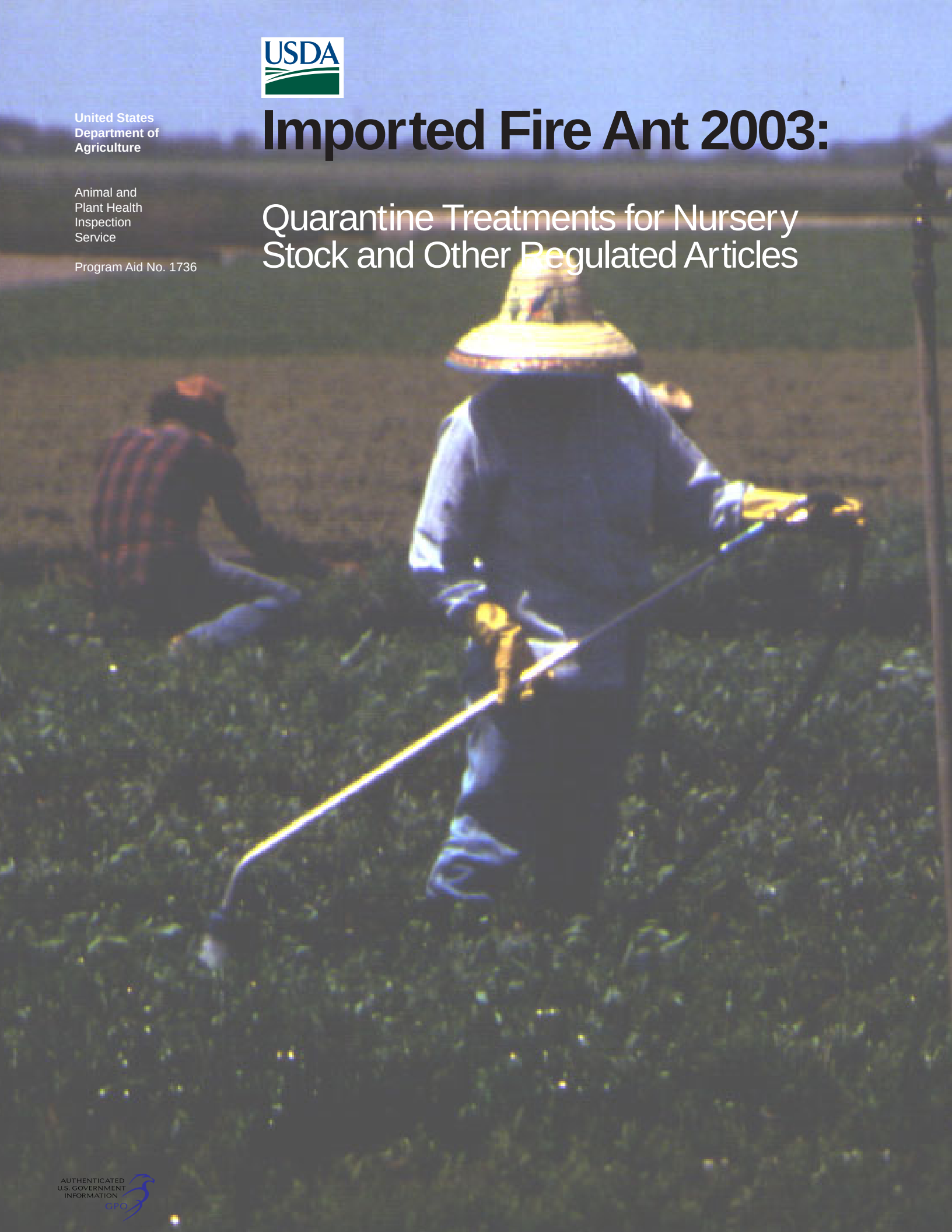

United States Department of Agriculture

Animal and Plant Health Inspection Service

Program Aid No. 1736

Imported Fire Ant 2003:

Quarantine Treatments for Nursery Stock and Other Regulated Articles

AUTHENTICATED U.S. GOVERNMENT INFORMATION GPO

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This publication reports research involving pesticides. All uses of pesticides must be registered by appropriate State and/or Federal agencies before they can be recommended.

CAUTION: Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or other wildlife—if they are not handled or applied properly. Use all pesticides selectively and carefully. Follow recommended practices for the disposal of surplus pesticides and pesticide containers.

