

REQUEST FOR *Bti* GRANULES – 30 OUNCE CONTAINER ONLY

DO NOT DISTRIBUTE MORE THAN 1 CONTAINER PER MONTH, PER ADDRESS

30 ounce container treats 1/2 acre of standing water

FYI: Each Container Cost SCMAC \$7.17

DATE _____ TOWNSHIP DISTRIBUTING PRODUCT _____

RESIDENT INFORMATION: Must be filled out completely by resident. PLEASE PRINT

NAME _____ TELEPHONE NUMBER (____) _____

ADDRESS _____ CITY _____

ZIP _____ TOWNSHIP _____

SCMAC is required by the State of Michigan to keep accurate records of all insecticide applications throughout the County of Saginaw.

Indicate below where you will be treating standing water on your property

LIABILITY WAIVER OF CLAIMS

In consideration of the receipt of 1 – 30 Ounce Container *Bti* granules from the Saginaw County Mosquito Abatement Commission, I waive all claims for damage or loss to my person and/or property that may be caused by the application of the *Bti* granules to my property.
(Maximum ONE container per Month)

I certify that I have received and reviewed the label for the *Bti* granules and a representative for Saginaw County Mosquito Abatement Commission discussed the contents of the label with me.

Homeowner's Signature

Township/Village Representative's Signature

BTI GRANULES INFORMATION SHEET

30 OUNCE CONTAINER

The following information addresses the most common questions asked by residents or township/village offices regarding *Bti* safety, the effect on non-target species, how long the product last, etc.

Apply **ONLY** to standing water that is breeding mosquitoes. **This product does not have a residual, so if larvae are not present DO NOT TREAT! NEVER** apply product to **DRY** areas.

It is very easy to determine if your standing water is breeding mosquitoes. Use a cup or a dipper to check the water for larvae. Immature mosquitoes are referred to as “wigglers” because of their wormlike appearance. Reference the following page for a diagram of the various stages of the mosquito life cycle. **DO NOT** treat water if no mosquito larvae are present. The mosquito **pupa** is shaped like a comma and spends a majority of time at the surface of the water. Pupa does not feed as it has no functional mouthparts. **DO NOT** treat pupa with *Bti*, call Mosquito Control (989) 755-5751.

✓ **HOW MUCH PRODUCT DO I USE?**

- ✓ **½ Teaspoon will treat 25 square feet of standing water**
- ✓ **1 Tablespoon will treat 75 square feet of standing water**
- ✓ **DO NOT over treat!**

✓ **WHEN SHOULD I TREAT MY SMALL BREEDING AREA WITH GRANULES?**

Only treat standing water that is breeding mosquito larvae. In Saginaw County the early season mosquitoes located in woodlots are the peskiest species. Woodlots that are treated aerially during our Spring Aerial Larviciding Program (Mid-April), **DO NOT** need to be checked for larva and treated if necessary until mid-May. If you have standing water in a wooded area that is not treated with the aircraft, begin checking your woodlot for breeding around the third week in April. Treat **ONLY** if the water remains for more than 5 to 7 days and larvae are present.

✓ **HOW LONG WILL IT LAST? OR HOW OFTEN DO I RETREAT THE STANDING WATER?**

Bti granules do not have a residual. Once *Bti* is applied to standing water breeding mosquito larvae, the larvae will die off within 48 hours. Application can be repeated every 7-14 days **IF** larvae are present. **DO NOT** over treat (more is NOT better) it is just wasting the product.

✓ **DOES USING THIS PRODUCT PRESENT A RISK TO HUMANS?**

All published data indicates that *Bti* is not a significant toxicant using conventional exposure routes (inhalation, skin, and/or oral.) Which means this product presents minimal risks if your children play in standing water after *Bti* was applied.

✓ **WILL GRANULES HURT MY DOG? CAT? PONY?**

Bti is among the most environmentally friendly products available targeted specifically for mosquitoes and blackflies (applications for blackflies are made in streams). This material is a general use product labeled for community-wide mosquito control.

Aedes vexans is Saginaw’s most prevalent species. These mosquitoes develop after heavy summer rains. Apply product **ONLY** if larvae are present.

