

GROUP	4A	INSECTICIDE
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**DINOCIDE**®

SYSTEMIC INSECTICIDE  
FOR TREE INJECTION USE

MFG. BY:	J.J. MAUGET CO.
TOWN, STATE:	Arcadia, CA 91006
EPA REGISTRATION NO:	7946-35
EPA ESTABLISHMENT NO:	7946-CA-1

**ACTIVE INGREDIENT:**  
Dinotefuran\* 12%

**OTHER INGREDIENTS:**..... 88%

Total 100%

\*Contains 0.13 g/mL N-methyl-N'-nitro-N''-[(tetrahydro-3-furanyl)methyl]guanidine

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

FIRST AID	
<b>IF SWALLOWED</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to by a poison control center or doctor.</li> <li>• <b>Do not give anything to an unconscious person.</b></li> </ul>
<b>IF ON SKIN</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF IN EYES</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>HOT LINE NUMBER</b>	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact INFOTRAC 1-800-535-5053 for emergency treatment information.	

**Net Contents:**

- \_\_\_\_\_ 288 capsules @ 4mL each, 1152 mL net; 288 feeder tubes
- \_\_\_\_\_ 24 capsules plus 24 feeder tubes per carton.
- \_\_\_\_\_ 24 capsules @ 2mL, 48 mL net, or
- \_\_\_\_\_ 24 capsules @ 3mL, 72 mL net, or
- \_\_\_\_\_ 24 capsules @ 4mL, 96 mL net, or
- \_\_\_\_\_ 24 capsules @ 6mL, 144 mL net
- \_\_\_\_\_ Shipping box: 12 Cartons as above.

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS  
CAUTION**

Harmful if swallowed or absorbed through the 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 contaminated clothing and wash before reuse. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

**PERSONAL PROTECTIVE EQUIPMENT (PPE):  
APPLICATORS AND OTHER HANDLERS MUST WEAR:**

- Long-sleeved shirt and long pants
- Chemical resistant gloves made of polyethylene or butyl rubber or neoprene rubber or Viton >14 mil
- Shoes plus socks
- Protective eyewear such as goggles, face shield or safety glasses

Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, 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/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**PHYSICAL OR CHEMICAL HAZARDS**

Do not mix or allow contact with water or oxidizing agents. Hazardous chemical reactions may occur. Do not use or store near heat or open flame.

**ENVIRONMENTAL HAZARDS**

This pesticide is toxic to aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not dispose equipment washwaters or rinsate into a natural drain or water body.

This product is toxic to honey bees. The persistence of residues and potential residual toxicity of Dinotefuran in nectar and pollen suggests the possibility of chronic toxic risk to honey bee larvae and the eventual instability of the hive.

This product is toxic to bees exposed to treatment for more than 38 hours following treatment.

Do not apply this product to blooming, pollen-shedding or nectar-producing parts of plants if bees may forage on the plants during this time period, unless the application is made in response to a public health emergency declared by appropriate state or federal authorities.

Dinotefuran and its degradate, MNG, have the properties and characteristics associated with chemicals detected in ground water. The high water solubility of dinotefuran, and its degradate, MNG, coupled with its very high mobility, and resistance to biodegradation indicates that this compound has a strong potential to leach to the subsurface under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Periodic monitoring of shallow groundwater in the use area is recommended.

## Resistance Management

DINOCIDE contains a Group 4A insecticide. Insect biotypes with acquired resistance to Group 4A may eventually dominate the insect/mite population if Group 4A insecticides are used repeatedly in the same field or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by DINOCIDE or other Group 4A pesticides. To delay insecticide resistance, consider: • Avoiding the consecutive use of DINOCIDE or other Group 4A insecticides that have a similar target site of action, on the same insect species. • Basing insecticide use on a comprehensive IPM program. • Monitoring treated insect populations for loss of field efficacy. • Contacting your local extension specialist, certified crop advisors, and/or manufacturer for insecticide resistance management and/or IPM recommendations for the specific site and resistant pest problems.

## DIRECTIONS FOR USE

IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT IN A MANNER INCONSISTENT WITH ITS LABELING.

## Restrictions

- Do not inject trees that are less than two inches in diameter at breast height (DBH) (6 inches in circumference).
- This product is NOT to be used on trees which will produce food within the year (365 days) following treatment unless food crop on treated tree is discarded and destroyed.
- Do not apply this product, by any application method, to linden, basswood or other *Tilia* species in the state of Oregon.
- Do not apply this product more than one time per year.

Read entire label, use strictly in accordance with precautionary statements and directions, and with applicable state and federal regulations. Failure to follow label directions may result in poor control or tree injury.

