



# INTEGRATED MOSQUITO MANAGEMENT

## Toledo Area Sanitary District Product Use Descriptions

### Larval & Pupal Control (Larvicides & Pupicides)

*“The treatment of standing water that contains larval mosquitoes before mosquitoes can develop into flying adults.”*

- *Bacillus thuringiensis israelensis* (Bti) products – Granular bacterial product utilized in cooler and “cleaner” floodwater or temporary standing water scenarios. Provides approximately 7 days of control. Most effective on early forms of mosquito larvae. Mode of action is specific to mosquitoes and can be used without adverse effects in sensitive areas.
- *Bacillus sphaericus* (Bs) products – Granular bacterial product utilized in warmer and “dirtier” semi-permanent water scenarios, such as catch basins and tires. Provides residual control for approximately 30 days. Most effective on early forms of mosquito larvae. Mode of action is specific to mosquitoes and can be used without adverse effects in sensitive areas.
- VectoMax® – Granular bacterial product that uses both Bti and Bs as active ingredients. Combines positive attributes of both individual active ingredients. Provides over 30 days of residual control. Can be used in both, clean or dirty waters.
- Natular® – Granular bacterial product that is Organic Materials Review Institute (OMRI) approved. Formulation used by TASD has a 30 day residual control. Used as part of product rotation and resistance management in catch basins. Effective on all stages of mosquito larvae development.
- Altosid® – Engineered pellets or tablets of (S)-Methoprene, an insect growth regulator. Prevents larval mosquitoes from developing into viable adults. Provides approximately 30 days of control. Used in abandoned or unused swimming pools.
- Abate®/Tire Abate® – Plaster pellets manufactured with Temephos (an organophosphate insecticide). Specific formulations made for tire applications. Pellet formulation is a heavier product that sinks into water in areas of heavy vegetation. Provides 30+ days of residual control. Effective on all stages of mosquito larvae. Used primarily in early spring floodwaters before vegetation growth inhibits access. Tire formulation used in treatment of discarded or stored tires.
- BVA2®/CocoBear® – Mineral Oil products that are designed to spread a thin coating over the surface of waters where mosquito pupae are found, killing them by suffocation. These are the only products available to control mosquito pupae.
- *Gambusia affinis* – “Mosquitofish” distributed to homeowner water gardens and small farm ponds to provide biological control of larvae and pupae. Are not used in open waters, ditches, etc.

### Adult Control (Adulticides)

*“Area treatment with insecticides for reducing the number of nuisance mosquitoes and disrupting disease transmission.”*

- Duet® – A dual active ingredient (sumithrin & prallethrin) synthetic pyrethroid. Designed to agitate adult mosquitoes and increase their activity to promote contact with the insecticidal active ingredient. Exclusively used for night fogging applications.
- Biomist 3+15® – Synthetic pyrethroid (permethrin) that can be used in daytime misting operations or in nighttime fogging operations.
- Mosquitomist 1.5® & Mosquitomist 2.0® – Organophosphate insecticides (chlorpyrifos) that can be used in daytime misting operations or nighttime fogging operations.
- Anvil 2+2® – Synthetic pyrethroid (sumithrin) that can be used in daytime misting operations or in nighttime fogging operations.
- Zenivex® - Synthetic pyrethroid (etofenprox) that can be used in daytime misting operations or in nighttime fogging operations.