tissue is damaged or plugged by insect galleries, nematodes or fungi, uniform treatment and control may not be achieved.</p>

¹Not registered for use in California.

RESTRICTION

Do not apply to trees that may be harvested for food consumption by humans or used in animal feed.

STORAGE AND DISPOSAL

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

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

Pesticide Disposal: Waste 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.