



# History of Fire Ant Bait Technology

Bastiaan “Bart” M. Drees, Director  
Texas Imported Fire Ant  
Research & Management Project



# Bait Technology



- Formulation
- History
- Products
- Application

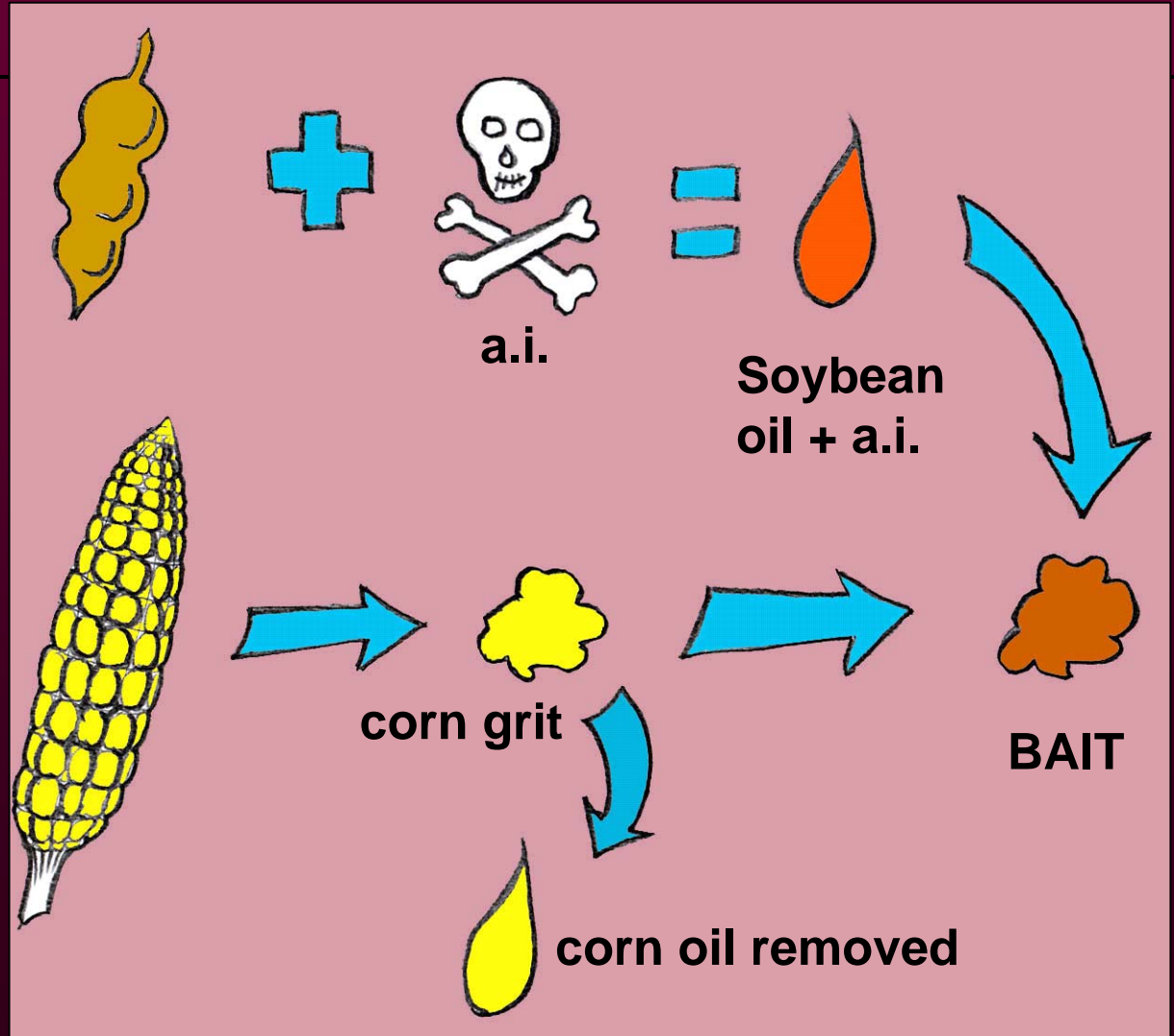




# Bait Formulation

- Soybean oil plus active ingredient (a.i.)

