Tick control methods not effective in residential neighborhoods

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https://danielcameronmd.com/tick-control-methods-not-effective-residential-neighborhoods/

In their study, "Impacts Over Time of Neighborhood-Scale Interventions to Control Ticks and Tick-Borne Disease Incidence," Ostfeld and colleagues examined the effectiveness of tick control methods in 24 residential neighborhoods endemic for Lyme disease in New York.[1]

The study, conducted over several years, assessed the impact of tick control system (TCS) bait boxes and Met52 spray on reducing tick abundance and tick encounters with people and outdoor pets. And whether these interventions led to a decrease in reported cases of tick-borne diseases.

"Rapid increases in incidence rates and geographic ranges of tick-borne diseases have stimulated efforts to reduce human exposure."

The authors examined two interventions:

TCS Bait Boxes

TCS bait boxes attract small animals to a food source inside an enclosed device and apply the tick-killing chemical, fipronil. (Fipronil is lethal to ticks but harmless to mammals.)

Met52 Spray

Met52 spray is a biopesticide, which consists of spores of the F52 strain of the fungus Metarhizium brunneum. The solution, mixed with water, is sprayed on the ground and low-lying vegetation.

Impact varies with type of tick control intervention

"By killing ticks attached to small mammals, TCS bait boxes are expected to affect the abundance of host-seeking (questing) ticks the following year," the authors explain.

Whereas, "Met52 targets host-seeking ticks, with impacts expected within days to weeks after deployment."

Unfortunately, interventions were unable to control tick populations in 24 residential neighborhoods in New York over a 4-to-5-year period.

"… the lack of association between reduced abundance of host-seeking nymphal blacklegged ticks in residential areas receiving acaricidal treatments and the incidence of tick-borne diseases in those areas … suggests that tick control for disease reduction needs new approaches."

STUDY FINDINGS:

- The study found that in neighborhoods with active bait boxes, questing blacklegged ticks and ticks attached to small mammals were reduced by approximately 50%.
- These interventions “significantly reduced owner-reported cases of tick-borne diseases in outdoor pets,” the authors point out.
- However, “neither intervention (nor both combined) was associated with reductions in either human encounters with ticks or self-reported cases of tick-borne disease.”
- “In neighborhoods with active TCS bait boxes, populations of blacklegged ticks (Ixodes scapularis) were not reduced over time in any of the three habitat types tested (forest, lawn, shrub/garden).”
- “There was no significant effect of Met52 on tick abundance overall…”

Related Articles:

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References:

1. Ostfeld RS, Mowry S, Bremer W, et al. Impacts Over Time of Neighborhood-Scale Interventions to Control Ticks and Tick-Borne Disease Incidence. Vector Borne Zoonotic Dis. Mar 2023;23(3):89-105. doi:10.1089/vbz.2022.0094
