ARBORICULTURE IN MOTION®

Arbor-OTC™

Injectable Tree Antibiotic

INJECTABLE TREE ANTIBIOTIC

Arbor-OTC™ is a systemic water soluble injectable antibiotic for the control of certain bacterial diseases in non-food bearing palms including Phytoplasma Disease (Lethal Yellowing and Texas Phoenix Palm Decline). Arbor-OTC is a systemic water soluble injectable antibiotic for the control of certain bacterial diseases in non-food bearing trees including Bacterial Leaf Scorch.

82013

ACTIVE INGREDIENT:

Oxytetracycline Hydrochloride* 39.60%

OTHER INGREDIENTS..... ..... 60.40%

TOTAL..... 100.00%

* Equivalent to 36.7% oxytetracycline

EPA Reg No. 74578-7 • EPA Est. No. 74578 - MA-001

Net Contents: 5.0 oz. (140g)

KEEP OUT OF REACH OF CHILDREN

WARNING

See inside booklet for first aid, restrictions and precautionary statements.

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)

STATE OF HAWAII
Department of Agriculture

ACCEPTED

LICENSE NO. 8343.6

ARBORjet®
Revolutionary Plant Health Solutions

Arbor-OTC

74578-7

BOOKLET

Arbor-OTC™

INJECTABLE TREE ANTIBIOTIC

ACTIVE INGREDIENT:

Oxytetracycline Hydrochloride*	39.60%
Other Ingredients	60.40%
Total	100.00%

* Equivalent to 36.7% oxytetracycline

DIRECTIONS FOR USE:

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. See inside for complete directions for use.

Arboriculture in Motion® is a registered trademark of Arborjet, Inc.
Arbor-OTC™ is a trademark of Arborjet, Inc.

82013

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ARBOR-OTC
(5 OZ)
040-7505

APPLICATION METHODS:

Arbor-OTC™ is designed for use with Arborjet Tree Injection Systems. It may be used with other injection devices that meet the application and label requirements. Arbor-OTC can be used with a variety of root flare and/or trunk injection devices. For all injection devices, read carefully and follow all manufacturer use directions.

STORAGE AND DISPOSAL:

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

Pesticide Storage: Keep tightly closed and sealed. Product is moisture, temperature and light sensitive. Product is hygroscopic so protect from moisture. Store in a cool (<77°F, 25°C), dry place away from heat and open flames with minimum exposure to the atmosphere. Avoid extremes in temperature. If the injection device does not completely empty within a few hours, depressurize the device and remove from the tree in an inverted position to avoid the solution leaking.

See inside for complete storage and disposal.

EPA Reg No. 74578-7 • EPA Est. No. 74578 - MA-001

Manufactured by:
ARBORJET, Inc.
99 Blueberry Hill Road,
Woburn, MA 01801
781-935-9070

ARBORjet®
Revolutionary Plant Health Solutions

PEEL HERE

FIRST AID
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 a 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 a doctor for future treatment advice.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may contact the American Association of Poison Control Centers at 1-800-222-1222 for emergency medical treatment information.

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING: Causes substantial but temporary eye injury. Harmful if inhaled. Avoid breathing dust. Do not get in eyes or on clothing. Wear protective eyewear (goggles, facemask or safety glasses). Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

Personal Protective Equipment (PPE)

Some materials that are chemical resistant to this product are listed below. If you want more options, follow the instructions for Category A on an EPA chemical resistant category selection chart.

Applicators and other handlers must wear:

- Long sleeved shirt
- Long pants
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

User Safety Requirements

- Follow 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 must:

- 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/PPE.

- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

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 cleaning equipment or disposing of equipment wash water or rinsate.

DIRECTIONS FOR USE

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

RESTRICTIONS

This product contains the antibiotic oxytetracycline. To reduce the development of drug-resistant bacteria and maintain the effectiveness of this and other antibacterial products, this product should be used only to treat or prevent infections that are proven or strongly suspected to be caused by bacteria.