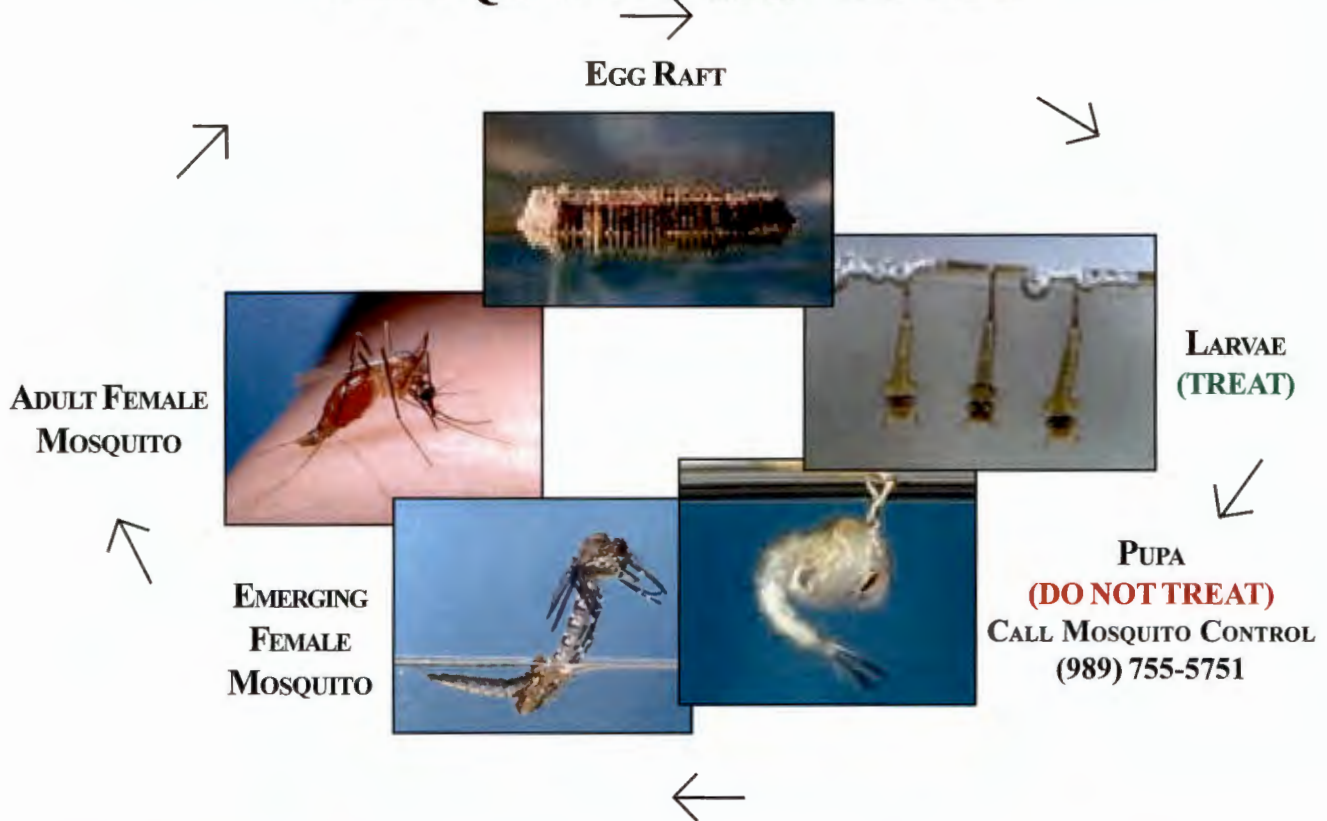
It is **VERY IMPORTANT** when using any insecticide to **read and follow the label**. Insecticides, if used correctly, are beneficial to man and animals. Incorrect use can be harmful. Make sure to always wear protection on your hands and wash your hands with soap and water after treatment. Please contact Saginaw County Mosquito Control if you have any additional questions or concerns at (989)755-5751 or visit our website at www.scmac.org.

Thank you for helping control mosquitoes in your community, it benefits all of us!

Updated 4/17

DO NOT apply *Bti* product to grass/dry areas or flowing water.

MOSQUITO LIFE CYCLE



FIRST STEP: Check standing water to make sure larvae are present prior to treatment. *Bti* does not have a residual and will not prevent future larvae from hatching. **DO NOT** treat water if no larvae are found!

The **larvae** are legless and spend a majority of time at the surface of the water. A mosquito larva is commonly referred to as “wiggler”, due to the lashing movements of the abdomen that move them forward, backward, or sideways in the water. Feeding during the larval mosquito stage is accomplished through ingestion of particles filtered from the water column or surface, removal and ingestion of surface biofilms, shredding of leaves, and predation of other larvae and insects their own size or smaller. **TREAT** with *Bti*.