- Processed (defatted) corn grit carrier





# Mirex



- 1962: dissolved mirex (0.3%) in soybean oil (14.7%) on impregnated on corn grits (85%); developed by C. Lofgren, USDA, ARS)
- 1962-1978: 46.6 million acres treated up to 3 times per year
- 1977: EPA cancels registration



# Hydramethylnon (Amdro®)



- 1978: hydramethylnon with oleic or linoleic acid in soybean oil (20%) on a pregelled defatted corn grit carrier
- 1980: EPA registration







# Prodrone

- 1983: Prodrone, the first insect growth regulator (IGR) registered by the EPA
- 1-(8-methoxy-4 8-dimethylnonyl-4-(1-methylethyl) benzene





# Early Treatment Program

Announcing  
The "1-2" Punch  
That Knocks Out  
Fire Ants  
For Good.





# Fenoxycarb (Logic®)



- 1985: Logic® (fenoxycarb), an IGR, registered by the EPA





# The Two-Step Method

**ORTHO® FIRE ANT EXTINGUISHER!**

**POWER PACK**

**ORTHO Fire Ant Bait**

**ORTHO ORTHENE Fire Ant Killer**

ELIMINATES MOUNDS YOU SEE—AND ONES YOU DON'T!

**POWERFUL 2-STEP PROGRAM!**

**ORTHO® Fire Ant Bait** By Wt.  
 Active Ingredient: Fenoxycarb: (ethyl [2-(4-phenoxyphenoxy) ethyl] carbamate) ..... 1%  
 Inert Ingredients ..... 99%  
 Contains Ciba-Geigy Logic® Fire Ant Killer  
**NET WT. 10 oz (283g)**

Keep out of reach of children  
**CAUTION**  
 See side panels for additional precautionary statements.

**ORTHENE® Fire Ant Killer** By Wt.  
 Active Ingredient: Acephate (O,S-Dimethyl acetylphosphorimidothioate) ..... 75%  
 Inert Ingredients ..... 25%  
 ORTHENE®, Acephate  
 U.S. Pat. Nos. 3,716,600 & 3,914,417.  
**NET WT. 1 lb (453g)**

**ORTHO® FIRE ANT EXTINGUISHER!**

**Here's how it works:**

APPLY ORTHO® FIRE ANT BAIT ACCORDING TO THE LABEL DIRECTIONS TO STOP THE QUEEN

**STEP 1**

**THEN...**

WAIT **7 TO 10** DAYS.  
 (TO LET ANTS FEED THE QUEEN)

APPLY ORTHENE® FIRE ANT KILLER ACCORDING TO THE LABEL DIRECTIONS TO CONTROL WORKER ANTS

**STEP 2**





# Abamectin Products



- 1986: Ascend/Affirm® (abamectin) registered by the EPA

Also, Varsity®



# Pyriproxyfen Products

- 1998: Distance®  
Spectracide® (and Esteem®) Fire Ant Bait (pyriproxyfen), an IGR, registered by the EPA





# S-Methoprene (Extinguish™)

- 1998: Extinguish™ (s-methoprene), an IGR, registered by the EPA





# Spinosad Products

- 2000: Justice®, Eliminator®, Strike®, and Penn-Kill® Fire Ant Baits (spinosyns A and B combined) registered by the EPA
- spinosyn derived from the bacterium, *Saccharopolyspora spinosa*





# Fipronil Bait



- 2000:Fipronil bait (and granular) products registered by the EPA



# Application Methods

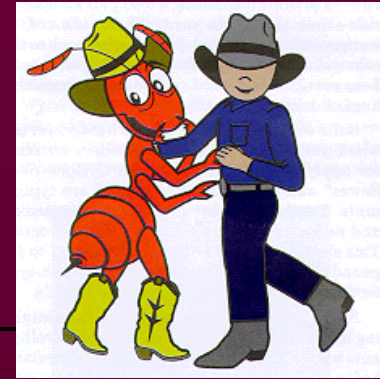
- Broadcast application
- Individual mound treatment
- Alternative patterns
- Bait blends
- Equipment for ground and aerial application





