PRVA PRIVATNA GIMNAZIJA S PRAVOM JAVNOSTI VARAŽDIN

APRIL 2026

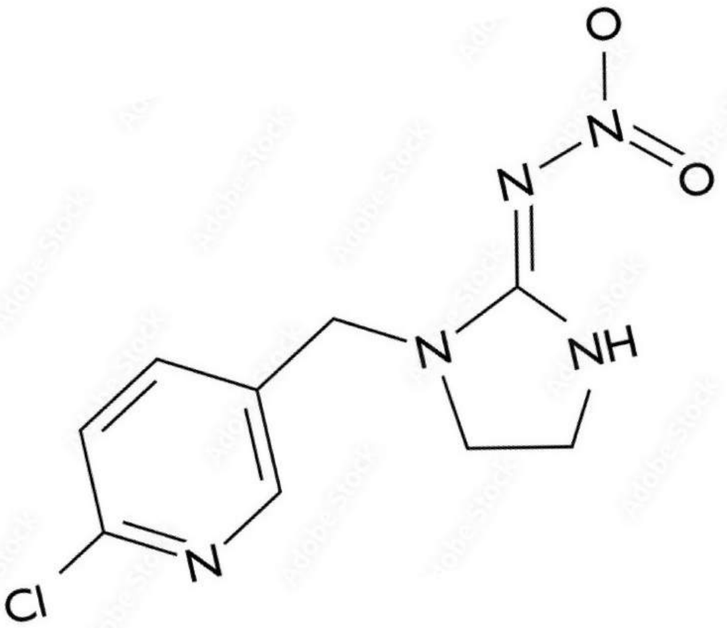
HOW TO USE BIOKILL?

Tiny Traces, Lasting Consequences:
Chemical Micro-Pollutants and Mosquito Development

Green Innovations
Natural Sciences for a Better World
YRoNS 2026

Presented by Kaja Marinović & Igi Kranjčić Jurčec

Imidacloprid



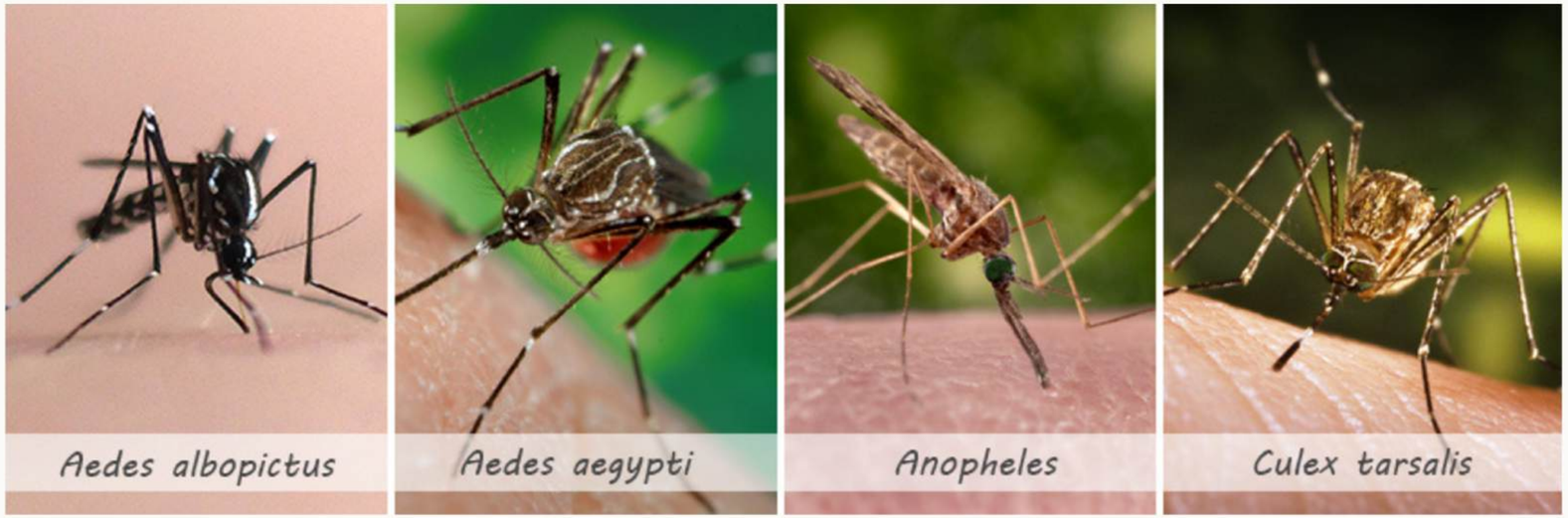
- synthetic insecticide used to protect crops from harmful insects
- belongs to the neonicotinoid group and affects the nervous system of insects, causing paralysis and death. It is absorbed by plants and makes them toxic to pests