The mosquito **pupa** is shaped like a comma and spends a majority of time at the surface of the water. Pupa does not feed as it has no functional mouthparts. **DO NOT** treat with *Bti*, call Mosquito Control.

Ponds only need to be treated where the water meets the grass or weeds and **if** larvae are present. The large surface area of a pond has wave action that prevents mosquito larvae from surviving. Ponds with fish, normally do not breed mosquitoes.

ONLY apply *Bti* to standing water with mosquito larvae.

DO NOT apply to grass/dry areas or flowing water.

Call Mosquito Control at (989) 755-5751 if you have an adult mosquito problem.
For additional information, please visit our website at www.scmac.org.

**SAGINAW COUNTY MOSQUITO ABATEMENT COMMISSION
“SCMAC”**

***Bti* APPLICATION GUIDE**

USE IN STANDING WATER TO TREAT MOSQUITO LARVAE ONLY

DO NOT APPLY TO Flowing Water, Grass, or Dry Areas
Check to make sure larvae are present before applying *Bti*



30 oz Container of Granules

Treats 1/2 acre of standing water

1 teaspoon per 25 square feet

1 tablespoon per 75 square feet

Reapply every 7 to 14 days if larvae are present

NO Residual

Available at some township/village offices and SCMAC

Limited to one (1) container per month, per address May - August if needed

SCMAC Cost \$7.17

(Retail Cost \$17.97 - \$26.99)

40 lb Bag of Granules

Treats 8 acres of standing water

1 teaspoon per 25 square feet

1 tablespoon per 75 square feet

Reapply every 7 to 14 days if larvae are present

NO Residual

Available at SCMAC - Must own at least 10 acres of property

Limited to one (1) bag per year, per address if needed

SCMAC Cost \$51.18

(Retail Cost \$170.95 - \$206.39)



**PRODUCT IS FREE TO SAGINAW COUNTY RESIDENTS
TO BE APPLIED IN SAGINAW COUNTY ONLY**

211 CONGRESS AVENUE | SAGINAW, MI 48602

989-755-5751 | SCMAC.ORG



Mosquito Beater

"WSP"

KILLS MOSQUITOES

BEFORE THEY HATCH...

...including those which may carry West Nile Virus or which can transmit heartworm disease to dogs and cats



- Kills developing mosquitoes (mosquito larvae) before they become breeding, biting adults, including those which can carry West Nile virus, Encephalitis and Equine Encephalitis.
- Quickly controls mosquito larvae in 24 hours.
- Works even in stagnant, polluted or algae prevalent water.
- Can be used in all types of standing water sites where mosquitoes breed, except finished, treated human drinking water sources (See Directions for Use for specific use sites).
- Can be used in conjunction with other Bonide® Mosquito Beater® products.
- Will not harm fish or other beneficial aquatic organisms.

ACTIVE INGREDIENTS:

Beauveria bassiana subsp. *larvicida* 1.7%

(Concentration to 100:1 E.P.)

INERT INGREDIENTS 98.3%

(E.P.)

*The active ingredient percentage does not include product for Encephalitis and Equine Encephalitis.

(E.P.)

Net Weight 36 oz. (1.02 kg)

(E.P.)

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(E.P.)

MOSQUITO BEATER WSP

EPA Reg. No. 4-455

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

BONIDE® Mosquito Beater® WSP™ is a highly selective microbial insecticide, effective against mosquito larvae in standing water. The active ingredient, *Beauveria bassiana* subsp. *larvicida* (or Bt) kills mosquito larvae upon ingesting. BONIDE® Mosquito Beater® WSP™ will not harm fish, amphibians or other [beneficial] aquatic organisms.

BONIDE® Mosquito Beater® WSP™ can be applied to any water site except, 1) New York State waters, 2) treated, finished water reservoirs or drinking water receptacles, when the water is intended for human consumption. Use BONIDE® Mosquito Beater® WSP™ to control mosquito larvae in standing water in irrigation or drainage ditches, pastures, livestock watering troughs/ponds/tanks, lawns, woodland pools, snow melt pools, tidal water, salt marsh, catch basins, storm water retention basins, water gardens, flower pots, rain barrels, roof gutters, bird baths, tree holes, unused swimming pools or spas, discarded automobile tires, and any other location around homes or other buildings where water can collect and form a breeding ground for mosquitoes and remain for extended periods.

