United States Department of Agriculture
Animal and Plant Health Inspection Service
Plant Protection and Quarantine

Administrative action to change D301-81-10(3) and D301.81-10(8) in the Treatment Manual

Treatment Evaluation Document (TED)

Date: June 20, 2012

Treatments, Pests, and Commodities

New Treatment/ Revision/Deletion	Treatment Type	Target Pests	Commodity Applicable
New treatment	Bifenthrin	*Solenopsis invicta; Solenopsis richteri* and hybrid (Imported Fire Ant)	Balled-and-burlapped plants/nursery stock; immersion/dip application
New treatment	Bifenthrin	*Solenopsis invicta; Solenopsis richteri* and hybrid (Imported Fire Ant)	Commercial Grass sod
Clarification of application method	Drench method on balled-and-burlapped plants	*Solenopsis invicta; Solenopsis richteri* and hybrid (Imported Fire Ant)	Balled-and-burlapped plants/nursery stock; drench application

Objective: To provide supporting information and justification for additional treatments being proposed for the Imported Fire Ant (IFA) quarantine in the Treatment Manual. The change is to help continue domestic trade of nursery stock from areas of the U.S. infested with *Solenopsis invicta, Solenopsis richteri* and the hybrid (Imported Fire Ant).

Overview: In order to limit the artificial spread of the Imported Fire Ant, domestic movement of all nursery stock (containerized or balled-and-burlapped) and grass sod from IFA-infested areas of the U.S. to uninfested areas is regulated under 7 CFR 301.81-2. Current approved treatments for balled-and-burlapped (B&B) nursery stock is limited to the use of one insecticide, chlorpyrifos, and availability of that insecticide is very limited, with only a handful of EPA approved labels with pest, commodity and required quarantine level effective rates of application. Treatment of grass sod is similarly limited by available EPA approved insecticide labels. While 2 insecticides are APHIS approved, no chlorpyrifos labels for grass sod and IFA at quarantine level rates of application are available (use pattern has been cancelled/removed from labels due to EPA chlorpyrifos concerns). Grass sod can be treated with granular fipronil, but many sod growers are not comfortable with granular applications, nor have granular application equipment. Therefore, CPHST is continually pursuing additional quarantine level treatment options and better application techniques for growers to comply with the Imported Fire Ant quarantine.

Evaluation:

Bifenthrin immersion treatment for balled-and-burlapped nursery stock: CPHST, along with Tennessee State University, have evaluated the use of bifenthrin as an immersion treatment for balled-and-burlapped nursery stock for 2-4 years. The results found that a dip rate of 0.115 lb ai/100 gal water provided 6 months of residual activity against IFA. Thus, CPHST recommended the addition of this treatment option to the Treatment Manual.

Bifenthrin treatment for grass sod: CPHST, along with Tennessee State University, have evaluated the use of bifenthrin as a grass sod treatment for over 2-3 years. The results found bifenthrin liquid applied in two applications, one week apart, as a broadcast application at a rate of 0.2 lb ai/acre provided 16 weeks of residual activity against IFA after a four week exposure period. Thus, CPHST recommended the addition of this treatment option to the Treatment Manual.

Clarification of application method for drench treatment of balled-and-burlapped nursery stock: During drenching, B&B normally rests on one side of the root ball throughout the three-day drench process (drench twice a day for 3 consecutive days). This drench method possibly restricts treatment coverage on the resting side, while giving the surface of direct application a higher concentration of chemical and deeper penetration. Trials conducted by CPHST and Tennessee State University in the mid-2000s, strongly suggested that rotating root balls during treatment, regardless of application frequency, improved the consistency of bioassay results and could potentially cut the number of days spent applying drenches from three down to one. Numerous trials

have been conduct since 2005 to examine whether changes in plant handling during application improved penetration and coverage and whether we could possibly reduce in the number of days required to complete a drench. It is clear that rotating root balls during treatment application leads to a more uniform coverage of the spray treatment and more consistently effective bioassay results. Thus, CPHST is recommending adding language to the Treatment Manual to strongly recommend that growers rotate the B&B root balls between daily applications for the current chlorpyrifos treatment.

Reports available online at the APHIS-PPQ-CPHST Gulfport Lab annual reports webpage:
http://www.aphis.usda.gov/plant_health/plant_pest_info/fireants/gulfport.shtml

Addition to Treatment D301.81-10(3): Nursery Stock Balled or in Containers Method A – Immersion: After Certification Period and Important Notice for Emulsifiable Chlorpyrifos Treatment of Balled or Containerized Plants:

Pesticide: Bifenthrin (Liquid – label must have use pattern)

Dosage:
Table 5-8-XX Bifenthrin Liquid Dosage for Balled or Containerized Plants

Bifenthrin	Dosage
Liquid with use pattern on label	0.115 lb ai/100 gal. water

Exposure Period: Plants certifiable immediately upon completion of treatment.

Certification Period: 180 days

Important: The professional user assumes responsibility for determining if bifenthrin is safe to treat plants under commercial growing conditions.

Addition to Treatment D301.81-10(8): Grass – Sod Add to Table 5-8-9 and modify title

Table 5-8-9. Dosages for Grass Sod

Material	Amount and dosage of material	Certification Period	Exposure Period
Chlorpyrifos	8.0 lb ai/acre	6 weeks (after exposure period)	48 hours
Fipronil-granular	0.0125 lb ai/acre applied in 2 applications 1 week apart for total of 0.025 lb ai/acre	20 weeks (after exposure period)	30 days
Bifenthrin-liquid	0.2 lb ai/acre applied in 2 applications 1 week apart for total of 0.4 lb ai/acre	16 weeks (after exposure period)	4 weeks (28 days)

Additional language to clarify application technique for Treatment D301.81-10(3) Nursery Stock – Balled or in Containers Method B – Drench Balled-and-Burlapped (B&B) Plants: Step 2 Apply the solution:

Apply the chlorpyrifos solution as a substitute for plain water to the plants during the routine watering activities. Do not remove burlap wrap from plants prior to treatment. Treat plants singly or in groups with the chlorpyrifos solution to the point or runoff on a twice daily schedule for three consecutive days. Rotate the root ball between applications to insure all sides of the root ball are sufficiently treated.

Decision: Amend the Treatment Manual under D301.81-10(3) and D301.81-10(8) to add a new immersion treatment using bifenthrin for B&B nursery stock and a new broadcast treatment using bifenthrin for grass sod. Amend the language under D301.81-10(3) for the drench application technique for B&B plants to include rotating the root ball between insecticide applications.

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