

Note: Many nursery plants may require a longer certification than 24 months. When a plant is “potted up” into a larger container, the grower can use potting media with newly incorporated granular insecticide to surround and augment “old” media, therefore extending the certification period. For example, if a grower started a plant in a 1 gallon container on 3/1/10 with 12 ppm bifenthrin in the media, this plant now is certified for 12 months. On 2/28/11 (1 year later), the grower moves the plant into a 3-gallon container, and the potting media added to fill the container has been treated with 15 ppm bifenthrin. This plant may now be certified for an additional 24 months or until 2/28/13 (or for 24 months after the potting media was treated with the granular bifenthrin). This example illustrates the importance of recordkeeping to ensure the grower can verify certification of plants that have been repotted several times.



If the treatment in a container has “expired” (the certification period has been exceeded), there are two options:

1. Treat with an approved drench treatment, wait the REI period, then pot up as usual with media treated with granular insecticide for the certification period you desire.
2. Pot up the plant in non-treated media, and immediately drench the larger container with an approved drench treatment. This plant will then have the drench certification period (up to 6 months with a bifenthrin drench) before it will require an additional drench or another potting up with media treated with granular insecticide for the certification period you desire.

Federal IFA-Free Nursery Program for Plants in Containers

This IFA-Free Nursery Program is not mandatory for movement of nursery stock. Certification may be granted on the basis of other treatments listed on pages 6–10 of this document.

The IFA-Free Nursery Program is designed to keep nurseries free of IFA and provides a basis to certify containerized nursery stock on a continuous basis. The program has detection, control, exclusion, and enforcement components that, in combination, provide maximum control of IFA. This program is available for growers who wish to include the entire property in their IFA treatment program and thus be able to ship container stock on a continuous basis. Participating establishments must operate under a compliance agreement. Few nurseries participate in this program, but it is available for use. Please contact your State inspector to discuss whether this program is right for your nursery. Specific details may be found in the *Code of Federal Regulations* (7 CFR 301.81–11: Imported fire ant detection, control, exclusion, and enforcement program for nurseries producing containerized plants). This regulation is updated annually, so please go to the USDA, APHIS link to the current *Code of Federal Regulations* information: www.aphis.usda.gov/plant_health/plant_pest_info/fireants/index.shtml

Nursery Stock—Field-Grown and Balled-and-Burlapped (B&B) Stock

There are three methods for treating field grown nursery stock, and different pesticides are approved for use in these methods—two post-harvest and one pre-harvest:

- Post-harvest B&B treatments
 - ◆ Immersion/Dip—bifenthrin and chlorpyrifos
 - ◆ Drench—chlorpyrifos
- Pre-harvest in field treatment—broadcast bait plus broadcast contact insecticide (chlorpyrifos)



Method 1—Immersion or Dip Treatment for Balled-and-Burlapped (B&B) Plants

Two insecticides are approved for this use pattern:

- Bifenthrin
- Chlorpyrifos

Equipment—An open-top, watertight immersion tank sufficiently large to accommodate the treating solution and plants will be needed. Drain plugs and valves will facilitate drainage after treatment. Use all personal protection equipment as required on the insecticide label and State and Federal laws. *Important: Do not allow runoff from the treatment area.*

Step 1—Choose an appropriate site.

- Locate the immersion tank in a well-ventilated place. The location should be covered if possible.

Step 2—Choose immersion tank.

- Choose an appropriate sized immersion tank that will allow complete submersion of the root/soil portion of the plant.
- Allow room for displacement of liquid solution as the root ball is immersed so that no treatment liquid over-runs the top of the tank.

Step 3—Immerse the plants.

- Do not remove burlap before immersion.
- Immerse the root balls, singly or in groups, so that the root ball is completely covered by the insecticidal solution.
- Allow the plants to remain in the solution until bubbling ceases. Thorough saturation of the root ball with the insecticide solution is essential.

Step 4—Remove the plants from the dip.

- After removal from the dip, set the plants on a drainboard until adequately drained.

Step 5—Maintain appropriate level of treating mixture.

- As treating progresses, add freshly prepared insecticide mixture to maintain the liquid at immersion depth.

Step 6—Dispose of solution.

- Dispose of tank contents 8 hours after mixing. Disposal must comply with label instructions, as well as, State and local regulations.

Pesticides Approved, Dose Rates and Certification Periods for Immersion of Balled-and-Burlapped Plants

Pesticide	Formulation	Dose Rate Lb ai/100 gal H ₂ O	Certification Period
Chlorpyrifos*	EC	0.125 lb ai	30 days
Bifenthrin*	EC or F	0.115 lb ai	180 days
		0.05 lb ai	120 days
		0.025 lb ai	60 days

* use labels with use pattern listed on label

Exposure period—plants are certifiable upon completion of treatment (follow reentry interval [REI] instructions on label).

Caution: Environmental factors significantly affect phytotoxicity. It is recommended that a small group of plants be treated at the appropriate rate under the anticipated growing conditions and observed for phytotoxic symptoms for at least 7 days before a large number of plants are treated. Dwarf yaupon, some varieties of azaleas, camellias, poinsettias, rose bushes, and variegated ivy may show phytotoxicity to chlorpyrifos.

