Rodent-Targeted Acaricides: Topical Pesticides
An Update: Current Status/State of the Art

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Area-Wide Acaricides to Control Ticks

- *Ixodes scapularis* 2 yr life cycle
- Area-wide acaricides to target nymphal ticks
  - Doesn’t require a lot of in depth knowledge of life cycle
  - Effective – acarological risk index (# of infected host-seeking nymphal ticks)
  - Liquid Formulations (Stafford et al. >90%)
  - Granular Deltamethrin (Schulze et al. >95%)
- People won’t use in endemic areas of US
  - CDC, KAB Studies (<25% spray for ticks)
Alternatives to Area-Wide Acaricides

- **DEER**
  - Deer reduction
  - Exclusion (fencing)
  - USDA 4-Poster (host-targeted)
- **LEAST TOXIC**
  - Soaps, Desiccants, Natural Products, Fungus
- **SMALL MAMMALS**
  - Antibiotic baits, RTV’s, IGR’s
  - Host-targeted (Damminix, Select TCS)
Host-Targeted Approaches to Tick Control

- DAMMINIX® Tick Tubes
  - Permethrin-treated cotton nesting material
- SELECT Tick Control System (TCS)
  - Non-toxic bait and topical acaricide (fipronil)
DAMMINIX® Tick Tubes Label

DAMMINIX® A TICK TOXICANT as an aid in the control of ticks (that may carry Lyme Disease) that infest mice and nests of mice found around yards, play areas, parks, brush, paths, and in woodlands

- ACTIVE INGREDIENT: Permethrin 7.4%
- INERT INGREDIENTS: 92.6%
- TOTAL: 100.0%

- EPA Reg. No. 56783-1  EPA Est. No. 5693 MA1
  - Available in 33 US States

© 2015, ECOHEALTH, INC. 56 HAWES STREET, BROOKLINE, MASSACHUSETTS 02446 617-742-2400
- CONTENTS: 24 Damminix Tubes, each containing 4.5 grams or 0.16 oz.
How DAMMINIX® Tick Tubes Work

DAMMINIX® Tick Tubes reduce the risk of Lyme disease by using mice as “couriers to kill disease carrying blacklegged ticks"
DAMMINIX® Tick Tubes – Directions For Use

- Target all brush-covered & woodland areas to be treated
  - Maximum distance between tubes not to exceed 10 yards
  - Place in mouse specific habitat (not mowed lawns, open grasslands)

- Treatment Around Yards
  - Place tubes within 1 yard of lawn edge, in flower gardens, under brush, along fences, etc

- Treatment of Woodlots
  - Place tubes in a contiguous array (grid design), < 10 y spacing

- Two applications/yr between April 1 and mid-September
  - 6 tubes/0.125 acre; 24/0.5 acre; 96 tubes/2.0+ acre
DAMMINIX® Tick Tubes Fact Sheet

- Environmentally friendly approach to control ticks.
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- Applied twice per year, spring and mid-summer, targeting nymphal and larval blacklegged ticks.
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- Applied twice per year, spring and mid-summer, targeting nymphal and larval blacklegged ticks.
- Available at hardware stores, lawn/garden centers, and professionals.
DAMMINIX® Tick Tubes — Field Trials

  - 90% reduction in ticks/animal; 72% reduction infestation rate
  - No observed differences in host-seeking ticks or proportion of infected ticks
  - 3 yr of treatment demonstrated no reduction in risk of exposure to spirochete-infected, host-seeking nymphs & adults of I. dammini.
  - Confirmed efficacy of Damminix for reducing abundance of vector ticks.
Select Tick Control System® (TCS)

- Environmentally friendly approach to control ticks.
- Target mice and chipmunks, non-toxic attractive bait and treated wick to passively treat small mammals in a child-resistant packaging.
- Developed by researchers at CDC/DVBD (formerly MaxForce TMS)
  - Licensing Agreement with Tick Box Technology, Norwalk, CT
  - Available to public as of Aug 2011
  - EPA registered in 32 states
- Applied twice per year, spring and mid-summer, targeting nymphal and larval blacklegged ticks.
- Available through licensed Pest Management Professionals
SELECT Tick Control System® (TCS) Label

- ACTIVE INGREDIENT: Fipronil 0.7%
- INERT INGREDIENTS: 99.3%
- TOTAL: 100.0%
  - Amount of AI/station = 25.5 mg

- EPA Reg. No. 85306-1 EPA Est. No. 85306-CT-001
  - Available in 32 US States

- © Tick Box Technology Corporation, 1 Testa Pl, Norwalk, CT 06854
  (203) 852-7171
How SELECT Tick Control System® (TCS) Bait Boxes Work

Easy-to-use, low maintenance, effective means to reduce ticks and interrupt the transmission cycle without harming the environment.
SELECT TCS® Tick Tubes – Directions For Use

- Target all brush-covered & woodland areas to be treated
  - Maximum distance between tubes not to exceed 10 yards
  - Place in mouse specific habitat (not mowed lawns, open grasslands)

- Treatment Around Yards
  - Place tubes within 10 m of lawn edge; 10 y spacing of boxes

- Treatment of Woodlots
  - For maximum control, a 2nd additional row 10 m in may be desired; 10 y spacing

- Two applications/yr between mid-April/May thru September/October
  - 10 boxes /0.5 – 1/0 acre (size of lot and habitat determines # of boxes)
How SELECT Tick Control System® (TCS) Bait Boxes Work

Easy-to-use, low maintenance, effective means to reduce ticks and interrupt the transmission cycle without harming the environment.
SELECT Tick Control System® (TCS) – Field Trials

  - 50% reduction in host-seeking nymphs; 57% reduction in infected nymphs

  - 94% reduction small mammal tick burdens
  - >90% reduction in host seeking ticks

  - 81% reduction in host-seeking nymphal *I. scapularis*
  - 96% reduction in infected small mammals and 93% reduction in infected ticks

  - >97% reduction in host-seeking nymphal *I. scapularis*
For more information, contact CDC
1-800-CDC-INFO (232-4636)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.