The lab

1. Purified water from the river using filter paper
2. Separated samples into 2 containers
3. Prepared samples by separating them into test tubes using SE
4. Prepared imidacloprid
5. Prepared the machine for the methodology using a computer
6. Separated mosquitoes into 6 different containers
7. Added different concentrations of insecticide
8. Observed how mosquitoes were affected by different concentrations of insecticide

MOSQUITOES

- family Culicidae and arepart of the order Diptera
- body is narrow and elongated, with long legs and a thin proboscis used for feeding.
- found almost all over the world, except in extremely cold regions such as Antarctica.
- more than 3,000 species of mosquitoes



MOSQUITOES BODY STRUCTURE

HEAD

large compound eyes → good vision

antennae → detect smells and carbon dioxide

proboscis → used for piercing skin and sucking fluids

THORAX

wings and three pairs of legs

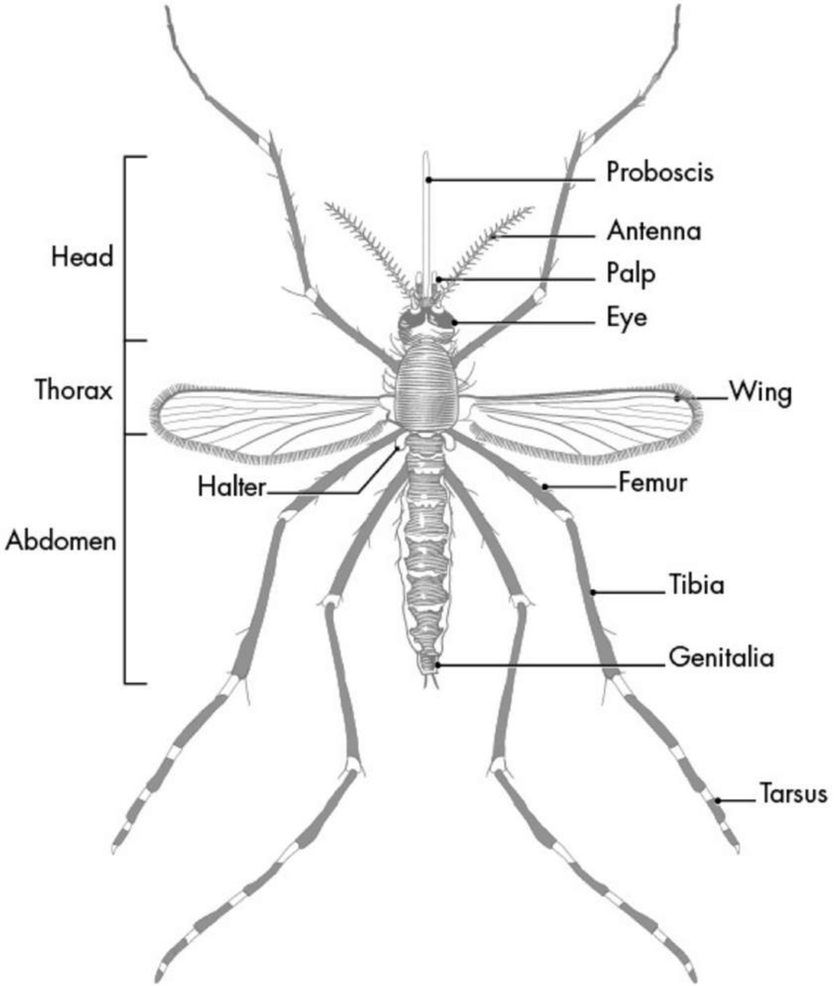
Legs help with stable landing

Wings are thin and transparent

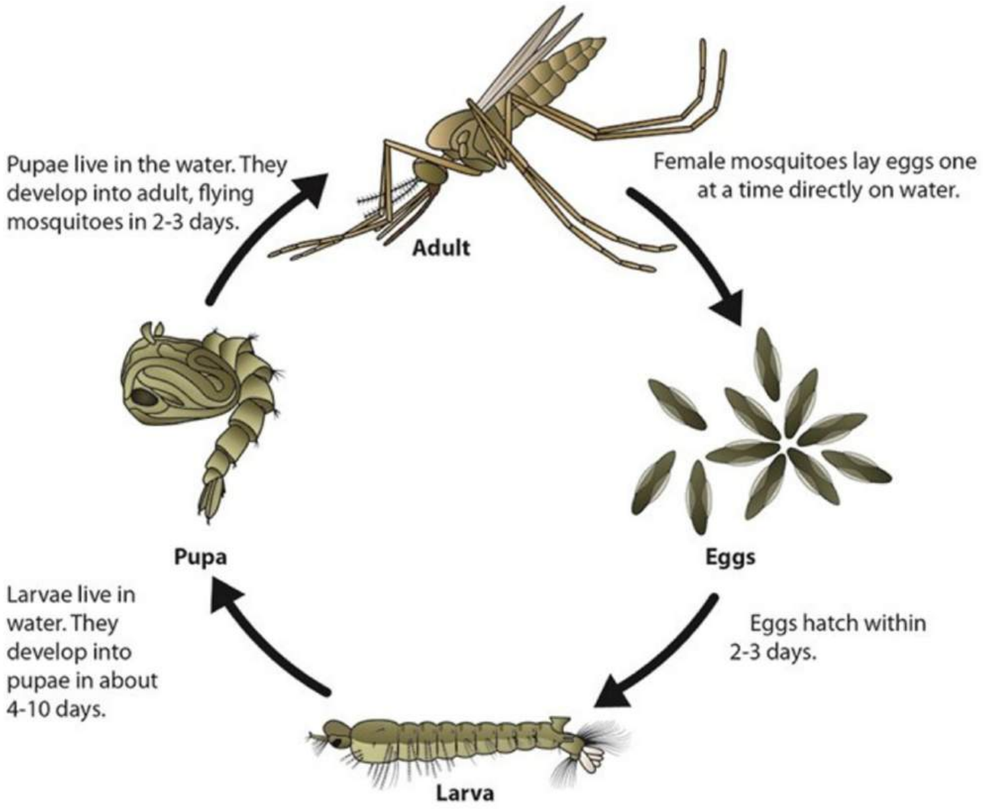
ABDOMEN

Contains digestive system

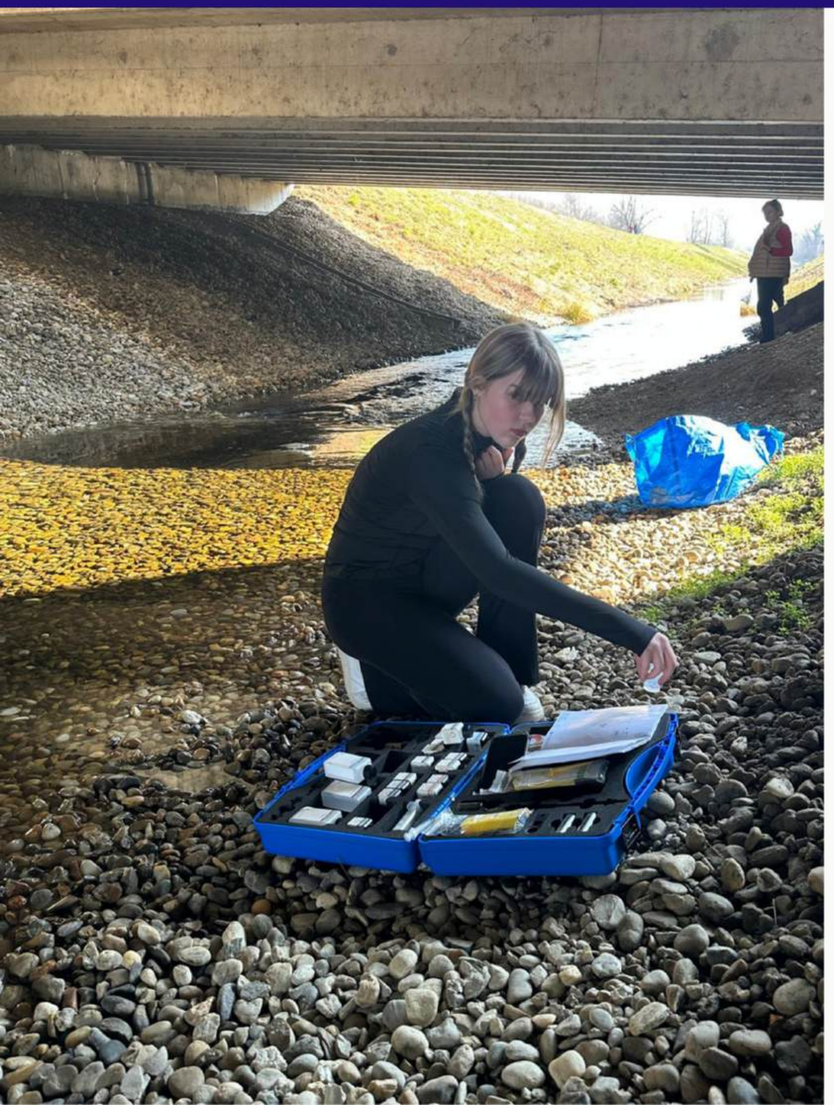
Contains reproductive system



MOSQUITOES LIFE CYCLE



Why did we choose this topic?



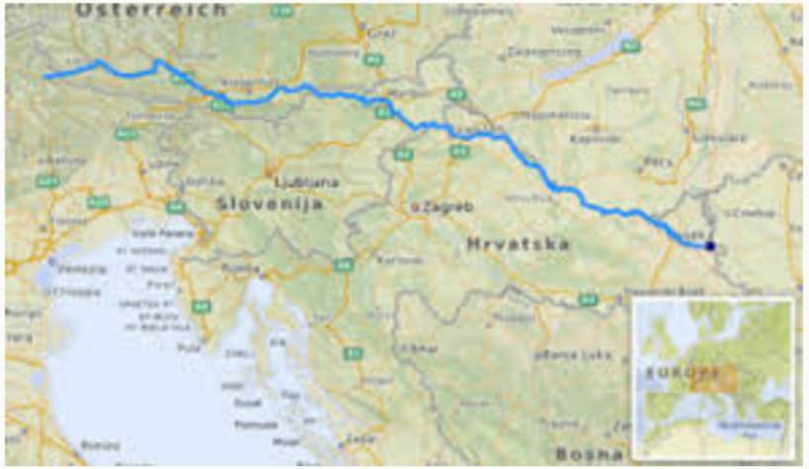
- see which chemicals are found in our local river Drava

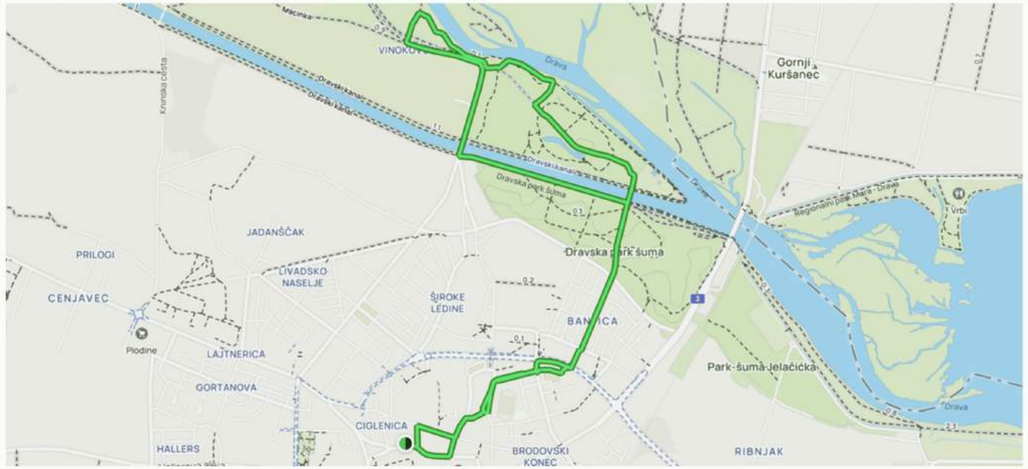
- see how animals react to the presence of imidacloprid in the water

- how does it affect the different animals who live in the river's life cycles

The field work

- find an area that would be suitable for the mosquito breeding area. The river Drava in North - Western Croatia
- nets and tweezers to capture the organisms living in the river, primarily mosquitoe’s eggs and larvae.





Water samples

Observations

10 larva in each jar

V= 2 L, oxygen supply

1. jar: 0,0125 ppm = 3 days
2. jar: 0,0225 ppm = 2 days
3. jar: 0,05 ppm = 1 day
4. jar: 0,075 ppm = 1 day
5. jar: 0,10 ppm = 5 h
6. jar: controlle water = 5 days - to adults

In conclusion

- mosquitoes can survive in lower concentracions of imidacloprid
- higher concentrations = mosquito larvae last less

Literature

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Thanks!

in collaboration with: