

PLAN

- ✓ **INTRODUCTION**
- ✓ **MATERIALS AND METHODS**
- ✓ **RESULTS AND DISCUSSION**
- ✓ **CONCLUSION AND RECOMMENDATION**

INTRODUCTION

**Waste: (Law N°
96/12 1996):
Environnemental
management:**

**Residus issued from all
processes:**

- **Production,**
- **Transformation,**
- **Utilisation of all substances or
materials produced.**

Ready to be abandoned

INTRODUCTION

(LawN°96/12, 1996)



Household waste



Industrial waste



Agricultural waste

INTRODUCTION

Cameroon

- Population increase,
- Anarchic urbanism in Yaounde



- Increase of household waste produced/day
- 1800tons of waste produced daily
- About 1100tons evacuated
- ≠ 700tons = major public health threat

(HYSACAM, 2016)

INTRODUCTION

Problem statement



Nonuse of sanitary equipment when emptying rubbish bins and collecting objects



People selling close to refuse dumps in a market setting



People living close to refuse dumps site

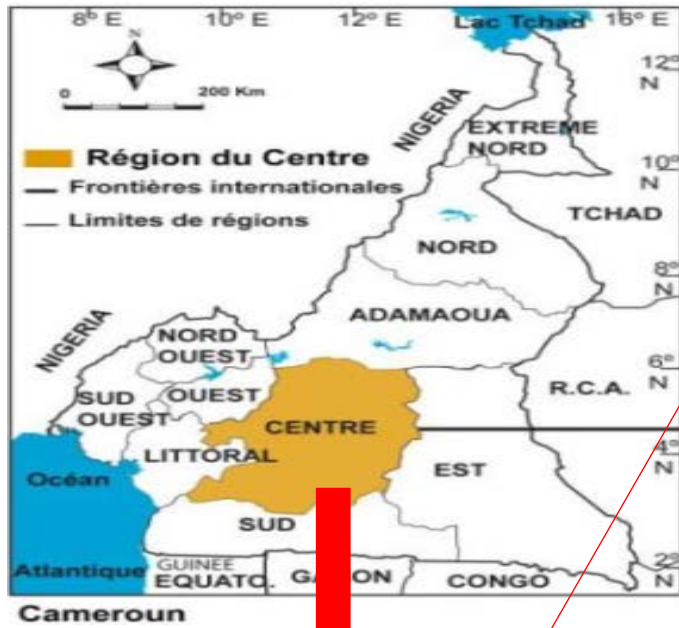
RESEARCH QUESTION

What is the impact of household refuse dump sites on the développement and spread of parasites resistant forms in neighbourhood population in the city of Yaounde?

