

Strategies for Tick Control

Concern about ticks and the various diseases they can spread is a **very real issue** for residents of this part of the country. Often the first response may be, “What can I spray to keep my family safe?” Before making any choices, it would be wise to consider various strategies.

PERSONAL PROTECTION

First and foremost are taking **personal protective** measures which are inexpensive and have been proven to be the **most effective strategy**. These include careful and regular body checks of all family members (including pets), wearing light colored clothing with long sleeves and long pants when working outside, showering immediately after working outdoors, and washing and drying clothes at high temperatures to kill any remaining ticks on clothing. Keep pets out of areas that may have ticks.

YARD MODIFICATIONS

Modifications to your yard include **the removal of barberry** (*Berberis thunbergii*) which has been proven to be an attractive place for ticks to reside, eliminate or discourage places that may be moist (under groundcovers, etc.), develop a border of wood chips or gravel between lawn and woods, move children’s play areas away from wooded areas, etc.

BIOLOGICAL CONTROLS

A naturally occurring fungus, *Metarhizium anisopliae*, has recently become available under the name **Met-52**. Residential trials in Connecticut and New Jersey showed good control of nymphal ticks. This fungus poses minimal risk to non-target species and does not harm many beneficial insects such as bees, green lacewings, lady beetles, or earthworms. It is offered by a number of different companies available on the internet.

TICK BOXES VS. TICK TUBES

Recommended: Tick Boxes marketed by Tick Control System – These are boxes which attract mice where a dose of insecticide (fipronil) is applied which kills ticks. In field trials this system reduced the tick population by as much as 88% in one year. Boxes are placed by professionals around the perimeter of a property and must be replaced once a year. For information go to www.tickboxtcs.com.

NOT recommended: Tick tubes filled with permethrin treated cotton balls have been on the market since the late 1980s. However, studies have shown them to be ineffective in reducing numbers of infected ticks. (Communication from Kirby Stafford, CAES). Also, the permethrin treated cotton can become separated from the tubes and pose risks to pollinators.

SPRAYING WITH BOTANICAL INSECTICIDES

Botanical insecticides may be safer than traditional chemical compounds but usually are less effective. They are **not regulated by the government** and usually are not standardized for the amount of active ingredient. **Most have not been tested for effectiveness and/or toxicity to bees.**

Cedarwood oil: A number of commercial applicators use cedarwood oil which is derived from various species of cedar and junipers. A recent publication from the Xerces Society states “product labels recommend not applying when bees are active, suggesting **it may have some contact toxicity** or other negative effect on bees and other beneficial insects.” More studies are needed.

Garlic Oil: Effective as a deterrent to ticks and mosquitoes but more scientific studies are needed regarding effectiveness and risk to bees. A recent publication from the Xerces Society says that garlic oil can be repellent to foraging honey bees and **toxic to honey bee workers and larvae** (*Organic Pesticides: Minimizing Risks to Pollinators and Beneficial Insects*).

SPRAYING WITH TOXIC CHEMICALS

Spraying with toxic chemicals is an option; however a recent study found that although such sprays did reduce the number of ticks, there was **no correlation with incidence of tick-borne disease**. (“Effectiveness of Residential Acaracides to Prevent Lyme and Other Tick-borne Diseases in Humans,” Hinckley, et al, *Journal of Infectious Diseases*, 2018).

If one still chooses to spray, it is wise to be informed about the various products that may be used and the limitations of spraying itself. If using a commercial applicator, **find out what chemicals will be used**. Harsh chemicals, which should be avoided, fall into these broad categories:

- **Carbamates** such as carbaryl (Sevin) are **extremely toxic to bees and beneficial insects and moderately toxic to fish**.
- **Pyrethrins** are frequently used in combination with piperonyl butoxide or other chemicals. Pyrethrins are toxic to bees **and highly toxic to cats, fish and other aquatic organisms**.
- **Pyrethroids** is a class of synthetic compounds which includes **permethrin**. Permethrin is **extremely toxic to bees and fish and highly toxic to cats**.

Other considerations about spraying:

- Pesticides should not be applied near wetlands, streams, ponds, etc. Even organic pesticides can be toxic to fish and aquatic species.
- Any beneficial effects from spraying are effective only when you are in the yard.

CONCLUSION: *A combination of the above strategies may be employed to reduce risk of contact with ticks. Always look for the least toxic alternatives. Personal protection is most effective when done regularly.*