Method 2—Drench Treatment for B&B Plants

One insecticide is approved for this use pattern:

- Chlorpyrifos

Equipment—A large-capacity bulk mixing tank, either pressurized or gravity flow, for mixing and holding the insecticide solution. Properly equipped hoses and watering nozzles that can be attached to the mixing tank and used to thoroughly saturate the root ball with the insecticide solution. Use all personal protection equipment as required by the insecticide label and State or Federal laws.



Step 1—Select a site for the treatment.

- Move the plants to a well-ventilated place normally used to maintain plants prior to shipment.
- Choose an appropriate site with regard to potential runoff and ventilation.

Step 2—Determine amount of treating solution per root ball, total amount of treating solution required and calibrate equipment.

- The total volume of the treating solution must be 1/5 (20 percent) the volume of the root ball.
- Volume formula for Cone = $\pi (R^2 + rR + r^2) h / 3$ where R = Radius of top of cone, r = radius of bottom of cone, h = cone height, pi = 3.14.
 - ◆ *Example.* If you have a 25" root ball (top diameter) with a bottom diameter of ca. 10" and a height of ca. 12", the volume of the root ball is ca. 3061.5 cu inches or ca. 13.3 gal (using online conversion page). Remember: radius is 1/2 diameter.
 - ◆ 1/5 of 13.3 gal is ca. 2.6 gal treatment solution to be used over the course of the 2 drench applications (or ca. 1.3 gal per drench application).
 - ◆ Your State inspector or an extension agent can assist you with this calculation.
- For many, calibrating is determined by how long (number of seconds) it takes for equipment to apply 1.3 gal solution if treating all 25" root balls.

Step 3—Apply the treatment—UPDATED JANUARY 2015.

- The treatment will be enhanced by adding any agricultural wetting agent or surfactant.
- Do not remove burlap wrap from plants prior to treatment .
- Treat plants with the insecticide solution twice in one day.
- Apply one-half the total drench solution, wait at least 30 minutes, then rotate the root ball and apply the second one-half drench solution.
- Rotating or flipping the root ball between drench applications is required to insure all sides of the root ball are sufficiently treated.

Step 4—Dispose of solution.

- Dispose of tank contents 8 hours after mixing. Disposal must comply with label instructions, as well as, State and local regulations.

Pesticides Approved, Dose Rates and Certification Periods for Drench of Balled-and-Burlapped Plants

Pesticide	Formulation	Amt formulation/ 100 gal H ₂ O	Dose Rate Lb ai/100 gal H ₂ O	Certification Period
Chlorpyrifos*	4EC	4 fl oz	0.125 lb ai	30 days
	2EC	8 fl oz	0.125 lb ai	30 days

* use labels with use pattern listed on label

Exposure period—plants are certifiable upon completion of treatment (follow reentry interval [REI] instructions on label).

Method 3 – In field treatment of Field-Grown Plants (Pre-Harvest)

Several bait products and one contact insecticide are approved for this use pattern:

- Baits—UPDATED JNAUARY 2015
 - ◆ Abamectin
 - ◆ Fenoxycarb
 - ◆ Hydramethylnon
 - ◆ Chlorpyrifos granular
 - ◆ Metaflumizone
 - ◆ Methoprene
 - ◆ Pyriproxyfen
- Contact insecticide



Note: An online search conducted in March 2013 did not produce any chlorpyrifos labels with this use pattern and rate of application.

This in-field treatment is based on a sequential application of an approved bait followed by a broadcast application of a contact insecticide. The combination treatment is necessary since broadcast application of chlorpyrifos (or other short-term residual insecticides) usually does not eliminate large, mature IFA colonies, and baits are not capable of providing a residual barrier against reinfestation by new queens. Therefore, the approved bait application will drastically reduce the IFA population, while the contact insecticide (chlorpyrifos), applied approximately 5 days later, will destroy any remaining weakened colonies and also leave a residual barrier against reinfestation by newly mated queens for a period of time (certification period).

Pesticides Approved, Dose Rates, Exposure Periods, and Certification Periods for Infield Treatment of Field Grown Plants

Apply bait	3-5 days later apply contact	Exposure Period	Certification Period
Approved bait @ 1-1.5 lb ai/acre	Chlorpyrifos G @ 6 lb ai/acre	30 days after contact application	12 weeks after exposure period
	2 nd chlorpyrifos application at 6 lb ai/acre at end of original certification period		12 weeks additional certification

Note: Treatment area must extend at least 10 feet beyond the base of all plants that are to be certified.

Apply the bait with any granular applicator capable of applying labeled rates of 1–1.5 lb bait per acre. Baits should be applied when ants are actively foraging, usually when air temperatures are between 65–90 °F. To determine if ants are active, place a food lure such as slices of hotdogs or potato chips in the area you plan to treat, wait ca. 30–45 minutes, and check the food lure for ants. Most seed or fertilizer granular applicators cannot be accurately calibrated to this low rate. A Herd® GT-77 Granular Applicator (Kasco Manufacturing; Shelbyville, IN) is frequently used in conjunction with all-terrain vehicles or farm tractors to apply IFA baits.