This material is not to be used for medical or veterinary purposes.

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 apply to uses 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. 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, wear:

- Coveralls over long-sleeved shirts and long pants
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks
- Protective eyewear

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. Do not apply this product through any type of irrigation system. To be used on non-crop bearing ornamentals only. Fruit and nuts from treated trees are not for consumption.

APPLICATION METHODS

Arbor-OTC is designed for use with Arborjet Tree Injection Systems. It may be used with other injection devices that meet the application and label requirements. Arbor-OTC can be used with a variety of root flare and/or trunk injection devices. For all injection devices, read carefully and follow all manufacturer use directions. Most injection devices may require several minutes or more to empty into tree, however, some may take longer to empty depending on the health of the treated tree and local weather conditions. Do not leave the injection devices unattended. Do not leave empty injection devices on trees. Promptly and safely remove them according to manufacturer's directions. Follow the manufacturer's directions for proper cleaning and storage of the injection device.

APPLICATION METHOD

For treatment of Bacterial Leaf Scorch, Fire Blight and Ash Yellows using the Arborjet Injection System

Apply once per growing season in spring after leaves have fully developed. Scorch symptoms are suppressed only during the growing season in which treatment is administered. Re-treatment is required during each growing season for continued suppression.

MIXING INSTRUCTIONS

1 tsp. (5cc) of this product = 2.8 grams (0.1 oz)

Quantity of Arbor-OTC	Amount of Water to Add	Yield of Mixed Solution	Approximate DBH inches of Tree Treated
140 grams (5.0 oz)	1250 mL	1320 mL	500 inches
28 grams (1.0 oz)	250 mL	264 mL	100 inches
2.8 grams (0.1 oz)	25 mL	26.4 mL	10 inches
1.4 grams (0.05 oz)	12.5 mL	13.2 mL	5 inches

1. Measure the tree diameter at breast height (DBH) to determine the dose that is needed.
2. Add quantity of Arbor-OTC from first column into the delivery bottle, add purified water per Mixing Instructions. Alternatively, add 250 milliliters of purified water into the

28g container of Arbor-OTC and use to treat 100 DBH inches of trees.

3. Replace lid and shake vigorously for several minutes until powder is completely dissolved.

INJECTION INTO TREES

To determine the application/dose rate per tree:

1) Measure the tree diameter in inches at chest height (4½ feet from ground) to find the Diameter at Breast Height (DBH). (If measuring tree circumference, divide circumference by 3 to obtain the DBH in inches.)
2) Calculate the number of injection sites by dividing the DBH in inches by 2.
3) Divide the total dose by the number of injection sites to determine required dosage per injection site.

Example: For a tree with a DBH of 10 inches (or circumference of 30 inches):

1) DBH = 10" (circumference 30" ÷ 3 = 10").
2) Divide DBH of 10" by 2 = 5 injection sites.
3) Divide 26.4 mL by 5 injection sites = 5.28 mL per injection site.

Using the STINGER Tip

Use a 7/32" diameter drill bit. Push STINGER needle into hole and twist right for a snug fit, start application, and remove the STINGER needle upon completion. The STINGER Method requires no Arborplugs®. Clean and disinfect needles between trees.

Using Arborplug®

Use the 9/32" drill bit for the #3 Arborplug and the 3/8" drill bit for the #4 Arborplug. Drill bits should be clean and sharp. Insert the Arborplug, countersink to the thickness of the bark using the set tool and hammer. Inject by inserting the VIPER needle, start application, and remove the VIPER needle upon completion. The Arborplug will remain in the tree.

FUTURE INJECTIONS IN THE SAME TREE

Future injections in the same tree are applied into new holes placed intermediate to the old injection sites. Drill new sites either above or below (by 2" vertically) to the old sites and 2 to 3" horizontally from them. Applied correctly, this will form a triangular pattern with the old sites.