BONIDE® Mosquito Beater® WSP™ is provided as granules, in a shaker container, to be applied directly on the surface of the water to be treated. These granules then slowly release the long term Bt Larvicide.

HOW TO APPLY: (APPLICATION RATE) 0.2 oz. will treat up to 50 sq. ft. of water surface. [An area approximately 7' x 7'] When treating larger areas, distribute uniformly on the water surface to ensure adequate dispersion of the granules. Lower rate (0.2 oz/50 sq. ft.) can be used in clear water, against low larval infestations or young larvae (from egg hatch to mid-third instar). When larger larvae (late third instar to early fourth instar) predominate, larval populations are high, or water is polluted and/or algae are prevalent, use the higher rate of 0.4 oz per 50 sq. ft.

The following table can be used as a guide for determining how much BONIDE® Mosquito Beater® WSP™ to use in a particular situation. Application rates for areas smaller than 50 sq. ft. are listed after the table.

Water Condition	Mosquito Infestation	Water surface area to be treated	
		Up to 50 sq. ft.	100 sq. ft.
Clear water (containing little or no algae or other organic matter)	Light infestation or small larvae	0.2 oz.	0.4 oz.
	Heavy infestation or large larvae	0.4 oz.	0.8 oz.
Polluted water, high organic matter, or algae present	Light infestation or small larvae	0.4 oz.	0.8 oz.
	Heavy infestation or large larvae	0.8 oz.	0.8 oz.

SMALL AREA APPLICATION: To apply this product to small, specific areas such as bird baths, tree holes, flower pots, etc. ...sprinkle granules onto the area to be treated, at the following rates:

AREA TO BE TREATED	QUANTITY TO USE
1 to 12½ sq. ft.	¼ of a tsp
12½ to 25 sq. ft.	½ of a tsp
25 to 37½ sq. ft.	¾ of a tsp

Application can be repeated every 7 to 14 days, as needed, if environmental conditions favor continuous breeding of mosquitoes. Longer periods of mosquito suppression may result where sufficient numbers of aquatic parasites or predators of mosquito larvae are present, since these are not affected by BONIDE® Mosquito Beater® WSP™ and contribute to overall reduction in mosquito populations.

MOSQUITO BEATER WSP

Epa Reg. No. 4-455

STORAGE & DISPOSAL

Storage: Store and transport in an upright position. Store in a cool dry area inaccessible to children or pets.

Pesticide Disposal: If empty—Nonrefillable. Do not reuse or refill this container. Place in trash or offer for recycling if available. If partly filled—Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if inhaled or absorbed through the skin. Avoid contact with skin or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

ENVIRONMENTAL HAZARDS: Do not apply to treated, finished drinking water reservoirs or drinking water receptacles, when the water is intended for human consumption.

FIRST AID

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact the National Pesticide Information Center at 1-800-858-7378 for emergency medical treatment information.

If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

For information on pesticide products (including health concerns, medical emergencies, or pesticide incidents), call the National Pesticide Information Center at 1-800-858-7378.

Buyer's Guarantee Limited to Label Claims.
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Bonide Products, Inc.
6301 Suñer Road
Oriskany, NY 13424

FREQUENTLY ASKED QUESTIONS ABOUT MOSQUITOES

How long do mosquitoes live? Do they overwinter?

Lifespans vary by species. Most adult female mosquitoes live 2-3 weeks. Some species that over-winter can live as long as 6 to 8 months. Only adult female mosquitoes spend the cold months hidden in protected places, such as hollow logs, animal burrows, garages, and attics. When warm weather returns, the females must first find a blood meal to develop her eggs. Once they've fed, the female mosquitoes lay their eggs in whatever standing water they can find.

How far can mosquitoes fly?

Mosquito species preferring to breed around the house, like the Asian Tiger Mosquito, have limited flight ranges of about 300 feet. Most species have flight ranges of 1-3 miles. Certain large pool breeders in the Midwest are often found up to 7 miles from known breeding spots. When caught in updrafts that direct them into winds high above the ground, mosquitoes can be carried great distances.

Why do mosquitoes bite?

Female mosquitoes require blood to develop fertile eggs. Males do not lay eggs, thus, male mosquitoes do not bite. The females are the egg producers and "host-seek" for a blood meal. Female mosquitoes lay multiple batches of eggs and require a blood meal for every batch they lay. Few people realize that mosquitoes rely on sugar as their main source of energy. Both male and female mosquitoes feed on plant nectar, fruit juices, and liquids that ooze from plants. The sugar is burned as fuel for flight and is replenished on a daily basis. Blood is reserved for egg production and is acquired less frequently.

