
The Red Imported Fire Ant Meets American Ingenuity

Bastiaan M. Drees
Texas A&M University

There are no snake-oil
salesmen in the world of fire
ants control products.





Changing Paradigms

- 1930's - 1970's - Eradication
- 1980's - Integrated Pest Management
 - property line to property line
- 1990's - Area-wide/community-wide IPM programs
- 2000's - Classical biological control?



FRUSTRATED WITH FIRE ANTS? Get rid of them-- Safely and forever

Among the joys of Spring, the flowers, birds and fresh green growth grows a not so joyous addition--fire ant mounds.

If you've been shoveling or pouring chemicals on fire ant mounds only to see them just pop up some where else,

Public Opinion

- The government will “fix” the fire ant problem that they created.
- Nothing on the market “works”.
- All treatments do is move the ants.
- If my neighbors don’t control their ants, I’m just wasting my money.
- Pesticides are “bad”, only “organic” methods are safe and effective

Home Remedies

- gasoline/diesel
- boiling water drench
- shovelling one mound onto another
- instant grits/ “Malto meal”
- many others
 - Mistletoe sprigs
 - “Downy Fabric Softener”



A SIMPLE, NON-TOXIC HOME REMEDY AGAINST FIRE ANTS¹

Walter R. Tschinkel and Dennis F. Howard
Department of Biological Science
Florida State University
Tallahassee, FL 32306

ABSTRACT

Three gallons of hot water (about 90 C) poured slowly on each of 14 fire ant mounds produced excellent to complete kill in 8 of 14 cases, moderate kill in 3/14, poor kill in 2/14 and no kill in one. Colonies similarly treated with three gallons of cold water were normal. We therefore suggest the use of hot water as a simple, humble but effective treatment against fire ants around the home. Its advantages are instantaneous effect, ease of application and absence of residual toxicants.

Key Words: *Solenopsis*, hot water, ant control











LETTERS

WEST TEXAS WATER

Water

dry tendency of West Texas water is a fact. Webb whose letter in "Problem/Leona V" Lubbock after a rain, in the years she must from her well that the water is employed high

believe, will significantly improve your magazine.

Your magazine goes to gardeners all over the state of Texas. The climate and growing conditions vary significantly depending on the location. Therefore, in

Brighten the Nov-3 issue, a

and informa-

tion would be more helpful.

Information regarding pH, drought tolerance, sun or shade requirements, and whether female plants only produce berries is required for best use of the plant material. The discussion of dogwood all this information assistance. Yau-

rural country home. Everything that she planted was destroyed by these ants.

One summer it became so hot and dry that the ants ran out of vegetation to cut down. She said she noticed the ants were crawling up the trees in search of mistletoe and carried it into their mounds. It was not long after that she noticed the ants disappeared. Since that summer she has not seen them.

She has broken branches of mistletoe and laid them on fire ant mounds, and to her surprise the fire ants also disappeared. The mistletoe either is toxic or acts as an irritant to the ants, but whatever it does, it works organically!