Issued March 2003

This publication supersedes "Imported Fire Ant: Quarantine Treatments for Nursery Stock and Other Regulated Articles," Program Aid No. 1653, issued June 1999.

Credits: All pictures were taken by APHIS photographer Homer Collins, who was also the author of Program Aid 1653. This publication—written by Anne-Marie Callcott of APHIS' Plant Protection and Quarantine, Center for Plant Health Science and Technology in Gulfport, MS—updates the 1999 document.

This Program Aid is intended to supplement and clarify the Federal Imported Fire Ant Quarantine (Title 7, Code of Federal Regulations, Part 301.81), and the Imported Fire Ant Program Manual M301.81 (rev. August 1985), which is published by USDA's Animal and Plant Health Inspection Service, Plant Protection and Quarantine. Approved quarantine treatments are subject to change. Always consult with your State Plant regulatory agency before applying quarantine treatments.

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The Federal Fire Ant Quarantine

Provisions of the Federal Imported Fire Ant (IFA) Quarantine[1] were invoked May 6, 1958, in an effort to slow or prevent the artificial spread of imported fire ants *(Solenopsis invicta* Buren, *S. richteri* Forel, or their hybrids). IFAs are notorious hitchhikers and are readily transported long distances when articles such as soil, nursery stock, and other items are shipped outside the infested area. Figure 1 depicts the parts of the United States quarantined for IFA as of 2003.

The most recent IFA quarantine map is located at <http://www.aphis.usda.gov/ppq/maps/fireant.pdf>, and a hard copy can be obtained by calling your local APHIS State Plant Health Director. See page 19 for a complete listing of State regulatory officials and U.S. Department of Agriculture (USDA) State Plant Health Directors.