APPLICATION IN PALM TREES

Phytoplasma Disease (Lethal Yellowing and Texas Phoenix Palm Decline) in Palms using the Arborjet Injection System

Apply to Palms 3-4 times annually for continuous protection from Phytoplasma Disease. For suppression of symptoms in a symptomatic palm use up to 3 times the amounts described in the table under Application Instructions. Once symptoms subside return to a preventative dosing schedule.

MIXING INSTRUCTIONS

1 tsp. (5cc) of this product = 2.8 grams (0.1 oz)

Quantity of Arbor-OTC	Amount of Water to Add	Yield of Mixed Solution	Approximate Number of Palms treated
140 grams (5.0 oz)	1250 mL	1320 mL	50
28 grams (1.0 oz)	250 mL	264 mL	10
5.6g (0.2 oz.)	50 mL	52.8 mL	2
2.8 grams (0.1 oz)	25 mL	26.4 mL	1

1. Determine total number of doses desired for project or container size.
2. Add quantity of Arbor-OTC from first column into the delivery bottle, add purified water per Mixing Instructions. Alternatively, add 250 milliliters of purified water into the 28g container of Arbor-OTC and use to treat 10 palms.
3. Replace lid and shake vigorously for several minutes until powder is completely dissolved.

APPLICATION INSTRUCTIONS

Due to the nature of Palms' vascular system only one injection site is needed per palm per application.

Small Palm	Average Palm	Large Palm
< 6' Clear Trunk	6' –15' Clear Trunk	>15' Clear Trunk
16 mL of Solution	~26 mL of Solution	35 mL of Solution

Trunk diameter should be taken into consideration. A small trunk diameter can reduce by one category the dose required and a large trunk diameter can increase by one category the dose required.

Treating Palms

Inject into the trunk into lignified (hardened, woody) tissues typically within 2-3 ft. of the soil. Drill into the stem 4" as instructed below. Inject through the Arborplug. Only one injection site is needed.

Using the STINGER Tip for Palms

Use a 7/32" diameter drill bit. Push STINGER needle into hole and twist right for a snug fit, start application, and remove the STINGER needle upon completion. The STINGER Method requires no Arborplugs®. Clean and disinfect needles between trees.

Using Arborplugs® for Palms

Use the 9/32" drill bit for the #3 Arborplug and the 3/8" drill bit for the #4 Arborplug. Drill bits should be clean and sharp. Insert the Arborplug using the set tool and hammer. Inject by inserting the VIPER needle, start application, and remove the VIPER needle upon completion. The Arborplug will remain in the tree.

ADDITIONAL INJECTIONS IN A SINGLE PALM

Additional injections can use the same hole as long as new tissue is accessed deeper in the hole. For additional injections:

Arborplug

Remove the plug and use a 3/16 drill bit and drill 1/2 inch deeper.

Drill the Arborplug hole 1/2 inch deeper and replace it with a new Arborplug*.

Inject prescribed dose as instructed above using Arborplug.

Stinger Tip

Use 3/16 inch drill to drill hole ½ inch deeper.

Inject prescribed dose as outlined above for Stinger Tip.

*Note: If you originally used the # 3 Arborplug, for re-treatment we recommend replacing with a # 4 Arborplug to more easily make the application using the original injection site.

ARBOR-OTC CAN BE USED TO TREAT THE FOLLOWING BACTERIAL DISEASES IN THE FOLLOWING TREES [NON-CROP-BEARING ORNAMENTALS ONLY]:

DISEASE	TYPE OF TREE
Ash Yellows	Ash
Bacterial Blast*	Apple, Pear
Bacterial Blight*	Flowering Crabapple, Hawthorn, Lilac, Walnut
Bacterial Canker*	Hickory, Horsechestnut, Maple, Mimosa, Oak, Persian Walnut
Bacterial Leaf Scorch	Elm, Gum, Oak, Oleander, Sycamore
Blossom Blast*	Citrus, Grapefruit, Lime, Tea rose, Walnut
Blossom Blight and Canker*	Almond, Apricot, Cherry, Peach, Pear, Plum
Bunch Disease*	Butternut, Pecan, Walnut