James Kloss
Bremond



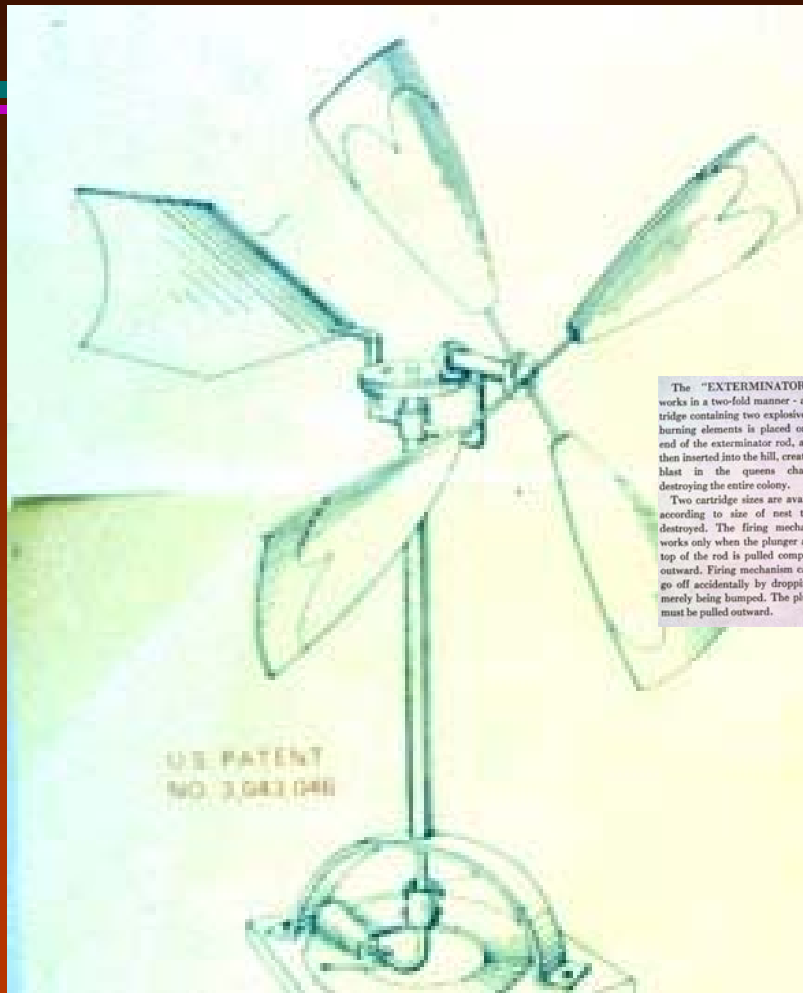


Control Alternatives

- Mechanical methods
- Physical methods
- Biological methods
- Chemical methods: “organic” & synthetic
 - contact insecticides
 - bait insecticides

Mechanical Methods & Devices

- “McCoy Ant Stomper” - crushing
- “The Eradicator” - explosive device
- “The Antser” - water and grinding action
- Barriers
 - Talcum powder, “Tanglefoot”
 - “EnviroSafe” teflon spray or tape, “Fluon”
 - Pest-free pet bowls



U.S. PATENT
NO. 3,083,048

The "EXTERMINATOR" works in a two-fold manner - a cartridge containing two explosive and burning elements is placed on the end of the exterminator rod, and is then inserted into the hill, creating a blast in the queens chamber destroying the entire colony.

Two cartridge sizes are available according to size of nest to be destroyed. The firing mechanism works only when the plunger at the top of the rod is pulled completely outward. Firing mechanism cannot go off accidentally by dropping or merely being bumped. The plunger must be pulled outward.

McCOY ANT STOMPER

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- *Durable, heavy metal construction
- *Easy portable
- *No chemicals
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The McCoy Ant Stomper can be used again and again. It's a practical investment in fire ant control!

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- *Wind-driven
- *Price includes freight and handling
- *Six to eight weeks delivery

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- *Price slightly higher than wind-driven model

The "EXTERMINATOR"

works in a two-fold manner - a cartridge containing two explosive and burning elements is placed on the end of the exterminator rod, and is then inserted into the hill, creating a blast in the queens chamber destroying the entire colony.

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FIREANTS

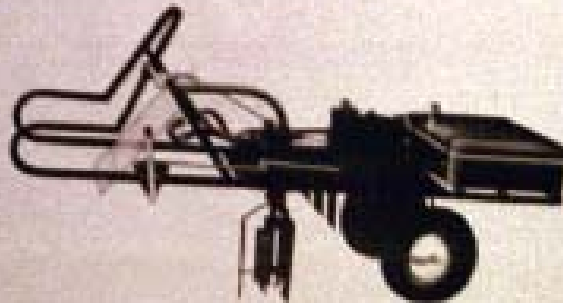
The scourge of ranchers, farmers, breeders, athletes, schoolyards, backyards, golf courses.

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The blades and water engage the mound so quickly and violently that, unlike poisons, the queen is unable to escape.

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Fire Ants



Termite



House Deck



Climbing
Tape

Physical Methods & Devices

- Boiling water drench, injection
- Steam injection
- Microwaves
- Electrocutation devices
 - “Yardvaark”, “Ardivark” zappers
 - Direct electrocutation of soil
- Black plastic sheeting







KILL FIRE ANTS

EFFICIENTLY • EASILY • ECONOMICALLY

with the
Yaard-Vark
Model FA-100
ELECTRIC FIRE ANT KILLER

The Yaard-Vark produces a powerful electromagnetic field which alters the behavior of fire ants. This force field causes the ants to attack one another. As long as the Yaard-Vark is operating in the ground, the ants will continue to fight each other to the death. The force field is not felt by human beings or other mammals.