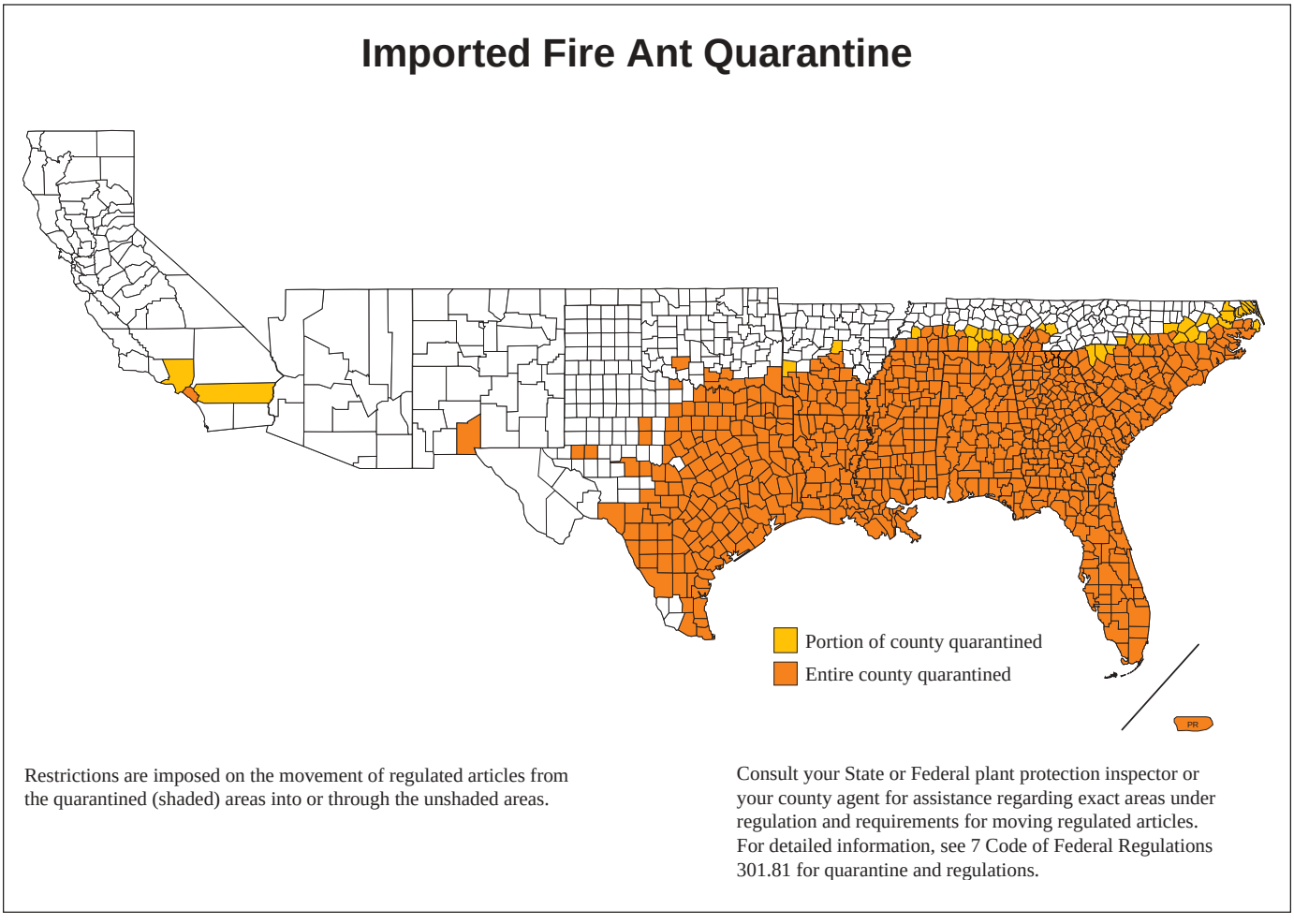

Figure 1—Imported Fire Ant Quarantine map, 2003.

[1]Quarantine 81, as amended (Title 7, Code of Federal Regulations [CFR], subpart 301.81).

List of Regulated Articles

The following regulated articles require a certificate or permit before they can be shipped outside the quarantined area:

1. Imported fire ant queens and reproducing colonies of imported fire ants.

2. Soil, separately or with other things, except soil samples shipped to approved laboratories (consult with a State or Federal inspector for a list of approved laboratories). Potting soil is exempt if commercially prepared, packaged, and shipped in original container.

3. Plants with roots and soil attached, except house plants maintained indoors and not for sale.

4. Grass sod (fig. 2).

5. Baled hay and straw that has been stored in contact with soil.

6. Used soil-moving equipment.

7. Any other products, articles, or means of conveyance of any character whatsoever not covered by the above, when it is determined by an inspector that they present a hazard of spread of the imported fire ant and the person in possession thereof has been so notified.

Certificates authorizing movement of regulated articles are issued by quarantine officials when certain approved procedures have been utilized to ensure that the regulated article(s) are free from imported fire ant infestation. See page 19 for a complete listing of State regulatory officials and U.S. Department of Agriculture (USDA) State Plant Health Directors.



Figure 2—Sod is frequently shipped from turfgrass farms inside the IFA quarantine area to places where fire ants have not yet become established. Regular field monitoring and a close look at each outgoing shipment can help reduce the likelihood of spreading fire ants to new areas.

Statutory Authorities Enabling Quarantine Action

Legislation enabling USDA to promulgate an IFA quarantine is part of the Plant Protection Act of June 2000 (7 United States Code [USC] 7701 et seq.).

Authorized Insecticides

Insecticides listed in this document have been registered under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA 7 USC § 135 et seq., 1972), as amended, or have been approved for use under an exemption (sections 18 or 24[c] of FIFRA). *Instructions, precautions, and directions for use on the pesticide label must be carefully followed.* As of March 2003, the following insecticides are authorized by USDA for the treatment of regulated articles under the IFA quarantine:

Common name	Trade name examples	Formulation(s)†
bifenthrin	Talstar®	G, F
chlorpyrifos	Dursban®, Chlorpyrifos	EC, W, G
diazinon	Diazinon/D-z-n®	WP, EC
fenoxycarb	Award®	Bait
fipronil	Chipco® Choice™; Chipco® Top Choice™	G
hydramethylnon	Amdro®Pro; Siege®Pro	Bait
methoprene††	Extinguish®	Bait
pyriproxyfen	Distance®	Bait
tefluthrin	Fireban®	G

†WP and W = wettable powder, EC = emulsifiable concentrate, G = granular, and F = flowable.

†† APHIS approval expected in 2003. Check with inspector prior to use.

Approved Treatments

Approved treatments for the various categories of regulated articles are contained in this section.

Used Earth-Moving Equipment

Methods—Used soil-moving equipment is eligible for movement when an inspector determines that one of the following procedures has been accomplished:

- Equipment has been brushed free of noncompacted soil.
- Equipment has been washed free of noncompacted soil.
- Noncompacted soil has been removed with air pressure using specialized high-pressure equipment (200 lb/in^2, 30 ft^3/min).