Crown Gall*	Flowering Quince, Quince
Decline*	Peach, Pear, Nectarine
Fire Blight	Apple, Apricot, Cherry, Chokecherry, Cliff rose, Cotoneaster, Crabapple, Creambush, Firethorn, Flowering Quince, Hawthorn, Indian Hawthorn, Loquat, Mountain Ash, Ninebark, Pear, Pearlbush, Photinia, Plum, Quince, Rose, Serviceberry
Fruit Spot*	Avocado
Leaf and Shoot Blight*	Mock Orange
Leaf Blight and Brown Rot*	Mandarin Orange
Leaf Spot*	Basswood, Hibiscus, Magnolia
Lethal Decline*	Basswood, Hibiscus, Magnolia
Phloem Necrosis	Elm

Phytoplasma Disease	Palms
Stem Canker*	Poplar
Stubborn Disease*	Citrus
Tip Dieback*	Maple
Vascular Yellows	Ash, Elm
Wetwood / Slime Flux*	Apple, Cherry, Elm, Hickory, Maple, Oak, Peach, Pear, Plum, Poplar, Walnut
Witches' Broom (caused by mycoplasma-like organisms)*	Apple, Ash, Dogwood, Elm, Lilac, Locust, Peach, Sassafras
X-Disease*	Cherry, Chokecherry, Nectarine, Peach, Plum

* Not for use in California

STORAGE AND DISPOSAL

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

Pesticide Storage: Keep tightly closed and sealed. Product is moisture, temperature and light sensitive. Product is hygroscopic so protect from moisture. Store in a cool (<77°F, 25°C), dry place away from heat and open flames with minimum exposure to the atmosphere. Avoid extremes in temperature. If the injection device does not completely empty within a few hours, depressurize the device and remove from the tree in an inverted position to avoid the solution leaking.

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

Container Handling: Non-refillable container. Do not reuse or refill this container. Triple rinse the container to remove any leftover residue from the container. Offer for recycling if available or dispose of in a sanitary landfill or by incineration or if allowed by state and local authorities, by burning. If burned, stay out of smoke. Offer for recycling if available. If not, discard in sanitary landfill.

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. Tree injury, ineffectiveness or other unintended consequence may result because of such factors as manner of use or application, weather or tree conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of ARBORJET, INC. or Seller. To the extent consistent with applicable law, all such risks shall be assumed by Buyer and User, and Buyer and User agree to hold ARBORJET, INC. and Seller harmless for any claims relating to such factors.

ARBORJET, 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. This warranty does not extend to the use of the product contrary to label instructions, and Buyer and User assume the risk of any such use. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, ARBORJET, INC. MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY

OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

ARBORJET, INC.
To the fullest extent permitted by applicable law, ARBORJET, INC. or Seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABLITY 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 ARBORJET, INC. OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

ARBORJET, INC. and Seller offer this product, 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 ARBORJET, INC.

ARBORJET, INC.
99 Blueberry Hill Rd.
Woburn, MA. 01801

NOTES

Arbor-OTC

74578-7

INSERT

Arbor-OTC™

INJECTABLE TREE ANTIBIOTIC

Arbor-OTC™ is a systemic water soluble injectable antibiotic for the control of certain bacterial diseases in non-food bearing palms including Phytoplasma Disease (Lethal Yellowing and Texas Phoenix Palm Decline). Arbor-OTC is a systemic water soluble injectable antibiotic for the control of certain bacterial diseases in non-food bearing trees including Bacterial Leaf Scorch.