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 requirement 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 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses, and the 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.

There are no reentry or Personal Protective Equipment requirements for this product.

### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

There are no reentry or protective clothing requirements for this product.

## USE SITES

DINOCIDE is for use on hardwood or deciduous trees, evergreens and palms grown in forests, woodlands, ornamental landscapes such as residential and commercial settings, median strips, roadways, Christmas tree farms, cemeteries, parks, and interior and exterior plantscapes.

### LISTED PESTS

ADELGIDS  
APHIDS  
BLACK VINE WEEVIL ADULT  
BRONZE BIRCH BORER  
COTTONWOOD LONGHORNED BORER  
DOUGLAS FIR GALL MIDGE  
DOUGLAS FIR CONE MOTH LARVAE  
ELM LEAF BEETLE  
EUCALYPTUS LONGHORNED BORER  
FLATHEADED BORER (including Alder Borer and Birch Borer;  
excluding Emerald Ash Borer)  
JAPANESE BEETLE  
LACEBUGS  
LEAFHOPPERS

**LEAFMINERS  
MEALYBUGS  
PINE TIP MOTH LARVAE  
PSYLLIDS (including Lerp Psyllid)  
ROYAL PALM BUGS  
SCALE INSECTS (armored and soft, including Asian Cycad  
Scale)  
SPOTTED LANTERNFLY  
SPRUCE BUDWORM  
THRIPS  
WHITEFLIES**

## **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 the Mauguet System. Uptake time in the tree usually occurs within several minutes to over an hour, but trees in advanced stages of insect infestation may not respond to treatment. If DINOCIDE is not absorbed within 24 hours (barring any applicator error or malfunction of injection device, or environmental factors affecting transpiration) the tree may be considered high risk with a possible poor chance of survival.

### **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 upon a number of factors, such as soil moisture, soil and air temperatures, 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 healthy 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 DINOCIDE has not started to absorb within two hours, 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 spaced at points on the trunk free of visible decay areas and wounds from the point of injection to where branching begins. If DINOCIDE has not started to absorb within one hour after the second attempt, the vascular system of the tree may be too compromised for treatment or 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.

### **Monitor Tree Health and Pest Infestations**

Preventative application is more effective than therapeutic treatment in trees showing insect infestation symptoms. 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 DINOCIDE may be difficult to achieve and subsequent control may be poor. For optimal results, treat at least 2 to 3 weeks before pests historically infest the host tree. As a result of systemic movement and longevity of DINOCIDE 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.

DINOCIDE 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 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 DINOCIDE-treated tree tissues.

## **APPLICATION INSTRUCTIONS**

### **Timing of Application:**

Preventive applications approximately 2 to 4 weeks prior to the anticipated feeding damage will provide better management, but rescue treatments will also perform well with acceptable minimal damage. DINOCIDE can also be used after damage has occurred against listed insect pests that produce large amounts of feeding debris. Focus timing and treatment on the most susceptible stage of the listed pest.

## Sequential Treatments:

When treating for beetles that carry fungi (ambrosia), an additional treatment of fungicide may improve management strategies. Materials to consider are fungicides labeled for use against vascular-inhabiting fungi.

DINOCIDE may be sequentially applied with other insecticides, such as abamectin, for a more broad spectrum treatment.

## Application Tips:

To account for trunk flare, place injection sites evenly around the base of the root flare within 6 to 8 inches of the root crown. For pines and other resinous conifer species, injection sites may be higher up on the trunk (see Step 5 below). Follow good injection practices. Disinfect drill bit prior to use on each tree.

## Tree measurement guidance

Dosages are based on the circumference OR 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 (1.4 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 breast height, and dividing circumference (in inches) by three (3). To determine DBH for multi-stemmed woody ornamentals, measure the DBH of each stem or branch and add together for the total DBH per tree.

### 1. The MAUGET SYSTEM

- (A) Mauget compressible capsule with insert hole
- (B) Feeder tube with flanged gun-sight and opposite tapered beveled end

### 2. TOOLS

- (A) Portable electric drill
- (B) 11/64 in. (0.4 cm) drill bit
- (C) Optional soft headed mallet or hammer
- (D) Tape measure
- (E) Insertion tool (optional)

### 3. NUMBER OF CAPSULES

Measure the tree at breast height in inches. If measuring the circumference, divide this number by six (6) to determine the number of capsules needed. If measuring the diameter at breast height (DBH), divide this number by 2 (two) to determine the number of capsules needed. If the number of capsules results in a fraction, round down to the lower whole number.