# Two-Step Method

- Least toxic, cost-effective method
- Most suitable for larger, fully-infested areas
- Reduces surface runoff water contamination

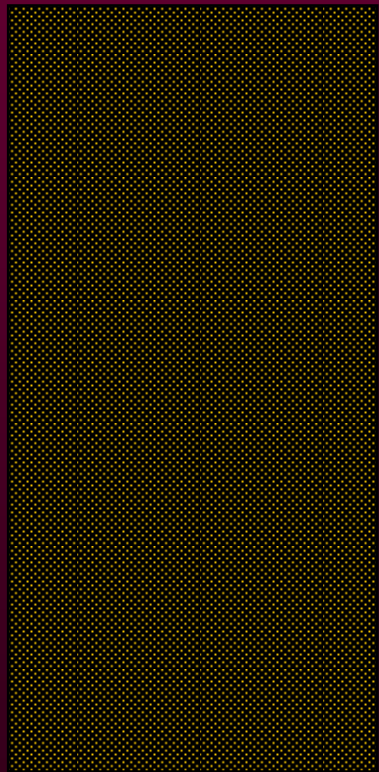


- **Step 1:** Relies on periodic broadcast application of fire ant bait product(s)

- **Step 2:** Uses mound treatments to treat “nuisance” ant mounds, only



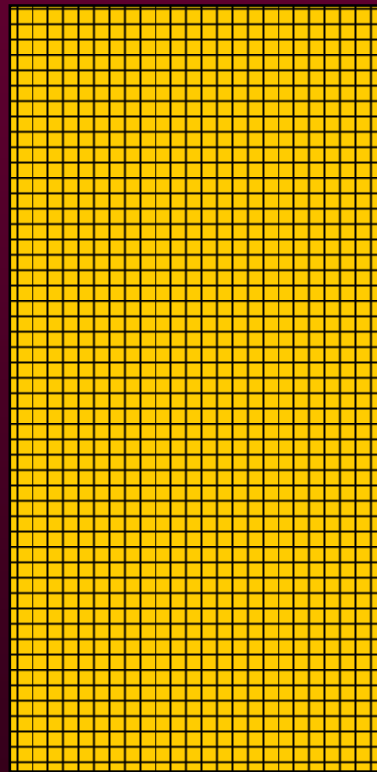
# Alternative Bait Application Patterns



Solid coverage



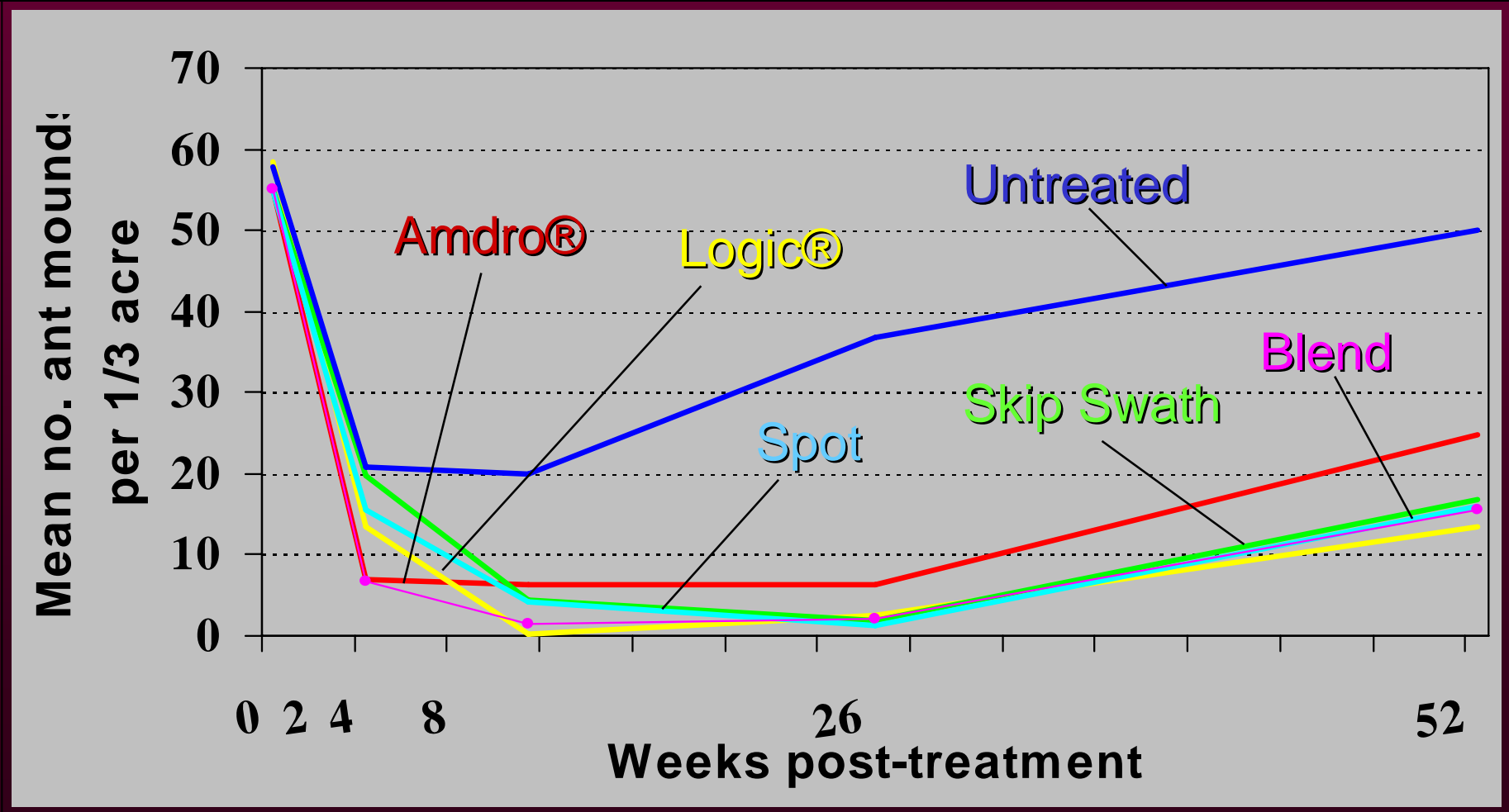
Skip swath



Grid pattern



# Granger Lake, Williamson Co., Texas Treated July 1, 1993





# Hopper Blend 24(c) Label (2001)

**AMDRO® PRO Fire Ant Bait  
Or  
SIEGE® PRO Fire Ant Bait**

**Registration  
For  
Special Local Need**

**DRAFT LABEL**

**FOR DISTRIBUTION AND USE ONLY IN THE STATE OF TEXAS**

**EPA Reg. Nos. 241-322**

**EPA SLN No. TX-**

**AMDRO PRO OR SIEGE PRO PLUS  
EXTINGUISH\*PROFESSIONAL FIRE ANT BAIT  
FOR CONTROL OF IMPORTED FIRE ANTS IN NON-AGRICULTURAL  
LANDS AND GRASS FORAGE (PASTURE AND RANGELAND)**



# Herd Seeder Modification





# Truck-Mounted Bait Blower Experimental Prototype



Bait applicator for treating rest stops and roadsides (Charlie Coble)





# Aerial Application





# Acknowledgment and Disclaimer

- Information contained herein was modified from: D. F. Williams, H. L. Collins, and D. H. Oi. 2001. “The Red Imported Fire Ant (Hymenoptera: Formicidae): An Historical Perspective of Treatment Programs and the Development of Chemical Baits for Control”. *American Entomologist* 47(3):146-159.
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