EVALUATION OF ACEPHATE 15G (PINPOINT™) FOR ELIMINATION OF RED IMPORTED FIRE ANTS FROM POTTING MEDIA

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The red imported fire ant, *Solenopsis invicta* Buren, often invades potting media in field nurseries and greenhouses, causing a potential hazard to workers and consumers. Potting media treatments have been developed to meet qualifications for the Texas Floral and Nursery Law and the United States Department of Agriculture Red Imported Fire Ant Quarantine regulations. Acephate is an ingredient in several products currently registered for control of the red imported fire ant as an individual mound treatment. A 15 percent granular formulation has been developed and was tested for its efficacy in controlling red imported fire ants as a potting media treatment.

Materials and Methods

Custom blended potting media was treated, 2 November 1993, by Joe Daniel at Powell Plant Farm in Cherokee County, Texas. Treatments incorporated into the media were as follows:

1. untreated control
2. standard: Oxamyl® 10G, 3 oz./ cubic yard
3. acephate 15G, 0.017 lb. a.i.
4. acephate 15G, 0.034 lb. a.i.
5. acephate 15G, 0.067 lb. a.i.
6. acephate 15G, 0.100 lb. a.i.

On 18 November, this media was potted in 4 inch pots and watered with 1 cup water per pot and 1 cup in tray so media could soak up sufficient water. On 19 November (1:00 to 3:30 pm), each 4 inch pot was placed in a plastic bag with a rubber band constricting the bag around the pot rim and received a heaping 1/4 tsp. fire ants, some brood and one or more queen ants. Bags were closed using a twist tie. The temperature in the laboratory was 73.2 degrees F. On 20 November (approximately 24 hrs. later, 1:54 pm) each pot was inspected for the presence of live ants. This assay was repeated on the remaining media-containing pots on 2 December, 24 January 1994 and 14 July 1994. All pots were watered prior to each assay, only.

Results and Discussion

Oxamyl® 10G-treated potting media had little to no effect on red imported fire ant survival during the 24-hour exposure period used in this assay (**Table 1**). Potting media treated with acephate 15G was effective in eliminating ant activity in treated pots, with higher treatment rates being more effective. Media treated with 0.10 lb. a.i. caused mortality to most ants introduced into the pots for 3 months following treatment. Had the media been watered daily, as is customary in plant production operations, this length of ant control would have probably been reduced.

Table 1. Red imported fire ant survival in acephate and oxamyl potting media treatments, 2 November 1993.

Treatment and rate	No. pots with fire ant activity 24 hrs. following exposure/4			
	Nov. 19*	Dec. 3	Jan. 25	July 14
untreated control	4	4	4	4
standard: Oxamyl® 10G	4	4	4	4
acephate 15G 0.017	1	1	4	4
acephate 15G 0.034	1	3	3	4
acephate 15G 0.067	0	0	3	4
acephate 15G 0.100	0	1	1	3

* After the 19 November 1993 post-treatment evaluation, pots were checked again on 22 November (9:00 am), after the ants had been exposed to treated media for 3 days. In the check, ants were active in all pots (50 to 75 percent of the number of ants initially applied). In the Oxamyl® treated pots fewer ants were found to be active (30-50, 10-20, 10-20, 30-50 in each pot, respectively). No live ants were observed in the acephate treated media.