Why do mosquitoes leave welts when they bite?

When a female mosquito pierces the skin with her mouthparts, she injects a small amount of saliva into the wound before drawing blood. The saliva makes penetration easier and prevents the blood from clotting in the narrow channel of her food canal. The welts that appear after the mosquito leaves is not a reaction to the wound but an allergic reaction to the saliva injected to prevent clotting. In most cases, the itching sensation and swellings subside within several hours. Some people are highly sensitive and symptoms persist for several days. Scratching the bites can result in infection if bacteria from the fingernails are introduced to the wounds.

Why are some people more attractive to mosquitoes than others?

Some people are highly attractive to mosquitoes and others are rarely bothered. Female mosquitoes use the CO₂ we exhale as their primary cue to our location. Once they have landed, they rely on a number of short range attractants to determine if we are an acceptable blood meal host. Folic acid is one chemical that appears to be particularly important. Fragrances from hair sprays, perfumes, deodorants, and soap can cover these chemical cues. They can also function to either enhance or repel the host seeking drive. Dark colors capture heat and make most people more attractive to mosquitoes. Light colors refract heat and are generally less attractive. Detergents, fabric softeners, perfumes, and body odor can counteract the effects of color. What can be safely stated, though, is that ingestion of garlic, vitamin B12 and other systemics has been proven in controlled laboratory studies to have no impact on mosquito biting. Conversely, eating bananas did not attract mosquitoes as the myth suggests, but wearing perfumes does. People drinking beer have been shown to be more attractive to mosquitoes. Limburger cheese has also been found to be attractive. Scientists have theorized that this may explain why some mosquitoes are attracted to human feet.

Where do mosquitoes live and breed and how do they get into my house?

Mosquitoes lay their eggs in moist areas, such as standing water. The eggs become larvae that remain in the water until they mature into adults and fly off. Weeds, tall grass, and shrubbery provide an outdoor home for adult mosquitoes. Many mosquitoes will breed in any container that holds water, such as flowerpots, wading pools, or discarded tires. Mosquitoes are singularly adept at entering houses through any portal available, be it through broken window or door screens, attic soffits, or through bathroom exhaust vents. A favorite resting spot is the garage.

What can homeowners do to reduce mosquito bites?

If possible, schedule your activities to avoid the times when mosquitoes are most active - usually dawn and dusk. You should also dress in light, loose-fitting clothing. If you have a deck, light it using General Electric yellow "Bug Lights". These lights are not repellent, but do not attract mosquitoes like other incandescent lights. Mosquitoes are relatively weak fliers, so placing a large fan on your deck can provide a low-tech solution. Citronella candles have a mild repellent effect.

How can I protect my family and myself from mosquito-borne infections?

Although your chances of being infected with a disease through a mosquito bite are small, there are simple steps you can take to reduce your risk of being bitten. Ways to reduce mosquito populations around your home or property:

- Dispose of tin cans, plastic containers, ceramic pots, or similar water-holding containers.
- Dispose of used tires, which are a significant mosquito-breeding site.
- Drill holes in the bottoms of outdoor recycling bins so they can drain freely.
- Clean clogged roof gutters and make sure they drain properly. Remove leaf debris from yards and gardens.
- Drain temporary pools of water or fill with dirt. Use landscaping to eliminate standing water that collects on your property.
- Drain water from pool covers. Turn over wading pools and wheelbarrows when not in use.
- Change the water in birdbaths twice weekly.
- Clean vegetation and debris from edges of ponds.
- Clean and chlorinate swimming pools, outdoor saunas, hot tubs, and other water features, such as fountains and garden ponds.

Should we stay indoors when mosquitoes are out?

It is not necessary to stay indoors. However, try to reduce your risk of being bitten by mosquitoes. In addition to reducing standing water in your yard, take the following steps:

- Make sure all windows and doors have screens, and that screens are free of rips, tears and holes.
- Cover your skin as completely as possible. Wear shoes and socks, long pants, and a long-sleeved shirt when outdoors for long periods or when mosquitoes are most active.
- Use mosquito repellent. Always apply according to label directions. Information on choosing and safely using insect repellents is on the U.S. Environmental Protection Agency (EPA) website at <http://cfpub.epa.gov/oppref/insect/>.
- Cover baby carriers and strollers with mosquito netting when outdoors.
- Stay indoors at sunrise, sunset, and early in the evening when mosquitoes are most active.