Certification Period—As long as kept free of noncompacted soil.

Limitations—Regardless of the type of cleaning equipment used, all debris and noncompacted soil must be removed unless the earth-moving equipment has been steam-heated by a "steam jenny" to disinfect it. Used soil-moving equipment, such as bulldozers, dirt pans, motor graders, and draglines, is difficult to clean sufficiently to eliminate pest risk.

Precautions—Steam may remove loose paint and usually is not recommended for use on equipment with conveyor belts or rubber parts.

Baled Hay and Straw

Both baled hay and straw stored in direct contact with the ground are ineligible for movement.

Greenhouse-Grown Plants

Greenhouse-grown plants are certifiable without insecticidal treatment if the inspector determines that the greenhouse is constructed of fiberglass, glass, or plastic in such a way that IFAs are physically excluded and cannot become established within the enclosure. Slat houses, shade houses, or open greenhouses do not qualify as physical barriers. Plants grown in these structures must be treated with an approved insecticide before they can be certified for movement.

Nursery Stock, Balled or in Containers

Method A, Immersion—

***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.

Locate the immersion tank in a well-ventilated place. The location should be covered if possible. Do not remove burlap wrap or plastic containers with drain holes prior to immersion. Immerse soil balls and containers, singly or in groups so that soil is completely covered by the insecticidal solution. Plants must remain in the solution until bubbling ceases. After removal from dipping tank, plants may be placed on a drain board until adequately drained. Thorough saturation of the plant balls or containers with the insecticide solution is essential.

As treating progresses, freshly prepared insecticide solution should be added to maintain liquid level at immersion depth. Dispose of tank contents within 8 hours after mixing to prevent pH hydrolysis if water is highly alkaline.

Precautions—Disposal *must* comply with all State and local regulations. Runoff of the solution from the treatment area should not be permitted. Excess solution (and used solution) must be disposed of in accordance with State and local regulations.

Pesticide—Emulsifiable chlorpyrifos (EC).

Dosage—

Chlorpyrifos formulation	Amount of formulation to prepare 100 gal treating solution
4 EC	4 fl oz (118 mL)
2 EC	8 fl oz (236 mL)

Exposure Period—Plants can be certified immediately upon completion of treatment.

Certification Period—30 days.

Precautions—Wear rubber gloves, boots, and apron during this operation.

Note: Environmental factors significantly affect phytotoxicity. It is recommended that a small group of plants be treated at the recommended 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 exhibit phytotoxicity.

Method B, Drenching—

Equipment—

1. A large-capacity bulk mixing tank, either pressurized or gravity flow, for mixing and holding the insecticide solution

2. Properly equipped hoses and watering nozzles that can be attached to the mixing tank and used to thoroughly saturate the plant balls or containers with the insecticide solution (fig. 3)

For Plants in Containers—

Procedure—Apply either a bifenthrin, chlorpyrifos, or diazinon solution to the point of saturation one time only. The volume of the treating solution must be at least 1/5 the volume of the container.



Figure 3—This nursery worker is drenching containerized plants.

Insecticides and Dosages—

Insecticide	Dosage
chlorpyrifos (4EC)	4 fl oz 4EC per 100 gal water
chlorpyrifos (2EC)	8 fl oz 2EC per 100 gal water
diazinon (AG-500 or 50WP)†	1 pint AG–500 or 1 lb 50WP per 100 gal water
bifenthrin (flowable)††	25 parts per million (p/m). See table below.

† Diazinon is registered under FIFRA, sec. 24(c), Special Local Needs, in some States. Check with your State regulatory official before using.

†† Dose rate for bifenthrin is 25 p/m based on dry weight bulk density of the potting media. See page 17 for instructions regarding bulk density determinations.

Potting media bulk density† (lb/yd^3)	Oz bifenthrin (Talstar Flowable)/ 100 gal water
200	2.4
400	4.8
600	7.2
800	9.6
1,000	12.0
1,200	14.4
1,400	16.8

† See page 17 for instructions regarding bulk density determinations.

Exposure Periods—Plants are certifiable immediately upon completion of the treatment.

