



*Republic of Niger
Region of Zinder
City of Matamèyè*



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Hydrosphere and atmosphere

***Theme: Typology and evolution of the number of
mosquito habitats in Matamèyè***

Globe Teacher
PARAÏSO Halile Fidèle

Responsible Student
Maaroufi Ismaila Abdou

Others students
Ismaël Zakou
Salissou M Nazir
Jamilath Daré

Phone: +227 98207149
Email: paraisofidele@yahoo.fr

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1. TITLE OF THE ARTICLE

Typology and evolution of the number of mosquito habitats in Matamèyè

2. Abstract

The Zika virus is an arbovirus member of the Flaviviridae family of the genus Flavivirus, responsible for Zika fever in humans. It takes its name from the Zika forest in Uganda, where it was first identified in 1947 as an RNA virus transmitted by the bite of an infected mosquito of the genus Aedes. It is also the only arbovirus for which sexual transmission has been identified. Matamèye is a town in the Matamèye department, in the Zinder region of southern Niger.

The general objective of the work is to categorize mosquito habitats. Specifically, it involves getting learners to recognize potential sources of larvae and mosquito breeding. In addition, have them categorize the different elements identified.

The typology surveys were carried out using a questionnaire. In conclusion, we had identified six different types of mosquito habitats across the city of Matamèyè. These habitats clearly change in numbers over time. Due to the lack of research resources, we would like to associate the identification of larvae with our work.

In any situation, it is good to educate the population, especially learners, about good practices to limit and destroy mosquito nests.

Keys words: Typology, mosquito, habitats, Matamèyè

3. RESEARCH QUESTIONS *

Being in a more or less desert environment where annual rainfall is low with a peak of 162 mm of water in August, we had therefore observed high rates of malaria cases in the field, especially among young children under ten years of age. It is important to note that many cases are not referred to physicians because the lack of financial resources forces some parents to do home treatment.

So we asked ourselves questions about:

- Different types of mosquito habitats across the city?

4. INTRODUCTION AND REVIEW OF THE LITTERATURE

Definition

The Zika virus, is an arbovirus member of the Flaviviridae family of the genus Flavivirus, responsible for Zika fever in humans. It takes its name from the Zika forest in Uganda, where it was first identified in 1947 as an RNA virus transmitted by the bite of an infected mosquito of the genus Aedes. It is also the only arbovirus for which sexual transmission has been identified.

Objective

The general objective of the work is to categorize mosquito habitats.

Specifically, it involves getting learners to recognize potential sources of larvae and mosquito breeding. In addition, have them categorize the different elements identified

Demonstration

Infection with this Zika virus is usually well tolerated (often asymptomatic) or induces a syndrome suggestive of other arboviruses, with fever, rash, headache and joint pain, spontaneously resolving. The manifestations are usually quite common and similar to other viral infections, with moderate fever, rash with or without itching, conjunctivitis, muscle and joint pain, fatigue, headache. These signs occur within 3 to 12 days after the bite; they are in the vast majority of cases mild, and disappear in 2 to 7 days. It is estimated that 70 and 80% of Zika virus infections do not cause any symptoms and go completely unnoticed.

Currently, with the exception of asymptomatic pregnant women, only people with suspected infection (i.e. symptomatic) generally undergo laboratory testing for Zika virus infection as part of national surveillance efforts.⁶ Thus, the true prevalence of infection and related complications is likely to be underestimated and biased towards those who seek care or develop a viral disease in response to infection.⁷ Knowing the prevalence of asymptomatic Zika virus infection is important for assessing the effectiveness and cost-effectiveness of interventions, including vaccines, to prevent or treat infection. The prevalence is also needed for decision-making about the value of scaling-up surveillance efforts.

5. RESEARCH METHODS *

5.1. Location of the working city

Matamèyè is a town in the Matamèyè department, in the Zinder region of southern Niger.

- Altitude: 422 m
- Population: 58,025 (2011)
- Weather: 29°C, wind NO at 10 km/h, 17% humidity
- Contact details: 13° 25' 26" north, 8° 28' 37" east

5.2. Methods

The typology surveys were carried out using a questionnaire. The data collected were: mosquito nets identification, number of nests by category, temperature, rainfall, etc. The material used for these surveys consists of:

- Mobil Application: Globe Observer, **Globe mosquito habitat mapper**
- some survey sheets for recording declarations;
- two pens for writing;
- a pencil for note-taking;
- a digital camera for photographs

5.3. GLOBE Badges

- Be a Collaborator
- Make an Impact
- Be a STEM Professional

6. RESULTS

Different habitat types

In this section, we will present in turn the different mosquito habitats that we were able to identify in the city of Matamèyè.



Figure 1: Garbage dump

This image shows a garbage dump in the heart of the city. It covers an area of three hundred square meters (300m²). Its height and extent increase with time. From time to time, we see the population set on fire. Several elements are present in this waste, including: plastic bags, medical waste, kitchen waste from restaurants.



Figure 2: Livestock feed stock

This second image shows the appearance of a hangar containing a retail food stock. Several cases have been reported throughout the city. The height and extent of its reserves vary, depending on the financial capacity and size of the herd of the person constituting it.



Figure 3: Animal ejection

We present you here, a pile of animal dung left in the middle of the city. Since the population of the city partly practises primitive agriculture and animal husbandry, he collects his excreta which they deposit in the street, before sending them to the fields. Variable in height, it also provides habitat for mosquito larvae.



Figure 4: Harvest residues

This fourth image shows a batch of crop residues, left in the open air between the garbage. They are stalks of millet, sorghum, corn straw... It is used as a basis for animal feed during the dry period. Several have been counted throughout the city. The height and extent of its reserves vary, depending on the financial capacity and size of the herd of the person constituting it.



Figure 5: unprotected sump

Figure 5 shows us an unprotected sump loaded with several categories of waste in the middle of the city. Next to it, we see a tire containing dirty water. With varying diameters and depths, they also provide habitat for mosquito larvae.



Figure 6: Poultry plucking areas

At the end of this part, we are in the presence of a poultry slaughter area, not far from the market and the point of sale of the poultry (hens, roosters, guinea fowls, turkeys...) deposited in the middle of town. The killing of the city has the same alarming characteristics.

7. DISCUSSION

This work has allowed us to identify different types of housing throughout the city of Matamèyè. We were inspired by the logic of the Globe program's mobile application to categorize these habitats. Since we are in a desert country, the annual precipitation rate is very low, which justifies the limited number of nests from the water. However, open sumps and poor public behaviour are the reasons that justify the existence of the few identified water systems.

With regard to the categories of habitats not related to water, it should be noted that it is the consequence of the activities carried out in the area. The population of the area is engaged in agriculture and livestock farming, which leads to an increase in the number of animal waste piles. Unlike the retail food stock, this decreases over time.

Despite the efforts of the government and local socio-political leaders, we are very unhappy to read in a scientific article that the prevalence of malaria in the area, for example, is 49% and this is associated with malnutrition in general. This rate is contrary to the rate collected from the hospital administration of the area, which is 20% in 2017 and 19% in 2018.

In any situation, it is good to educate the population, especially learners, about good practices to limit and destroy mosquito nests. These mosquitoes are probably vectors of the transmission of several serious diseases (malaria, Zika...). This weighs on the budget of our West African countries by setting up a mechanism to manage their health crises.

8. CONCLUSION*

In conclusion, we had identified six different types of mosquito habitats across the city of Matamèyè. These habitats clearly change in numbers over time.

Due to the lack of research resources, we would like to associate the identification of larvae with our work

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