ACTIVE INGREDIENT:
Oxytetracycline Hydrochloride*.....39.60%
Other Ingredients.....60.40%
Total.....100.00%
* Equivalent to 36.7% oxytetracycline
EPA Reg No. 74578-7 • EPA Est. No. 74578 - MA-001
Net Contents: 5.0 oz. (140g)

KEEP OUT OF REACH OF CHILDREN
WARNING

Manufactured by: ARBORJET, Inc., 99 Blueberry Hill Road, Woburn, MA 01801 781-935-9070

FIRST AID

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 a 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 a doctor for future treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may contact the American Association of Poison Control Centers at 1-800-222-1222 for emergency medical treatment information.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS
WARNING: Causes substantial but temporary eye injury. Harmful if inhaled. Avoid breathing dust. Do not get in eyes or on clothing. Wear protective eyewear (goggles, facemask or safety glasses). Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

PERSONAL PROTECTIVE EQUIPMENT (PPE):
Some materials that are chemical resistant to this product are listed below. If you want more options, follow the instructions for Category A on an EPA chemical resistant category selection chart.

Applicators and other handlers must wear:

- Long sleeved shirt
- Long pants
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

User Safety Requirements

- Follow 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 must:

- 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/PPE.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS:
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 cleaning equipment or disposing of equipment wash water or rinsate.

DIRECTIONS FOR USE

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

RESTRICTIONS

This product contains the antibiotic oxytetracycline. To reduce the development of drug resistant bacteria and maintain the effectiveness of this and other antibacterial products, this product should be used only to treat or prevent infections that are proven or strongly suspected to be caused by bacteria.

This material is not to be used for medical or veterinary purposes.

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. Do not apply this product through any type of irrigation system. To be used on non-crop bearing ornamentals only. Fruit and nuts from treated trees are not for consumption.

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 apply to uses 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.

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, wear:

- Coveralls over long-sleeved shirts and long pants
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks
- Protective eyewear

APPLICATION METHODS

Arbor-OTC is designed for use with Arborjet Tree Injection Systems. It may be used with other injection devices that meet the application and label requirements. Arbor-OTC can be used with a variety of root flare and/or trunk injection devices. For all injection devices, read carefully and follow all manufacturer use directions. Most injection devices may require several minutes or more to empty into tree, however, some may take longer to empty depending on the health of the treated tree and local weather conditions. Do not leave the injection devices unattended. Do not leave empty injection devices on trees. Promptly and safely remove them according to manufacturer's directions. Follow the manufacturer's directions for proper cleaning and storage of the injection device.

APPLICATION METHOD
For treatment of Bacterial Leaf Scorch, Fire Blight and Ash Yellows using the Arborjet Injection System

Apply once per growing season in spring after leaves have fully developed. Scorch symptoms are suppressed only during the growing season in which treatment is administered. Re-treatment is required during each growing season for continued suppression.

MIXING INSTRUCTIONS

1 tsp. (5cc) of this product = 2.8 grams (0.1 oz)

Quantity of Arbor-OTC	Amount of Water to Add	Yield of Mixed Solution	Approximate DBH inches of Tree Treated
140 grams (5.0 oz)	1250 mL	1320 mL	500 inches
28 grams (1.0 oz)	250 mL	264 mL	100 inches
2.8 grams (0.1 oz)	25 mL	26.4 mL	10 inches
1.4 grams (0.05 oz)	12.5 mL	13.2 mL	5 inches

1. Measure the tree diameter at breast height (DBH) to determine the dose that is needed.
2. Add quantity of Arbor-OTC from first column into the delivery bottle, add purified water per Mixing Instructions. Alternatively, add 250 milliliters of purified water into the 28g container of Arbor-OTC and use to treat 100 DBH inches of trees.
3. Replace lid and shake vigorously for several minutes until powder is completely dissolved.

INJECTION INTO TREES

To determine the application/dose rate per tree:

1) Measure the tree diameter in inches at chest height (4½ feet from ground) to find the Diameter at Breast Height (DBH). (If measuring tree circumference, divide circumference by 3 to obtain the DBH in inches.)
2) Calculate the number of injection sites by dividing the DBH in inches by 2.
3) Divide the total dose by the number of injection sites to determine required dosage per injection site.