• **SAFE TO PEOPLE, PETS AND THE ENVIRONMENT**—The Yaard-Vark will not kill grass and other vegetation. No chemicals are used. Fire ant chemicals kill many harmless insects which compete with fire ants for territory. The Yaard-Vark does not affect beneficial insects and is safe to children and pets when used according to directions. An Owner's Instruction Folder is included with each unit. It contains operating instructions, cautions, limited warranty details and storage/maintenance/repair information.

• **ECONOMICAL**—Yaard-Vark kills fire ants at a fraction of the cost of chemicals. It costs only 10 cents of electricity and, unlike chemicals, is reusable.

• **EASY TO USE**—Yaard-Vark is convenient and ready to use. Be sure you have fire ants. Most harmless ants do not respond to the Yaard-Vark because of their non-aggressive nature. Follow these steps:



Remove grass or debris from the ground and create a depression in the soil with the tip of your shovel to create a hole. The soil should be soft and moist and provide a rich source for the Yaard-Vark unit.



Push the Yaard-Vark into the ground until the trigger pin is completely in the ground. Plug a three prong electrical cord into a 110-120 volt outlet. Connect the Yaard-Vark to the appropriate wall and OUTLET box. SEE ILLU.



Don't immediately see any activity about the hole of the Yaard-Vark? Shutting the Yaard-Vark down and waiting in the ground for three hrs. or so will get activity started. There should be a lot of dead ants around the Yaard-Vark in 48 hrs.

• **THIRTY DAY LIMITED WARRANTY**—Fi-Shock, Inc. guarantees the original purchaser of the Yaard-Vark against manufacturing or parts defects for 30 days from the date of purchase.

• **ATTRACTIVELY PACKAGED**—The colorful Yaard-Vark unit is designed for self-service customers. Operation and details of the unit are graphically shown. Punched for hanging.

• **AD SLICKS AND REPRO ANT**—Advertising material and product demonstrations are available free for your use.



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Biological Control Agents

- Predators
 - Ant eaters, armadillos
 - Martins, Martin houses
- Parasites
 - *Pyemotes tritici*- “Fire Mites”
 - *Steinernema nematodes* - “Antidote”
- Pathogens
 - *Beauvaria bassiana* - “Naturalis-L”

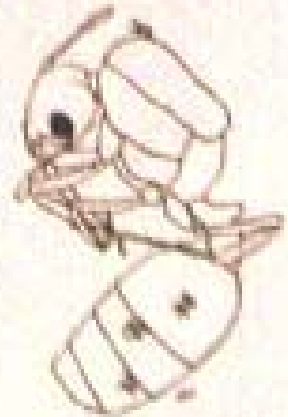




Biological Control of the Red Imported Fire Ant



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Active Ingredient: *Beauveria bassiana* Strain GHA.....21%*
Inert Ingredients.....
Total.....

“Organic” Methods

- Botanical insecticides (mound drenches)
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 - Pyrethrins, with diatomaceous earth
 - Rotenone (in liquefied cow manure)
 - Pine oil, turpentine plus ammonia
 - Citrus oil in compost tea (withdrawn)
- Inorganic “organics”
 - Boric acid (liquid, solid baits)
 - Diatomaceous earth (ant trail dust)



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Chlorfenruthin	0.05%
INERT INGREDIENTS	
	88.80%
TOTAL 100.00%	

Net Volume 11.15 fl. oz.
(315 ml) (31.50 g)

KEEP OUT OF REACH OF CHILDREN
CAUTION
See back panel for additional information

NO CHEMICAL RESIDUE

1892

TS

DIATOM
EXTRACTS

For God so loved the world that he gave his only
begotten Son that whosoever believeth in Him
should not perish but have everlasting life John 3:16

BEDBUGS
cracks, through
bedstead
For HOUSE
and frame

FIRE ANTI
annoyance
annoyance
entering
areas, dress
window
foundations
pools and
until the
injects as
kill the
population
necessary

TO TREAT
injected
or 1 lb/25
PSI until
Dry powder
pressure



NEW

SOLVES the PROBLEM

- Guaranteed
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- Safe



MOUND LEVELER



Fire Ants not just and they'll lose a yard



Conventional Insecticides

- Contact insecticides - neurotoxins
 - chlorinated hydrocarbons (mirex, chlordane, heptachlor, lindane)
 - pyrethroids (1. bifenthrin, permethrin, tefluthrin; 2. allethrin, resmethrin, tetramethrin)
 - organophosphates (acephate, chlorpyrifos, diazinon, trichlorfon)
 - carbamates (bendiocarb, carbaryl)
 - pyrethrins, rotenone









Overrun by fire ants? Whip'em up some grits

Associated Press

Moandville, Ala. — A special meal of grits may be one of the last things a fire ant colony eats, thanks to a Hale County extension agent's idea to wipe out the troublesome insects.

