

**EFFECTS OF FORMULATIONS OF "RIDDANCE" FORMULATIONS
(SPACE AGE TECHNOLOGY PRODUCTS, INC.)
ON LABORATORY COLONIES OF THE
RED IMPORTED FIRE ANT (HYMENOPTERA: FORMICIDAE)**

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Formulations of products called "Riddance Diner" or "Riddance Powder," produced by Space Age Technology Products, Inc. (4536 West Lawrence Ave., Chicago, Illinois 60630; 312/725-0404) were tested to determine if any effects could be observed when fed to laboratory colonies or the red imported fire ant (RIFA), *Solenopsis invicta* Buren. These materials are distributed with a label produced on a copy machine claiming "Food service for roaches, termites, ants, and other vermin pests. Non-poisonous. The Pied Piper of roaches, termites, ants, and other vermin pests." The ingredients are unknown, but may be derivatives of latex paint.

Materials and Methods

Experiment 1 (20-22 June 1989): In order to simplify testing of the active ingredient, which is apparently similar in all formulations, a preference test was conducted. The formulations tested and their appearances are as follows: 1) powder: "Riddance Powder", a dark pink, fluffy powder with white chunks of varying size scattered throughout; 2) caulk: a dark brown, crumbly, wet paste; and 3) paint: a dark gray, thick latex with much sediment. One gram of each material, as it came from the container, was weighed out into small, glass scintillation vials. Two samples of paint were weighed, one was allowed to dry before testing. Vials containing the formulations were placed on their sides and arranged randomly within each of 4 standardized RIFA colonies. Observations were taken at 15 minutes, and 1, 2, 3, and 48 hours. Colony reactions were given a rating of + or - to indicate preference of each formulation and any observable "knock down" or worker mortality.

Experiment 2 (13-17 July 1989): A second series of 4 samples was weighed out into small foil cups. Only the powder, caulk, and wet paint were used. One cup of each sample was placed in the four standardized RIFA laboratory colonies and one set was left out to serve as a control. The samples were removed after 4 days of exposure and ants were also removed from the cups before the samples were then re-weighed. The water content of the samples was determined by weighing the control samples, calculating a percent water content, and multiplying the other weights accordingly.

Experiment 4 (11-13 July): Three tall Petri Dishes were coated with Fluon® to prevent ant escape. The bottom of one was covered with "Riddance Powder," the other with a large quantity of caulk, and the third was left as a control. A small cup containing honey water was placed in each dish to extend the ants' lives. Approximately 30 ants were pulled from an untreated colony and placed in each dish.

Results and Discussion

Experiment 1: RIFA tunneled extensively in the powder, removed some material, but no amount was observed to be taken into the colony dish. The caulk was found to be very attractive to the ants. Chunks were chewed and reduced in size, but no removal was noted. Dry paint was chewed off the sides of the vial, but ants did not remove the material from the vial. Ants almost immediately brought refuse (waste products) into vial containing the wet paint, presumably to soak up the liquid. The paint-soaked refuse was removed by ant once it had dried. No preference could be observed or inferred from this experiment. The ants were obviously attracted to the water in the moist compounds, but ingredient removal could not be differentiated from water removal since no control samples were left out of the colonies for later weighing. No dead or dying ants were seen following exposure to any of the formulations.

Experiment 2: Average active ingredient removal from a .250 g. sample was as follows:

	Powder	Caulk	Paint
	.1740	.0570	.0280
	.0979	.1541	.0204
	.2053	.0317	.0052
Average	.1591g	.0809g	.0536g

About twice as much powder was removed as the caulk and about three times as much as the paint. The powder was chosen for the efficacy experiment.

Experiment 3: The powder was tunneled, formed, and removed in all treatment colonies. There were no observable differences in colony size, health, or brood condition between the treatment and control colonies.

1,000 ant/brood condition				
Colony	13 July	20 July	27 July	31 July
Treatment 1	15/poor	15/poor	<15/poor	<15/poor
Treatment 2	20/poor	<20/poor	15/poor	15/poor
Treatment 3	15/poor	15/poor	15/poor	15+fair
Treatment 4	15/poor	<15/poor	15/poor	<20/poor
Control 1	10/poor	10+/poor	10/poor	10+/poor
Control 2	15/fair	15/fair	<15/fair	15/fair
Control 3	<15/poor	15/poor	<15/poor	15/poor
Control 4	15/poor	15/poor	<15/poor	<15/poor

Experiment 4: After two days, no death had occurred from the treatments.

Conclusions

The Space Age Technology products are, apparently, attractive to the ants. RIFA foragers were certainly attracted to the water-containing products and consistently removed some of the active ingredient. However, no transportation of the ingredient into the colony brood dish was noted at any point. There appeared to be no toxicity of the products to RIFA workers or any effects on brood quantity or condition.