

Commissioners Meeting Presentation

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METROPOLITAN MOSQUITO CONTROL DISTRICT

About Me!

- East Tennessee native
- Ph.D. in Entomology and Toxicology from Iowa State University
- Expertise in field efficacy evaluations, product development, insecticidal modes of action, and resistance monitoring
- Avid fly angler and fly tyer
- Fishing Guide



Environmental Stewardship: How?

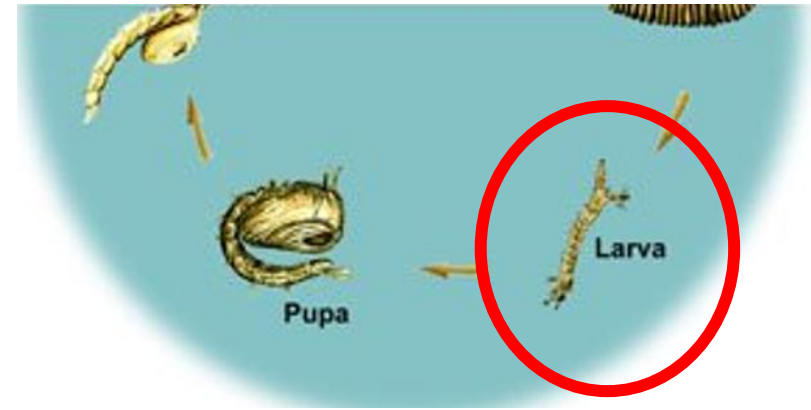
- In addition to caring for the people of the 7-county metro area, we also strive to be good stewards of our control materials and the environment.
- Proper control material choices
- Using appropriate doses
- Correct application type
- Proper timing applications
- Using rotational options



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Methoprene

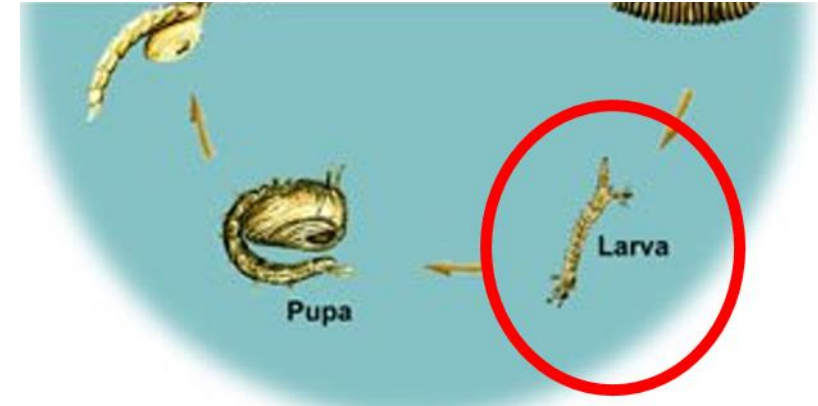
- Insect Growth Regulator (IGR)
- Juvenile Hormone mimic
- Functions by contact
- Functions by preventing the larvae from emerging into an adults
- Pre-hatch, 30-day control
- Parts per billion activity levels



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Spinosad

- Natural substance produced by a soil bacterium
- Originally discovered in a rum distillery
- Can be ingested or through contact
- Functions by impacting the mosquito nervous system
- Pre-hatch, 30-day control
- **Approved for use on organic farms**

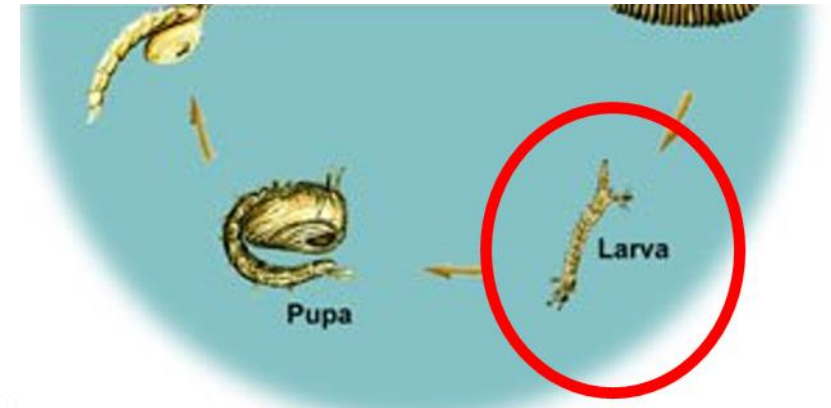


NATULAR®



Bacillus thuringiensis israelensis (B.t.i.) and Bacillus sphaericus (B.s.)

- Soil bacteria and spores that need to be ingested by the mosquito larvae
- Once ingested, interactions in the insect gut cause pores (ulcers) to form
- Very target specific, due to alkaline environment in the mosquito gut
- We also use liquid form for black flies in rivers and streams.
- 24-48 hour efficacy



VectoBac® G



Helicopter Calibrations

- Each year, we spend the time needed to ensure that our helicopters are calibrated to drop the correct amount of material when needed
- This calibration was completed on 4/8 and 4/11 of this year
- In total, over 120 flights were completed leading to 45 completed calibrations: 7 helicopters, 6 pilots, and 8 treatments/rates



Drone Calibrations

- We completed a similar process for our drone calibrations as well
- Drones are now ready to apply products and will be used to treat hard to reach sites that are too small to necessitate helicopter applications
- New drones have been added for this year





Pyrethroids

- Deployed when adult numbers are too high or when disease prevalence necessitates it
- Used around public events (MN State Fair)
- Derived from chrysanthemum flowers
- Commonly used in everyday life: clothing, pet care
- Function by targeting the insect nervous system
- The only class of compounds used for adult control by MMCD
- Proper training ensures safe use of the compounds
- 12-hour efficacy (ULV), 4-7 days (Barrier)

