

## EVALUATION OF TRIUMPH® TREATED POTTING MEDIA FOR ELIMINATION OF RED IMPORTED FIRE ANTS

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The spread of the red imported fire ant, *Solenopsis invicta* Buren, through the United States has been thought to have occurred largely via the movement of nursery stock and sod between urban areas. The United States Department of Agriculture Fire Ant Quarantine mandates certain specific treatments of potting media before plants can be approved for shipment out of the quarantine zone. Additionally, the Texas Floral and Nursery Law mandates pest -free plants.

Historically, chlordane was an effective tool for enforcement of the quarantine law and provided two years residual control of fire ants in treated media. Since chlordane use was cancelled in the early 1980's, products containing chlorpyrifos (Dursban®) have been approved for this use. However, recently, there have been some cases in which live fire ants were found in media treated with chlorpyrifos. Currently, there is a search for other insecticide products with may provide residual control of this pest in potting media. This trial was conducted to evaluate the residual activity of two formulations of isazophos, Triumph® 4E and 1G.

### Materials and Methods

This trial was conducted at Powell Plant in New Summerfield, Texas, on 23 August 1990. Variegated Asiatic jasmine (*Trachelospermum asiaticum* var. 'Varigata') from 2" square pots were transplanted to 6" plastic azalea pots containing treated and untreated potting media. The composition was as follows:

4 bales	peat moss (40 cu. ft.)
8 cu. ft.	Styrofoam
15 lbs.	Osmocote® 15-15-15
7 lbs.	Esmigram®
15 lbs	Lime
10 oz	Truban® granules
6 cu. ft.	bark

Total: 54 cu. ft. medium

The treatments were as follows:

1G - 500 pots at a rate of 24.4g (5.4374 lbs formulation) a.i./yd<sup>3</sup> incorporated into the media

4E - 500 pots at a rate of 0.125 fl. oz./gal. water applied as a drench

CK - 500 pots untreated control

Residual effectiveness of treatments was determined by assaying 12 pots randomly selected from each treatment 4 days, 3, 6, and 12 week following application. During this period, plants were watered and fertilized routinely by nursery operators.

Pots were shipped to the laboratory at Texas A&M University where ants were introduced to treated media to assay product performance. Assays were performed as follows: 1 gallon plastic sandwich bags were placed over the top of the pots and secured tightly around the rim with rubber bands. The pots were then placed in Fluon-treated plastic shoe boxes to prevent escape. Approximately half of the seam in the top of the bag was cut away to allow introduction of ants.

Ants were obtained from freshly collected, active mounds. Due to differences in brood quantity and number of queens in field collected colonies, homogenous mini-colonies were assembled for assays. Since the colonies were from a multiple-queen area, no territoriality was observed between colonies. Into each pot was placed: approximately 8.0ml. worker ants, 2.0 ml. brood (larvae and pupae), and at least four queens added. Immediately after introduction of the “collonoid”, the top of the bag was sealed by twisting it closed with twist-tie. After 24 hours, pots were disturbed and observed for ant activity. An effort was also made to locate brood and queen ants.

## Results and Discussion

Results of assays are presented below:

**No. of active colonies out of 12 after 24 hours**

<b>Treatment</b>	<b>4 days</b>	<b>3 weeks</b>	<b>6 weeks</b>	<b>12 weeks</b>
Triumph 1G	0	0	6	12
Triumph 4E	0	0	1	12
untreated control	12	12	12	12

For the first post-treatment assays, ant mortality was observed in as little as 15 minutes after exposure to treated media. No ants survived for 24 hrs. in treated media for the first three weeks. After six weeks of treatment, ants began to survive in treated media, particularly that treated with the granular formulation. Treatments and number of plots with ants surviving after 24 hrs. exposure per 3 pot replicate were as follows:

Triumph 4E	0.25 a
Triumph 1G	1.50 b
Untreated control	3.00 c

(LSD (P # 0.05) = 0.865)

At 12 weeks following treatment, a few live ants were observed in all pots receiving insecticide treatment after 24 hrs. exposure. However, morality continued to be observed. The assay method used in this study did not allow for an evaluation of “repellency” of low residual effects of treatments. Bulk density of the top ½ to 1 inch of potting media significantly increased over time.