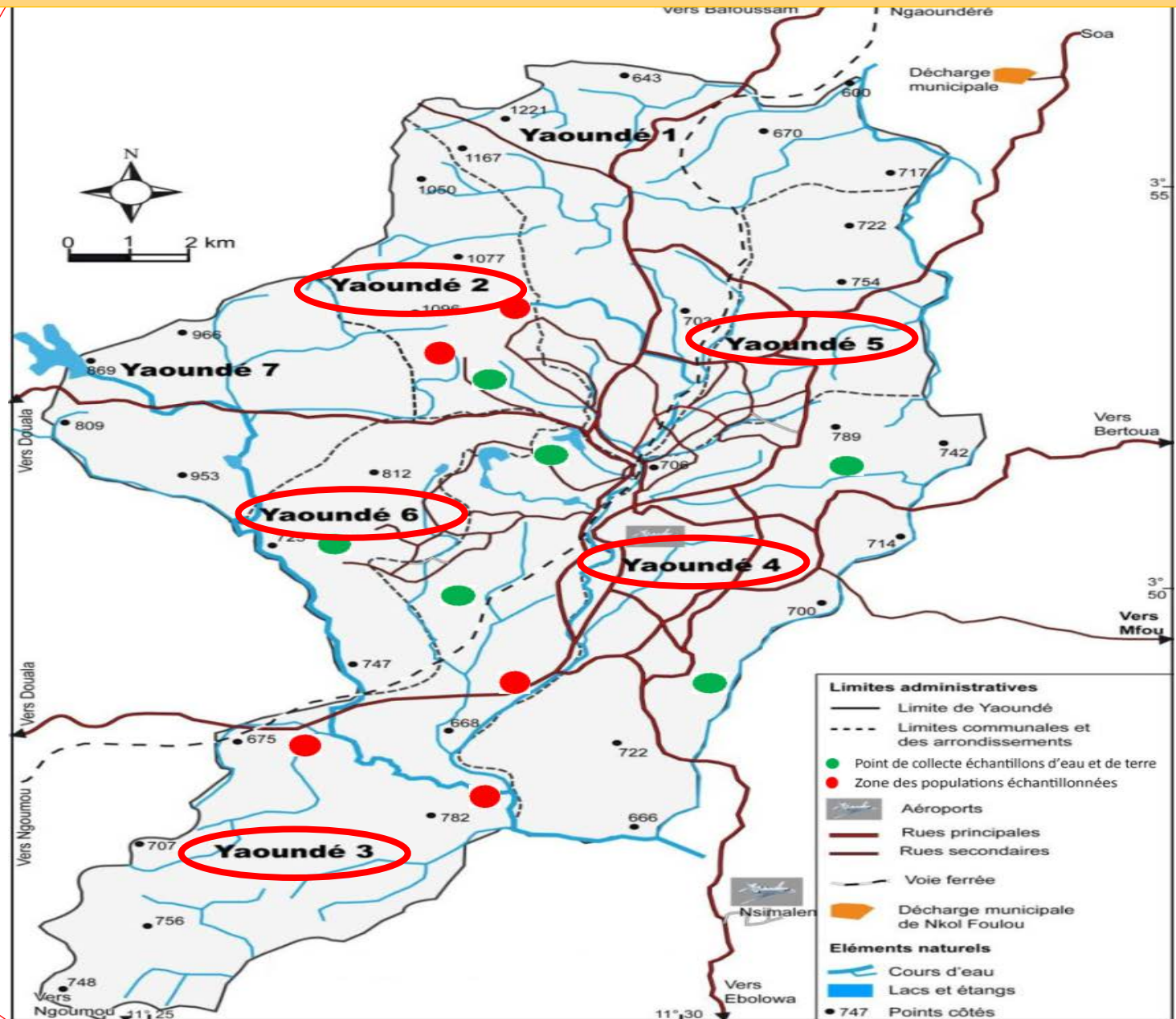
OBJECTIVE

Determine the impact of household refuse collection points on the development and spread of pathogens resistant forms in neighbourhood population in the city of Yaoundé

❖ Study site: 5 subdivisions in Yaounde



Région du Centre



STUDY PERIOD

➤ **March to August 2019**

Ethical Consideration

➤ **N°00844/AP/MINSANTE/SG/DRSPC/2019**

SAMPLE COLLECTION



Soil



Stool



Water



**Transportation to
laboratory and
preparation**

SAMPLE ANALYSIS



Stool: Kato katz and formol ether technics



Soil and water: Zinc sulphate, formol ether and saline solution technics

RESULTS

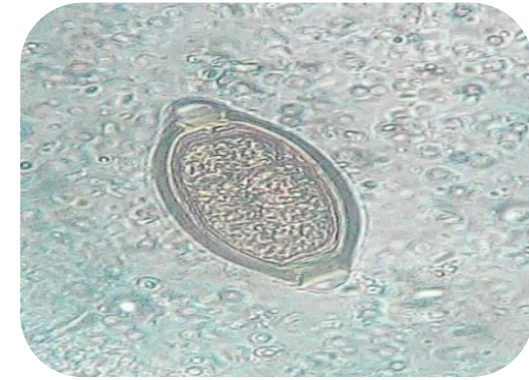
Soil and water (51.7%)



