INFLUENCE OF PLASTIC TRAP COLOUR ON OVIPOSITION AND DEVELOPMENT OF *Aedes* sp. MOSQUITO

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Introduction

The goals of this project are to investigate the influence of different colours of mosquito traps on the oviposition and development of mosquito and to determine whether the seasons will affect the number of mosquitoes found in mosquito traps. The research was inspired by a similar reasearch done by the schools GLOBE group in 2016.

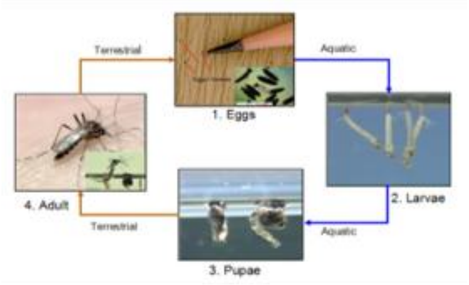

Figure 1: life cycle of a mosquito
Autor: Dr. James Nardi, iz knjige The World Beneath Our Feet: A Guide to Life in the Soil

Research questions and hypothesis

Research questions:

- How does trap colour influence oviposition and abundance of *Aedes* sp.mosquitoes?
- Are there seasonal changes in oviposition and abundance of *Aedes* sp. mosquitoes?
- Did the abundance and genera of observed mosquitoes change during the period between 2016 and 2021?

It is hypothsised that:

- oviposition and abundance will be greater in traps of darker colours
- oviposition and abundance will be greater during the summer research period
- abundance of mosqitoes will be greater than in 2016

Research methods and materials

Figure 2: plastic traps on the window bench od the biology cabinet
Autor: original work

Table 1: the initial results of physico-chemical analysis of Jana water

$PO4^{-}$ P [mg/L]	0,0
$NO2^{-}$ [mg/L]	0,0
$NO3^{-}$ [mg/L]	0,0
pH	7,5
CH [°]	8,0
TH [°]	8,0
O2 [mg/L]	10,0

Firstly the traps had to be constructed according to the GLOBE mosquito protocols. Those traps were left on the window bench of the school's biology cabinet for a month during April and August. After a month mosquito individuals were counted and obtained data were analysed using Microsoft Excel.

Applying GLOBE Hydrosphere protocols, physicochemical analysis of the Jana water, used in the mosquito traps, was conducted.

Results

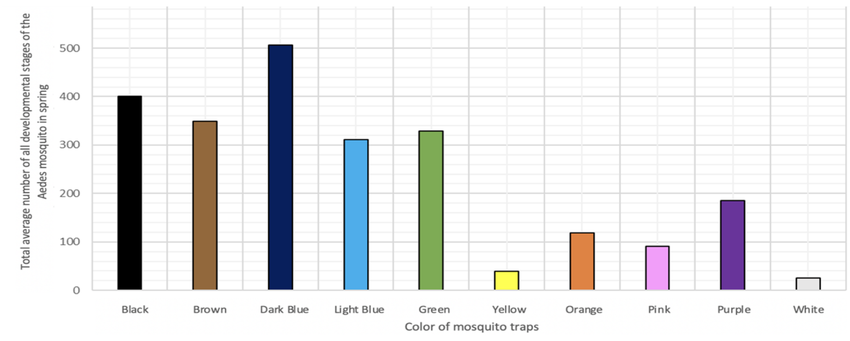

Figure 3 dependence of the total average number of all developmental stages of the Aedes mosquito in the spring period of 2021 on the color of the mosquito traps

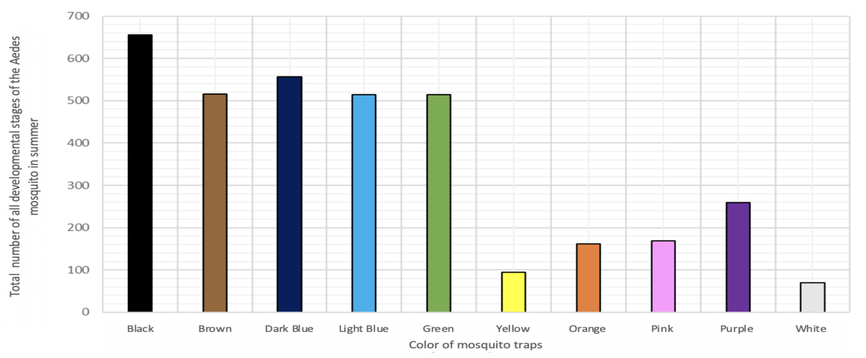

Figure 4 dependence of the total number of all developmental stages of the Aedes mosquito in the summer period of 2021 on the color of the mosquito traps

Discussion and conclusion

The results of the research match the set hypothesis.
From the obtained results we can conclude that mosquitoes prefer traps of darker colours (black, dark blue, brown). Considering their natural environment, mosquitoes probably prefer traps of darker colours since they are more similar to standing waters.
Secondly, we can see that the abundance of mosquitoes of all life stages is greater during the summer period. During the summer period, the temperatures were warmer which allowed mosquitoes to hatch faster.
Comparing to the research done in 2016 only genus *Aedes* was found in 2021 while in 2016 only the genus *Culex* was found. The overall abundance of mosquitoes was significantly grater in 2021 than in 2016.

Table 2: the number of *Culex* mosquito eggs found in mosquito traps in 2016. project

Date	18.4.2016.	25.4.2016.
Mosquito trap materials	**The number of *Culex* mosquito eggs found in mosquito traps**	
Black glass	27	36
Black plastic	/	2
Blue glass	1	0
Green glass	2	0

Some ways the research can be upgraded is by conducting it during all four seasons in a greater number of traps in different locations so the influence of the location could be studied as well. It would be desirable to conduct the physicochemical analysis of the water after the project and compare it to the characteristics of the water before the research.

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