Certification Periods—

Insecticide	Certification period
chlorpyrifos	30 days
diazinon	10 days
bifenthrin	180 days

For Balled and Burlapped (B&B) Plants—Apply a chlorpyrifos solution (see dosage below) as a substitute for plain water to the plants during the routine watering activities after harvest but prior to shipment. Do not remove burlap wrap from plants prior to treatment. Treat plants singly or in groups with the chlorpyrifos solution to the point of runoff on a twice daily schedule for 3 consecutive days.

This treatment should be carried out in a well-ventilated place normally used to maintain plants prior to shipment. The treatment location should be covered, if possible. The treatment will be enhanced by adding any agricultural wetting agent or surfactant to the chlorpyrifos solution.

Insecticide and Dosages—

Insecticide	Dosage
chlorpyrifos (4EC)	4 fl oz 4EC per 100 gal water
chlorpyrifos (2EC)	8 fl oz 2EC per 100 gal water

Certification Period—30 days.

Method C, Topical Application—

Procedure—Talstar Nursery Flowable is the only insecticide and formulation registered for topical application. The method is approved only for treatment of nursery stock in 3- and 4-quart containers. Prepare a mix with the appropriate amount of Talstar Flowable in 1,000 oz of water based on container size and bulk density of potting media as shown in the chart below. Then apply 1 fl oz of the mix to each container evenly distributed over the surface of the potting media. Irrigate all treated containers with 1.5 inches of water following application.

Insecticide and Dosage—

Potting media bulk density† (lb/yd^3)	Oz Talstar Flowable/1,000 fl oz water	
	For 3-qt pots	*For 4-qt pots*
200	3.6	5.2
400	7.2	10.4
600	10.8	15.6
800	14.4	20.8
1,000	18.0	26.0
1,200	21.6	31.2
1,400	25.2	36.4

† See page 17 for instructions regarding bulk density determinations.

Certification Period—180 days.

Method D, Incorporation of Granular Insecticides Into Potting Media in Which Containerized Plants Are Grown—

Procedure—Use soil-mixing equipment that will adequately mix and thoroughly blend the required dosage of pesticide throughout the potting media.

Insecticide and Dosage—At press time (March 2003), three products are registered and approved for incorporation into potting media. Granular bifenthrin, granular tefluthrin, or granular fipronil may be used. Dosage is based on the bulk density of the potting media and the desired certification period. Dosage is expressed as parts per million (p/m) and calculated by the following formula:

$$\frac{\text{(Bulk density of media} \times \text{desired p/m)}}{\text{concentration of pesticide}} = \text{lb of insecticide needed per cubic yard of media}$$

Example #1—Assume that a potting medium that weighs 500 lb/yd^3 is to be treated with granular bifenthrin (0.2 percent) at a rate of 25 p/m:

(500 × 0.000025) ÷ 0.002 = 6.25 lb of bifenthrin needed per cubic yard of medium.

Example #2—Assume that a potting medium with a dry weight bulk density of 625 lb/yd^3 is to be treated with granular tefluthrin (1.5 percent) at a rate of 25 p/m:

(625 × 0.000025) ÷ 0.015 = 1.0 lb of tefluthrin needed per cubic yard of medium.

Certification Period—Refer to the following chart to obtain certification period for a given dose rate.

Application Rates for Incorporation of bifenthrin, tefluthrin, or fipronil Into Potting Media

Insecticide	Dosage (p/m)	Certification period (months)
bifenthrin (Talstar)	10	0–6
	12	0–12
	15	0–24
	25	Continuous†
tefluthrin (Fireban)	10	0–18
	25	Continuous†
fipronil	10	0–6
	12	0–12
	15	0–24
	25	Continuous†

† If all other provisions of Fire Ant Free Nursery Program are met (see page 11).

Method E, In-Field Treatment for B&B Stock Prior to Harvest—

Procedure—This in-field treatment is based on a sequential application of fenoxycarb, hydramethylnon, methoprene, or pyriproxyfen bait followed by a broadcast application of granular chlorpyrifos (fig. 4). The combination treatment is



Figure 4—Field-grown nursery stock can be certified for shipment based on in-field treatments with baits used in combination with granular chlorpyrifos.

necessary because 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 bait drastically reduces the IFA population while chlorpyrifos, applied approximately 5 days later, destroys any remaining weakened colonies and also provides a residual barrier against reinfestation by new queens for a minimum of 12 weeks.