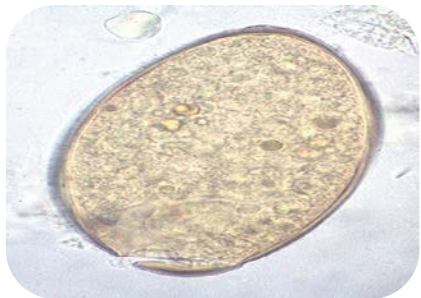
***A. lumbricoides* (38.3%)**



**Hookworms
(18.3%)**



***T. Trichiura* (18.3%)**



***F. Hepatica* (1.8%)**



**Schistosomes
(1.8%)**

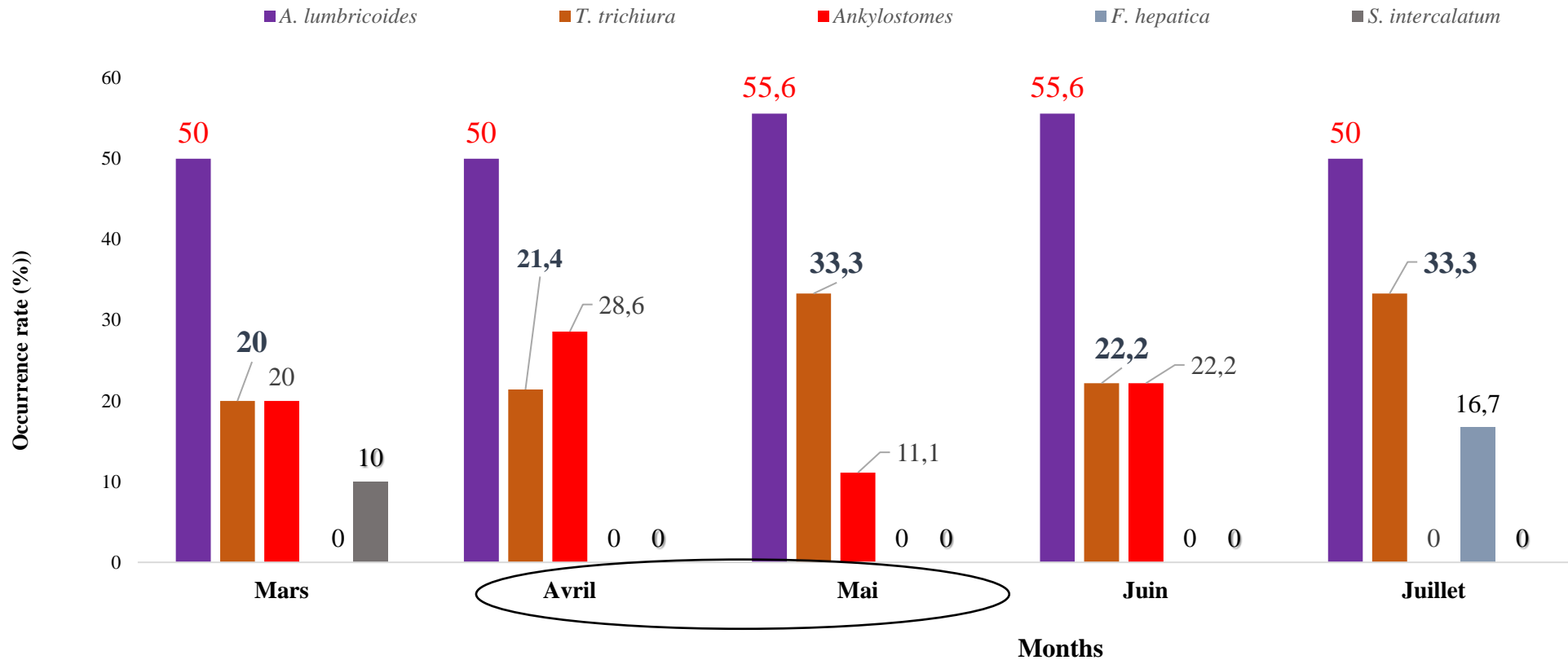
- 20% Cameroonians at risk
- 2 million infected
- 10000 people infected annually (PNLSHI (2020)).

RESULTS

Parasites group	Parasite species	Technic			P
		Ritchie	Zinc sulphate	Salin water	
		NE=60, NP=31 (51,7 %)	NE=60, NP=13 (21,7 %)	NE=60, NP=6 (10, 0 %)	
Helminthes	<i>A. lumbricoides</i>	23 (38,3)	8 (13,3)	6 (10,0)	0,003
	<i>T. trichiura</i>	11 (18,3)	4 (6,7)	4 (6,7)	
	Hookworm	11 (18,1)	7 (11,7)	0 (0,0)	
	<i>F. hepatica</i>	1 (1,8)	0 (0,0)	0 (0,0)	
	<i>S. intercalatum</i>	1 (1,8)	0 (0,0)	0 (0,0)	