Example: For a tree with a DBH of 10 inches (or circumference of 30 inches):

1) DBH = 10" (circumference 30" ÷ 3 = 10").
2) Divide DBH of 10" by 2 = 5 injection sites.
3) Divide 26.4 mL by 5 injection sites = 5.28 mL per injection site.

Using the STINGER Tip

Use a 7/32" diameter drill bit. Push STINGER needle into hole and twist right for a snug fit, start application, and remove the STINGER needle upon completion. The STINGER Method requires no Arborplugs®. Clean and disinfect needles between trees.

Using Arborplug®

Use the 9/32" drill bit for the #3 Arborplug and the 3/8" drill bit for the #4 Arborplug. Drill bits should be clean and sharp. Insert the Arborplug, countersink to the thickness of the bark using the set tool and hammer. Inject by inserting the VIPER needle, start application, and remove the VIPER needle upon completion. The Arborplug will remain in the tree.

FUTURE INJECTIONS IN THE SAME TREE
Future injections in the same tree are applied into new holes placed intermediate to the old injection sites. Drill new sites either above or below (by 2" vertically) to the old sites and 2 to 3" horizontally from them. Applied correctly, this will form a triangular pattern with the old sites.

Department of Agriculture
STATE OF HAWAII

LICENSED

PERIOD 2013-2015 LIC. NO. 8343.6

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APPLICATION IN PALM TREES

Phytoplasma Disease (Lethal Yellowing and Texas Phoenix Palm Decline) in Palms using the Arborjet Injection System

Apply to Palms 3-4 times annually for continuous protection from Phytoplasma Disease. For suppression of symptoms in a symptomatic palm use up to 3 times the amounts described in the table under Application Instructions. Once symptoms subside return to a preventative dosing schedule.

MIXING INSTRUCTIONS

1 tsp. (5cc) of this product = 2.8 grams (0.1 oz)

Quantity of Arbor-OTC	Amount of Water to Add	Yield of Mixed Solution	Approximate Number of Palms treated
140 grams (5.0 oz)	1250 mL	1320 mL	50
28 grams (1.0 oz)	250 mL	264 mL	10
5.6g (0.2 oz.)	50 mL	52.8 mL	2
2.8 grams (0.1 oz)	25 mL	26.4 mL	1

1. Determine total number of doses desired for project or container size.
2. Add quantity of Arbor-OTC from first column into the delivery bottle, add purified water per Mixing Instructions. Alternatively, add 250 milliliters of purified water into the 28g container of Arbor-OTC and use to treat 10 palms.
3. Replace lid and shake vigorously for several minutes until powder is completely dissolved.

APPLICATION INSTRUCTIONS

Due to the nature of Palms' vascular system only one injection site is needed per palm per application.

Small Palm	Average Palm	Large Palm
< 6' Clear Trunk	6' –15' Clear Trunk	>15' Clear Trunk
16 mL of Solution	~26 mL of Solution	35 mL of Solution

Trunk diameter should be taken into consideration. A small trunk diameter can reduce by one category the dose required and a large trunk diameter can increase by one category the dose required.

Treating Palms

Inject into the trunk into lignified (hardened, woody) tissues typically within 2-3 ft. of the soil. Drill into the stem 4" as instructed below. Inject through the Arborplug. Only one injection site is needed.

Using the STINGER Tip for Palms

Use a 7/32" diameter drill bit. Push STINGER needle into hole and twist right for a snug fit, start application, and remove the STINGER needle upon completion. The STINGER Method requires no Arborplugs®. Clean and disinfect needles between trees.