Apply bait with any granular applicator capable of applying labeled rates (1.0 to 1.5 lb of bait per acre). Calibration of equipment is essential, and most granular applicators cannot be accurately calibrated. A Herd® GT–77 Granular Applicator (Herd Seeder Co., Logansport, IN) is frequently used in conjunction with all-terrain vehicles or farm tractors to apply fire ant bait.

Apply bait only when ants are actively foraging. Read and follow the label carefully. At 3 to 5 days after the bait application, apply granular chlorpyrifos broadcast at 6.0 lb active ingredient (AI) per acre. Treatment area must extend at least 10 feet beyond the base of all plants that are to be certified.

Insecticides and Dosages—All baits are applied at 1.0 to 1.5 lb of bait per acre, and any approved bait may be used. Granular chlorpyrifos (any registered formulation) should be applied at 6.0 lb AI per acre.

Exposure Period—30 days. Plants are certifiable 30 days after the treatment sequence has been completed.

Certification Period—12 weeks; an additional 12 weeks of certification can be obtained with a second application of granular chlorpyrifos.

Method F, The Fire Ant Free Nursery Program (Containerized Plants Only)—The Fire Ant Free Nursery Program is designed to keep nurseries free of IFA and provides a basis to certify containerized nursery stock (fig. 5). The program has detection, control, exclusion, and enforcement components that, in combination, provide maximum control of IFA.

Participating regulated establishments must operate under a compliance agreement. Such compliance agreements shall state the specific requirements that a shipper agrees to follow in order to ship nursery stock in accordance with the requirements of the program. Components and requirements of the Fire Ant Free Nursery Program are as follows:

1. Detection—A successful treatment program depends upon early detection of IFA colonies. Nursery owners are required to survey the entire nursery premises visually twice a month for the presence of IFA.

Nurseries participating in this program will also be inspected by Federal or State inspectors at least twice a year. More frequent inspections may be necessary depending upon IFA infestation levels immediately surrounding the nursery, the manage-ment's thoroughness in maintaining the premises, and the number of previous detections of IFA's in or near containerized plants. Inspections by Federal and State inspectors should be more frequent just before and during the peak shipping season. Any nursery determined to have IFA colonies must be immediately treated to the extent necessary to eliminate all detectable colonies.



Figure 5—State plant regulatory officials inspect nursery stock and enforce the Federal IFA quarantine.



Figure 6—The new owners of these large palm trees can be confident that they were shipped from an IFA-free nursery.

2. Control—Nursery plants that are shipped under this program must originate in a nursery free of the IFA (fig. 6). Nursery owners must implement a treatment program with registered bait and contact insecticides. The premises, including growing and holding areas, must be maintained free of the IFA. As part of this treatment program, all exposed soil surfaces (including sod and mulched areas) on property where plants are grown, potted, stored, handled, loaded, unloaded, or sold must be treated with a broadcast application of bait at least once every 6 months. The first application is more effective when applied early in the spring. An early spring bait application provides control before winged queens are produced or have time to establish new colonies. Follow label directions for use.

When properly used, baits provide 80- to 90-percent control of IFA colonies. Followup treatments with a contact insecticide must be applied to eliminate remaining colonies. Mound drench treatments with a registered formulation of chlorpyrifos or diazinon are approved. Read and follow label directions carefully.

3. Exclusion—

For Plants Grown on the Premises—Treatment of potting media with granular bifenthrin, granular tefluthrin, or granular fipronil prior to planting is required. The dosage rate is dependent upon the desired certification interval and pesticide used (see page 9). Apply this treatment according to label instructions.

For Plants Received From Outside Sources—To prevent the spread of IFA's into a nursery formerly free of the pest by newly introduced, infested plants, all stock received from sources outside the nursery must be

- Obtained from other IFA-free nurseries that are certified under a compliance agreement; or

- Drench treated with bifenthrin upon delivery in accordance with pages 5–6 of this Program Aid, and within 180 days be either:
  —Repotted in media treated with an approved granular formulation,
  —Retreated with bifenthrin drench or immersion at 180-day intervals, or
  —Shipped.

4. Enforcement—The nursery owner shall maintain survey and treatment records. These records shall be made available to State and Federal inspectors upon request. If IFAs are detected in nursery stock during an inspection by Federal or State inspectors, issuance of certificates for movement shall be suspended until necessary treatments are applied and the stock and premises are determined to be IFA free. A Federal or State inspector may declare a nursery to be IFA free upon reinspection of the premises. To ensure its effectiveness, this inspection must be conducted no sooner than 30 days after treatment. During this period, certification may be based upon the drench or immersion treatment provided on pages 4–7 of this Program Aid.