RESULTS

Occurrence rates of parasite resistant forms by month

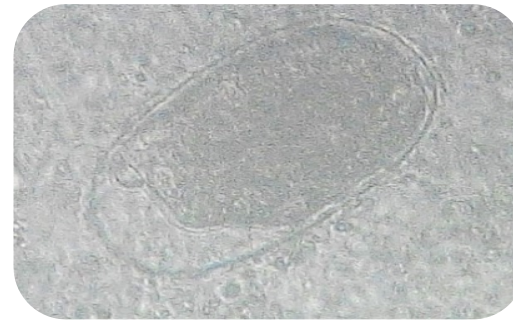


RESULTS

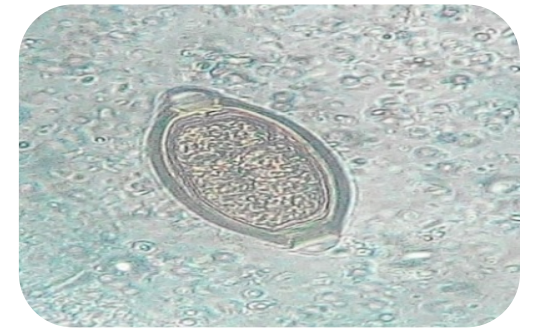
Stool: 82.9%



A. lumbricoides
(12.3%)

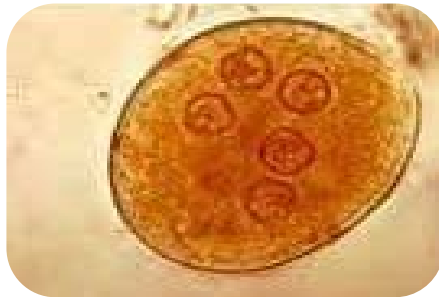


Hookworm (5.5%)



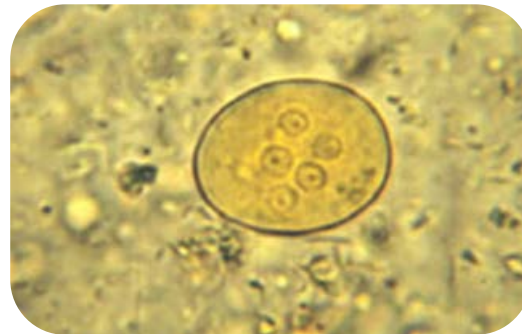
T. Trichiura (3.2%)

Helminthes

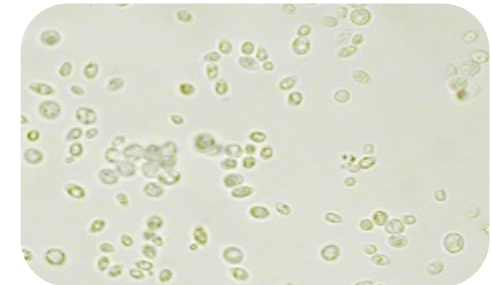


E. Coli (13.5%)

Protozoans



E. histolytica/dispar
(11.5%)



Candida spp (76.1%)

Yeast cells

RESULTS

Occurrence rate of parasite resistant forms by sex and age

Variable		<i>A.lumbricoides</i>	<i>T.trichiura</i>	Hookworm	<i>E.histolytica/dispar</i>	<i>E.coli</i>	<i>Candida Spp</i>
Sex	Female (133)	18 (13,5)	4 (3,0)	8 (6,0)	13 (9,7)	15 (11,2)	107 (80,0)
	Male (119)	13 (10,9)	4 (3,3)	6 (5,0)	16 (13,4)	19 (15,9)	85 (71,4)
	X ²	0,395	0,025	0,113	0,828	1,559	3,317
	P	0,53	0,873	0,737	0,363	0,206	0,069
Age group	[1-10[(58)	7 (12,0)	4 (6,9)	5 (8,6)	4 (6,9)	9 (15,5)	45 (77,5)
	[10-20[(90)	12 (13,3)	3 (3,3)	3 (3,3)	9 (10,0)	9 (10,0)	67 (74,4)
	>20 (104)	12 (11,5)	1 (1,0)	6 (5,7)	16 (15,3)	16 (15,3)	80 (76,92)
	X ²	0,147	4,261	1,887	2,935	2,561	0,469
	P	0,929	0,119	0,339	0,23	0,76	0,791

CONCLUSION

- **The HYSACAM collection points of house hold waste in the city of Yaounde constitute a favorable milieu for the development and propagation of resistant forms of some human pathogens,**
- **Appropriate measures for a better management of HYSACAM collection points as well as the population are indispensable.**

RECOMMENDATIONS

HYSACAM company is encouraged to:

- **Increase the regularity of evacuation of wastes**
- **Construct refuse dumpsites with cement far away from homes**

The population

- **Practice of personal hygiene and precaution when emptying wastes.**