The following dosage, per capsule, depends on tree diameter:

- 2mL capsules – 2 to 10 inches DBH
- 3mL capsules – 11 to 36 inches DBH
- 4mL capsules – 37 inches DBH and above.
- 6mL capsules – narrow-leaved evergreen trees.

For heavier infestation and/or more persistent insects, use 4 mL capsules on all tree sizes. For narrow-leaved evergreen trees such as pine, spruce, or hemlock, use the 6 mL capsules at 4-inch circumference spacing (DBH divided by 1.3). Trees in advanced stages of insect infestation may not respond to treatment. The health, species of the tree and the environmental conditions will determine the rate of uptake.

For palms and other monocotyledons, when using multiple injection sites, alternate drilling depth to capture scattered vascular bundles, taking care that the depth of any single site is less than 1/3 the diameter of the tree. If using a single injection site, one feeder tube can be used to administer the contents of all capsules. Injection sites may be covered with Lac Balsam or similar for aesthetic purposes.

Tree Diameter (DBH inches)	Circumference (Inches)	2 mL/DBH Rate (Number of capsules; grams of Active Ingredient)	3 mL/DBH Rate (Number of capsules; grams of Active Ingredient)	4 mL/DBH Rate (Number of capsules; grams of Active Ingredient)	6 mL/DBH Rate (Number of capsules; grams of Active Ingredient)
2 to 4	6 to 12	1 to 2 capsules/0.3 to 0.5 g	---	1 to 2 capsules/0.5 to 1.0 g	1 to 2 capsules/0.8 to 1.6 g
5 to 7	15 to 21	2 to 3 capsules/0.5 to 0.8 g	---	2 to 3 capsules/1.0 to 1.6 g	2 to 3 capsules/1.6 to 2.3 g
8 to 10	24 to 30	4 to 5 capsules/1.0 to 1.3 g	---	4 to 5 capsules/2.1 to 2.6 g	4 to 5 capsules/3.1 to 3.9 g
11 to 13	33 to 39	---	5 to 6 capsules/2.0 to 2.3 g	5 to 6 capsules/2.6 to 3.1 g	5 to 6 capsules/3.9 to 4.7 g
14 to 16	42 to 48	---	7 to 8 capsules/2.7 to 3.1 g	7 to 8 capsules/3.6 to 4.2 g	7 to 8 capsules/5.5 to 6.2 g
17 to 19	51 to 57	---	8 to 9 capsules/3.1 to 3.5 g	8 to 9 capsules/4.2 to 4.7 g	8 to 9 capsules/6.2 to 7.0 g
20 to 22	60 to 66	---	10 to 11 capsules/3.9 to 4.3 g	10 to 11 capsules/5.2 to 5.7 g	10 to 11 capsules/7.8 to 8.6 g
23 to 25	69 to 75	---	11 to 12 capsules/4.3 to 4.7 g	11 to 12 capsules/5.7 to 6.2 g	11 to 12 capsules/8.6 to 9.4 g
26 to 28	78 to 84	---	13 to 14 capsules/5.1 to 5.5 g	13 to 14 capsules/6.8 to 7.3 g	13 to 14 capsules/10.1 to 10.9 g
29 to 31	87 to 93	---	14 to 15 capsules/5.5 to 5.9 g	14 to 15 capsules/7.3 to 7.8 g	14 to 15 capsules/10.9 to 11.7 g

32 to 34	96 to 102	---	16 to 17 capsules/6.2 to 6.6 g	16 to 17 capsules/8.3 to 8.8 g	16 to 17 capsules/12.5 to 13.3 g
35 to 36	105 to 111	---	17 to 18 capsules/6.6 to 7.0 g	17 to 18 capsules/8.8 to 9.4 g	17 to 18 capsules/13.3 to 14.0 g
37 to 40	114 to 120	---	---	18 to 20 capsules/9.4 to 10.4 g	18 to 20 capsules/14.0 to 15.6 g
41 to 43	123 to 129	---	---	20 to 21 capsules/10.4 to 10.9 g	20 to 21 capsules/15.6 to 16.4 g
44 to 46	132 to 138	---	---	22 to 23 capsules/11.4 to 12.0 g	22 to 23 capsules/17.2 to 17.9 g
47 to 49	141 to 147	---	---	23 to 24 capsules/12.0 to 12.5 g	23 to 24 capsules/17.9 to 18.7 g
50 to 52	150 to 156	---	---	25 to 26 capsules/13.0 to 13.5 g	25 to 26 capsules/19.5 to 20.3 g
53 to 58	159 to 174	---	---	26 to 29 capsules/13.5 to 15.1 g	26 to 29 capsules/20.3 to 22.6 g
59 to 61	177 to 183	---	---	29 to 30 capsules/15.1 to 15.6 g	29 to 30 capsules/22.6 to 23.4 g
62 to 64	186 to 192	---	---	31 to 32 capsules/16.1 to 16.6 g	31 to 32 capsules/24.27 to 25.0 g
65 to 67	195 to 201	---	---	32 to 33 capsules/16.6 to 17.2 g	32 to 33 capsules/25.0 to 25.7 g
68 to 70	204 to 210	---	---	34 to 35 capsules/17.7 to 18.2 g	34 to 35 capsules/26.5 to 27.3 g
71 to 73	213 to 219	---	---	35 to 36 capsules/18.2 to 18.7 g	35 to 36 capsules/27.3 to 28.1 g