Upon notification by the department of agriculture in any State of destination that a confirmed IFA infestation was found on a shipment from a nursery considered IFA free, all shipments from that nursery shall be temporarily discontinued. An investigation by Federal or State inspectors will commence immediately to determine the probable source of the problem and to ensure that the problem is resolved. If the problem is an infestation, issuance of certification for movement on the basis of a "fire ant free nursery" will be suspended until treatment and elimination of the infestation are completed. Reinstatement into the program will be granted upon determination that the nursery premises are IFA free and that all other provisions of the Federal Fire Ant Quarantine (7 CFR 301.81) are being followed.

In cases where the issuance of certificates is suspended through oral notification, the suspension and the reasons for the suspension will be confirmed in writing within 20 days of the oral notification of the suspension. Any person whose issuance of certificates has been suspended may appeal the decision, in writing, within 10 days after receiving the written suspension notice. The appeal must state all of the facts and reasons that the person wants the APHIS Administrator to consider in deciding the appeal. A hearing may be held to resolve any conflict as to any material fact. Rules of practice for the hearing will be adopted by the Administrator. As soon as practicable, the Administrator will grant or deny the appeal, in writing, stating the reasons for the decision.

Violations of the quarantine shall be investigated by Federal or State inspectors, and appropriate penalties will be assessed to discourage further violations.

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 4–9 of this Program Aid. However, certification for movement under the IFA Free Nursery Program will be granted only if all of the provisions of this program are followed.

Grass Sod

***Certification Period*—**Continuous as long as all provisions of the IFA Free Nursery Program are followed.

Procedure—Apply a single broadcast application of chlorpyrifos with ground equipment (fig. 7) or apply two sequential broadcast applications of granular fipronil. Immediately after treatment, apply at least 1.5 inches of water to treated areas.



Figure 7—Grass sod can be infested with newly mated queens as well as entire fire ant colonies.

Insecticides, Dose Rates, and Certification Intervals—

Insecticide	Dosage rate (lb AI per acre)	Certification period (weeks)	Exposure invervals
chlorpyrifos	8.0	6	48 hours
fipronil	0.0125†	20	30 days

† Apply in two applications 1 week apart for a total of 0.025 lb AI/acre.

Bulk Soil

Procedure—Bulk soil is eligible for movement when heated either by dry or steam heat after all parts of the mass have been brought to the required temperature.

Temperature—150 °F.

Certification Period—As long as protected from recontamination.

Soil Samples

Procedure—Soil samples are eligible for movement when heated either by dry or steam heat after all parts of the mass have been brought to the required temperature. Samples of soil can also be certified by cold temperature (freezing).

Temperatures—

Temperature (°F)	Exposure period
150	Until all parts of the mass reach 150 °F
–10 to –20	24 hours minimum

Certification Period—As long as protected from recontamination.

Mitigative Measures

The following measures are required to minimize impact of quarantine treatments on the environment and human health. Any person requesting certification to authorize the movement of regulated articles must adhere to these measures where applicable.

All applicable Federal, State, and local environmental laws and regulations must be followed.

Safety equipment and clothing, as specified by the label instructions, must be used and worn during treatments and during inspections.

Safety practices shall be communicated, and regulated establishment managers must require that on-the-job safety practices be followed.

All pesticides must be applied, handled, stored, and used in accordance with label instructions.

Empty pesticide containers must be disposed of in accordance with Federal and State regulations.

Pesticide remaining in containers after completion of an application must be retained and disposed of in accordance with label instructions and Federal and State regulations.

Oral or written warning must be provided to workers and the general public, indicating pesticide application areas during application and appropriate reentry periods.

Owners or managers of regulated properties must take precautions to limit access to treated areas by the public, livestock, and wildlife.

Accidental spill or water runoff of liquid or granular pesticides leading to potential contamination of ground and surface waters must be minimized by appropriate operating procedures. Catchment facilities (temporary or permanent) adequate to prevent contamination of ground and surface water are necessary in loading areas where liquid drenches and immersions are applied.

Protocol for Collection of Nursery Potting Media for Bulk Density Determination

Collect approximately half a gallon of potting media from five different locations around the "media pile." Place all subsamples together in a heavy-duty plastic bag. Double-bagging may be necessary to ensure against breakage during shipment.

