ISOLATION OF HUMAN-INFESTING PARASITES IN *Amaranthus viridis* and *Corchorus olitorius* LEAVES SOLD WITHIN THE NUPE LAND, NORTH CENTRAL NIGERIA

By:

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INTRODUCTION

- Parasitic infections are a major public health challenge globally, particularly in regions where agricultural practices and food handling may increase exposure to parasites (Amaechi, 2013).

- Vegetables, which are a vital part of the diet in many communities, can become vehicles for transmitting parasites if not properly handled or washed.

- These vegetables, valued for their nutritional benefits, also pose significant health risks due to their potential to harbor parasitic organisms (Nahhas and Aboualchamat, 2020).

- The consumption of raw or unwashed vegetables is directly linked to the transmission of parasites, with common contaminants including *Cryptosporidium, Cyclospora, Giardia, Entamoeba histolytica,* and *Ascaris lumbricoides* (Hotez *et al.,* 2014; Zenudin *et al.,* 2024).

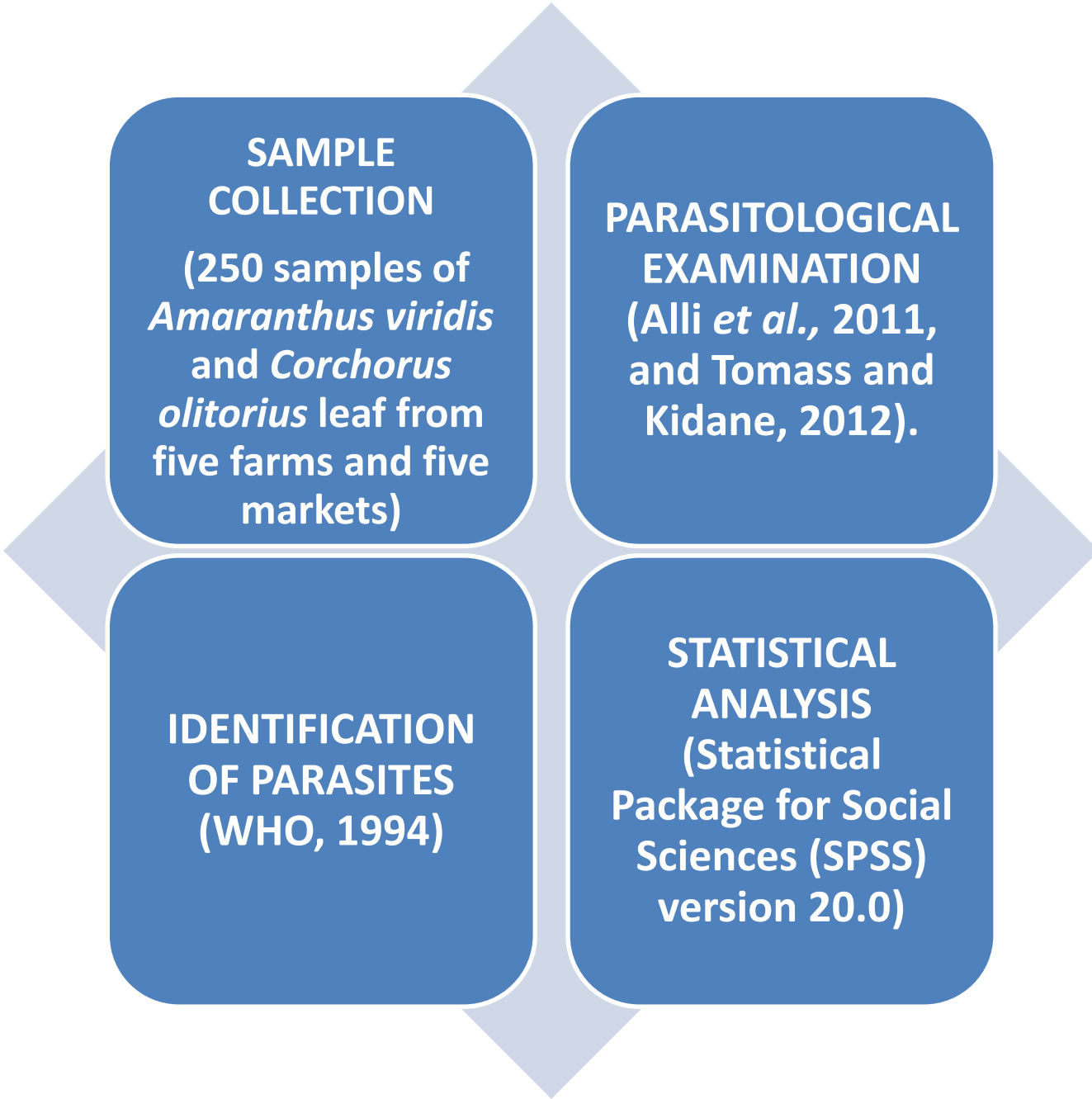
- Contamination often occurs through various means, such as farm practices, irrigation with contaminated water, and improper handling by food workers.