Do mosquito sprays affect animals other than mosquitoes?

The extremely small droplet aerosols utilized in adult mosquito control are designed to impact primarily adult mosquitoes. Degradation of these small droplets is rapid, leaving little or no residue in the target area at ground level.

Which repellent works best?

N,N-diethyl-3-methylbenzamide (DEET) remains the standard by which all other repellents are judged. DEET was developed by the U.S. Department of Agriculture and was registered for use by the general public in 1957. It is effective against mosquitoes, biting flies, fleas, and ticks. The recent additions of picaridin and oil of lemon eucalyptus are remarkably close in effectiveness to DEET. The American Academy of Pediatrics says that all family members over the age of two months can use DEET-based repellents with up to 30% concentration with confidence.

DEET-based repellents have been around for more than 50 years but these products continue to improve with new fragrances, new formulations, new product types, and, best of all, products that feel nice when applied. The DEET-based repellent fragrances are pleasant to use and range from fruity to woody neutral scents. Unscented products have a slight alcohol odor (there's alcohol in the formulation) until they dry on the skin. Folks who tend to be allergic to fragrances should try the unscented products.

Today's products start out at a concentration of 5% (lasts 90 minutes or so) and range up to 100% (for approximately 10 hours of protection from bites). Pick one that matches your activity. For an outdoor family barbecue in the evenings, a 10% product is fine. It will help protect from bites for approximately 90 minutes to two hours. Products are available in aerosols, pump sprays, lotions, creams, and even towelettes. There are water resistant and water repellent products. Most apparent repellency failures with DEET are due to misapplications, so care should be taken to apply it thoroughly (avoiding the eyes and mucous membranes) and to reapply when necessary. New polymerized 30% DEET cream formulations provide excellent protection not significantly exceeded by higher DEET concentrations. Physicians recommend that a formulation of no more than 10% DEET be used on children, but formulations of over 30% can be used if label directions are followed.

In April of 2005, the Centers for Disease Control and Prevention (CDC) began recommending two new active ingredients as safe, effective repellents. The first of these is picaridin, a synthetic developed by Bayer Corporation in the 1980s. This repellent is the most widely used repellent in the world outside of the United States and is marketed as Cutter Advanced. Picaridin is odorless, has a pleasant feel and doesn't plasticize like DEET. Studies have shown it to be as fully repellent to mosquitoes as DEET and can also be applied on infants as young as 2 months. The 15% picaridin formulation, Cutter Advanced Sport, is also an effective repellent for ticks. The other repellent, often the choice of those wanting a natural product, is oil of lemon-eucalyptus, sold as Repel®. Repel is a 40% formulation of naturally-derived eucalyptus and has a pleasant scent and feel without any plasticizing properties. It is also effective at repelling ticks.

Are pesticides used in mosquito control safe?

Since its inception, the Environmental Protection Agency (EPA) has regulated mosquito control through enforcement of standards instituted by the Federal Insecticide, Fungicide, and Rodenticide Act. This legislation mandated documentation of extensive testing for public health insecticides according to EPA guidelines prior to their registration and use. These data requirements are among the most stringent in the federal government and are met through research by established scientists in federal, state, and private institutions. This process costs a registrant several million dollars per product, but ensures that the public health insecticides available for mosquito control do not represent health or environmental risks when used as directed. Indeed, the five or six adulticides currently available are the selected survivors of literally hundreds of products developed for these uses over the years. The dosages at which these products are legally dispensed are at least 100-fold less than the point at which public health and environmental safety merit consideration. In point of fact, literature posted on the websites of the EPA Office of Pesticide Programs, Centers for Disease Control and Prevention (CDC), American Association of Pesticide Safety Educators, and National Pesticide Information Center emphasizes that proper use of mosquitocides by established mosquito control agencies does not put the general public or the environment at unreasonable risk from runoff, leaching or drift when used according to label specifications. (For the federal government's position on risks associated with mosquito control insecticides, visit <http://www.epa.gov/pesticides>).

The safety profiles of public health insecticides are undergoing increasing scrutiny because of concerns with how the specialized application technology and product selection protect the exposed public and environment. In fact, well over 200 peer-reviewed scientific studies in various national and international refereed journals since 1980 have documented the safety and efficacy of these public health insecticides at label rates in addition to their application techniques.