Fill out the Bulk Density Determination Form (see sample on the next page). If the media have been treated with any pesticides, please indicate that fact in the "Remarks" section of the form. Pack the sample securely in a cardboard box and include the form as mentioned above. Ship to:

USDA, APHIS, Plant Protection and Quarantine
National Monitoring and Residue Analysis Laboratory
3505 25th Ave., Bldg. 4
Gulfport, MS 39501

Samples may also be shipped to State or private laboratories for bulk density determinations. However, the technique or procedure used should be the same procedure used by the USDA laboratory listed above, and in all cases should be the dry weight bulk density.

Bulk Density Determination Form

NURSERY: _____

MAILING ADDRESS: _____

_____

PHYSICAL ADDRESS: _____

_____

PHONE: (_____) _____

DATE SAMPLE COLLECTED: _____

RESULTS RETURNED TO ATTN. OF: _____

BASIC MEDIA COMPONENTS: _____

REMARKS: _____

State Regulatory Officials

Alabama
Alabama Dept. of Agriculture
and Industries
Plant Industry Section
P.O. Box 3336
Montgomery, AL 36109–0336
(334) 240–7239

Arizona
Arizona Dept. of Agriculture
Plant Services Division
1688 W. Adams
Phoenix, AZ 85007
(602) 542–0994

Arkansas
Div. of Plant Industry
State Plant Board
P.O. Box 1069
Little Rock, AR 72203
(501) 225–1598

California
California Dept. of Food and Agriculture
Pest Exclusion
1220 N Street, Room A37D2
Sacramento, CA 95814
(916) 654–0312

Florida
Florida Dept. of Agriculture and
Consumer Services
Division of Plant Industry
1911 SW 34th Street
Gainesville, FL 32608
(352) 372–3505, ext. 162

Georgia
Georgia Dept. of Agriculture
Plant Protection Division
19 Martin Luther King Jr. Dr., Rm 243
Atlanta, GA 30334
(404) 651–9486

Louisiana
Louisiana Dept. of Agriculture
P.O. Box 3596
Baton Rouge, LA 70821–3596
(225) 925–3770

Mississippi
Mississippi Dept. of Agriculture and
Commerce
Division of Plant Industry
P.O. Box 5207
Stone Boulevard
Mississippi State, MS 39762
(662) 325–3390

New Mexico
New Mexico Dept. of Agriculture
Bureau of Entomology and Nursery
Industries
Box 30005, Dept. 3-MSC3BA
Las Cruces, NM 88003
(505) 646–3207

North Carolina
North Carolina Dept. of Agriculture
Plant Industry Section
P.O. Box 27647
Raleigh, NC 27611
(919) 733–6930

Oklahoma
Oklahoma Dept. of Agriculture
Plant Industry and Consumer Services
2800 N. Lincoln Blvd.
Oklahoma City, OK 73105–4298
(405) 521–3864

Puerto Rico
Puerto Rico Dept. of Agriculture
Plant Quarantine Services
P.O. Box 10163
Santurce, PR 00908–0163
(787) 724–4627

South Carolina
Dept. of Plant Industry
511 Westinghouse Road
Pendleton, SC 29670
(864) 646–2130

Tennessee
Tennessee Dept. of Agriculture
Division of Plant Industries
Ellington Agricultural Center,
440 Hogan Road, Porter Bldg.
Nashville, TN 37220
(615) 837–5338

Texas
Texas Dept. of Agriculture
P.O. Box 12847
Austin, TX 78711
(512) 463–7476

USDA–APHIS, State Plant Health Directors

Alabama
USDA, APHIS, PPQ
1836 Glynwood Drive
Prattville, AL 36066
(334) 358–8568

Arizona
USDA, APHIS, PPQ
3658 E. Chipman Rd.
Phoenix, AZ 85040
(602) 431–8930

Arkansas
USDA, APHIS, PPQ
1200 Cherry Brook Dr.
Suite 100
Little Rock, AR 72211
(501) 324–5258

California
USDA, APHIS, PPQ
9550 Micron Ave., Suite G
Sacramento, CA 95827
(916) 857–6241

Florida
USDA, APHIS, PPQ
7022 NW. 10th Place
Gainesville, FL 32605
(352) 331–3990

Georgia
USDA, APHIS, PPQ
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