Using Arborplugs® for Palms

Use the 9/32" drill bit for the #3 Arborplug and the 3/8" drill bit for the #4 Arborplug. Drill bits should be clean and sharp. Insert the Arborplug using the set tool and hammer. Inject by inserting the VIPER needle, start application, and remove the VIPER needle upon completion. The Arborplug will remain in the tree.

ADDITIONAL INJECTIONS IN A SINGLE PALM

Additional injections can use the same hole as long as new tissue is accessed deeper in the hole. For additional injections:

Arborplug

Remove the plug and use a 3/16 drill bit and drill 1/2 inch deeper.

Drill the Arborplug hole 1/2 inch deeper and replace it with a new Arborplug*.

Inject prescribed dose as instructed above using Arborplug.

Stinger Tip

Use 3/16 inch drill to drill hole ½ inch deeper.

Inject prescribed dose as outlined above for Stinger Tip.

*Note: If you originally used the # 3 Arborplug, for re-treatment we recommend replacing with a # 4 Arborplug to more easily make the application using the original injection site.

ARBOR-OTC CAN BE USED TO TREAT THE FOLLOWING BACTERIAL DISEASES IN THE FOLLOWING TREES [NON-CROP BEARING ORNAMENTALS ONLY]:

DISEASE	TYPE OF TREE
Ash Yellows	Ash
Bacterial Blast*	Apple, Pear
Bacterial Blight*	Flowering Crabapple, Hawthorn, Lilac, Walnut
Bacterial Canker*	Hickory, Horsechestnut, Maple, Mimosa, Oak, Persian Walnut
Bacterial Leaf Scorch	Elm, Gum, Oak, Oleander, Sycamore
Blossom Blast*	Citrus, Grapefruit, Lime, Tea rose, Walnut
Blossom Blight and Canker*	Almond, Apricot, Cherry, Peach, Pear, Plum
Bunch Disease*	Butternut, Pecan, Walnut
Crown Gall*	Flowering Quince, Quince
Decline*	Peach, Pear, Nectarine
Fire Blight	Apple, Apricot, Cherry, Chokecherry, Cliff rose, Cotoneaster, Crabapple, Creambush, Firethorn, Flowering Quince, Hawthorn, Indian Hawthorn, Loquat, Mountain Ash, Ninebark, Pear, Pearlbush, Photinia, Plum, Quince, Rose, Serviceberry
Fruit Spot*	Avocado
Leaf and Shoot Blight*	Mock Orange
Leaf Blight and Brown Rot*	Mandarin Orange
Leaf Spot*	Basswood, Hibiscus, Magnolia
Lethal Decline*	Basswood, Hibiscus, Magnolia
Phloem Necrosis	Elm
Phytoplasma Disease	Palms
Stem Canker*	Poplar
Stubborn Disease*	Citrus
Tip Dieback*	Maple
Vascular Yellows	Ash, Elm
Wetwood / Slime Flux*	Apple, Cherry, Elm, Hickory, Maple, Oak, Peach, Pear, Plum, Poplar, Walnut
Witches' Broom (caused by mycoplasma-like organisms)*	Apple, Ash, Dogwood, Elm, Lilac, Locust, Peach, Sassafras
X-Disease*	Cherry, Chokecherry, Nectarine, Peach, Plum

*Not for use in California

STORAGE AND DISPOSAL

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

Pesticide Storage: Keep tightly closed and sealed. Product is moisture, temperature and light sensitive. Product is hygroscopic so protect from moisture. Store in a cool (<77°F, 25°C), dry place away from heat and open flames with minimum exposure to the atmosphere. Avoid extremes in temperature. If the injection device does not completely empty within a few hours, depressurize the device and remove from the tree in an inverted position to avoid the solution leaking.

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

Container Handling: Non-refillable container. Do not reuse or refill this container. Triple rinse the container to remove any leftover residue from the container. Offer for recycling if available or dispose of in a sanitary landfill or by incineration or if allowed by state and local authorities, by burning. If burned, stay out of smoke. Offer for recycling if available. If not, discard in sanitary landfill.

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