#### **4. PRESSURIZING THE CAPSULE**

Apply the appropriate amount of pressure on the top of the capsule in order to compress.

#### **5. DRILLING THE TREE HOLE**

Pre-drill spaced injection sites at a slight downward angle at the root flair/buttress area (approximately 6.0 to 8.0 in., 15 to 20 cm) above ground level, using a clean 11/64 in. (0.4 cm) drill bit (except monocotyledons, conifers, etc.). Drill the hole deep enough to allow the vascular system to transport DINOICIDE throughout the tree. Make injection holes at least 3/8 to 1/2 inch (0.95 to 1.3 cm) into healthy xylem (white wood) under the bark, up to a depth of 2 inches (5 cm) from the outer trunk surface depending upon the tree species and outer bark thickness. For conifer species with high resin pressure during the growing season, place injection sites higher on the trunk (36 – 48 inches) and to a depth of up to 2 inches where tree diameter allows. Disinfect drill bit and insertion tool (if used).

#### **6. TREE HOLE DEPTH**

It is important that the feeder tube be set to the proper depth in the conductive xylem tissue. If set too deeply, flow is restricted by blockage in the heartwood; if set too shallow, leakage may occur. The feeder tube dispensing end is beveled to allow for a 1/4 in. plus tolerance.

#### **7. COMBINING CAPSULE AND FEEDER TUBE**

Several methods of combining the capsule with the feeder tube are acceptable including placing by hand, the feeder tube's flange end, with the flange notch upward, into the capsule insert hole of a compressed upright capsule. Push the flange end of the feeder tube flush with the membrane located at the inner end of the insert hole.

#### **8. PLACING THE FEEDER TUBE IN THE TREE**

Firmly seat the beveled, dispensing end of the feeder tube, with the attached upright capsule, into the pre-drilled tree injection hole. Tap the rear side, opposite the insert hole of the capsule either with an optional mallet, hammer or push forward with the palm of your hand. This action will simultaneously seat the feeder tube in the injection hole while breaking the capsule membrane for releasing the capsule contents into the feeder tube and into the tree. Another method is to place the feeder tube in the pre-drilled hole of the tree using the optional insertion tool. Then place the compressed capsule onto the feeder tube in place.

#### **9. REMOVAL**

Uptake in the tree usually occurs within several minutes. Capsules may be temporarily rotated in place to see if any liquid is left. When empty, turn the capsules upside down for one minute before removal. Applicators must remove capsules promptly after treatment. Empty capsules must not be left on the tree. The health and species of the tree, and local environmental conditions will determine the rate of uptake. If the capsule does not completely empty within a few hours, invert and carefully remove the capsule and enclose it in a heavy duty plastic bag for disposal in accordance with state and local regulations.

#### **Retreatment**

At time of initial application, make note of the health level of each tree. Reevaluate health level in treated trees at 12-month intervals to determine the need for retreatment. Consider preventive applications 12-36 months after the initial treatment. Evaluate trees in high pest pressure areas or highly valued trees for retreatment if symptoms progress or 12 months after each treatment. Repeat treatment after 12 months, if needed. 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 uptake.

**STORAGE AND DISPOSAL**

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

**PESTICIDE STORAGE:** Keep pesticide in original container. Store in a cool (45°F-90°F), dry place out of direct sunlight and out of reach of children and animals.

**PESTICIDE DISPOSAL:** Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**CONTAINER HANDLING:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available, or dispose of in a sanitary landfill, or by incineration if approved by state and local authorities. Do not burn unless allowed by state and local ordinances. If burned, stay out of smoke.

**NOTICE OF WARRANTY**

To the extent consistent with applicable law, J.J. Mauget Co. makes no warranty of merchantability, fitness for any purpose or otherwise expressed or implied concerning this product or its uses which extends beyond the use of the product under normal conditions in accord with the statements made on this label.