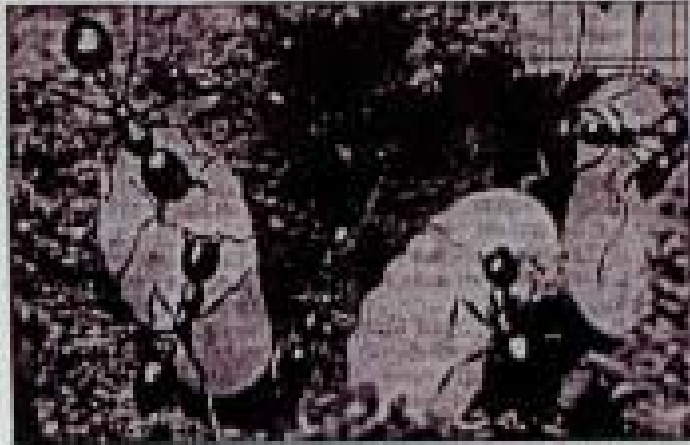
The grits, treated with a sterilizing agent, were spread across 800 acres in Moandville in west central Alabama in May.

"In about 2½ months, we had no ants," said James Clary, Hale County extension agent. "It's ironic that we knocked out fire ant mounds in Moandville but we didn't have that in mind when we started the program."

The treated grits, which are marinated in soybean oil for taste, are spread on fire ant hills. Worker ants take the new breakfast to the queen ant, she eats the sterilant and stops reproducing. The fire ant colony dies.

"It's a slow-working material but it's a good sure way to get ants," Clary said.

The queen dies right away and the rest of the ants have to



Associated Press

A worker fire ant can be tricked into killing its own queen, thus destroying a whole colony of the pests, says extension agent James Clary of Hale County, Ala.

die a natural death."

The program was the result of one man's concern for quail, which are attacked by fire ants when they are young. The quail hunter approached Mr. Clary and they decided, along with the

mayor, to use Moandville, named for American Indian mounds, as a pilot project.

Most of the grits, a pound per acre, were distributed by aerial spraying. The remainder was broadcast by four-wheelers

A recipe for fire ants

Marinate grits in soybean oil to tempt the fire ants' taste buds. Then treat with a sterilizing agent and spray on fire ant hills, about a pound per acre. Worker ants present the delicacy to the queen ant, who stops reproducing upon eating the sterilizing agent. The fire ant colony dies out.

equipped with seed applicators.

Mr. Clary said the town picked up about half the \$7,000 cost. Utilities bore the other half.

The grits, he said, do not affect other types of ants, but he said those ants do not pose the serious problem that fire ants do.

The bait, which Mr. Clary described as environmentally safe, is marketed by CIBA-Geigy under the name Amdro.

A follow-up maintenance application is planned for October.

Weather fears cut

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Conventional Insecticides

- Bait-formulated products
 - conventionally-formulated fire ant baits - processed corn grit coated with soybean oil (abemectin, fenoxycarb, hydramethylnon)
 - protein baits on ground silkworms (hydramethylnon)
 - bait station formulations (hydramethylnon, sulfonamide)
 - liquid or solid baits (arsenic, boric acid)

NOV 19 1993

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Fire Ant Probe and Drench System



Kill the Queen and Eliminate the Colony!

- Includes probe applicator and drench concentrate
- Simple 3-step operation - Just add water, insert and drench!
- Penetrates deep into mound to deliver insecticide directly to Queen
- Isolates mound inside and out within 15 seconds - won't dig
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- Works faster than scoffer box



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(First Use) Patents

- Process for boiling water to treat ant mounds
- Process for producing steam and injecting into mounds
- Pine oil plus soap mound drench
- D-limonine mound drench

Conclusions

- Why make a better mouse trap when you can invent “the cure” for fire ants?
- Someone is going to make a lot of money when they find “the cure”.
- Unlike for other insect pests, IPM for fire ants may only be acceptable when it eradicates them (job security for entomologists!).
- Lawyers make the most money from fire ant products.

Special Thanks

- Dr. Sanford Porter
- Mark Trostle
- Dr. Jerry Cook
- Dr. Ann Sorenson