- Additionally, practices such as using night soil and wastewater in vegetable cultivation increase the risk of contamination by human intestinal nematodes (Hotez *et al.,* 2014; Zenudin *et al.,* 2024).

- Despite these risks, vegetables like *Amaranthus viridis* (green amaranth/efo tete) and *Corchorus olitorius* (jute mellow/ewedu) are widely consumed and also used for medicinal purposes (Adejumoke and Morenikeji, 2015).

- This study aims to fill the research gap by examining the parasitic contamination of these vegetables within Nupe Land, North Central Nigeria, thereby providing insights into the public health risks and recommending strategies to mitigate them.

METHODOLOGY



RESULTS AND DISCUSSIONS

Table 1: Vegetable-Specific parasite contamination in farms and market vegetables in Edu L.G.A, Kwara State, Nigeria

Farm vegetables Number sampled	Number sampled	Contamination rate n (%)
A. Viridis	**115**	**17 (14.8)**
C. Olitorius	**110**	**23 (20.9)**
Total	**125**	**40 (32.0)**
X2		**23.034**
P-value	**0.001*ns**	**0.000*ns**
n= number contaminated; X2= Chi-square; ns= not significant		

Table 2: Vegetable/parasites in sampled vegetables from farms and markets

Vegetables Farms	No. sampled	*A. lumbricoides*	*E. histolytica*	*Taenia spp.*	*Hookworm*	*T. trichuira*	*S. Stecoralis*	*E. vermicularis*
A. viridis	**115**	**14 (12.2)**	**8 (7.0)**	**3 (2.6)**	**5 (4.3)**	**3 (2.6)**	**3 (2.6)**	**2 (1.7)**
C. olitorius	**110**	**8 (7.3)**	**6 (5.5)**	**4 (3.6)**	**7 (6.4)**	**3 (2.7)**	**5 (4.5)**	**2 (1.8)**
X2	**0.0055**							
P-value	**0.001**							
MARKET								
A. viridis	**115**	**6 (5.2)**	**4 (3.5)**	**2 (1.7)**	**2 (1.7)**	**1 (0.9)**	**1 (0.9)**	**0 (0.0)**
C. olitorius	**110**	**8 (7.3)**	**6 (5.5)**	**2 (1.8)**	**4 (3.6)**	**1 (0.9)**	**1 (0.9)**	**2 (1.8)**
X2	**0.0067**							
P-value	**0.001**							

- A total of 114 samples (45.6%) were contaminated with various parasites, with 59.2% found in farm vegetables and 32.0% in market vegetables. *Corchorus olitorius* showed higher contamination rates on both farms (35.5%) and markets (20.9%).

- Identified parasites included *Ascaris lumbricoides, Entamoeba histolytica* cyst, *Taenia* species eggs, hookworm eggs, *Trichuris trichiura* eggs, *Strongyloides stercoralis* larvae, and *Enterobius vermicularis* eggs.

- *Ascaris lumbricoides* (17.6%) was predominant then *E. histolytica* (11.2%), and *Enterobius vermicularis* had the lowest prevalence (3.2%) in farm samples. In market *samples*, *Ascaris lumbricoides* (11.2%) was most common, and *E. vermicularis* (1.6%) was the least common.

- Certain factors that might have contributed to the high contamination rate include the type of agricultural practices used by the farmers when compared to previous studies.

- The presence of soil transmitted helminths are indicators of poor socio-economic conditions as well as poor environmental sanitation practices.

- The presence of protozoa and cestodes might be due to lack of modern toilet facilities, inadequate public health enlightenment and illiteracy that makes people defaecate indiscriminately resulting in pollution of water and farmland.

- This finding aligns with similar studies reported by Abougrain *et al*., 2010; Al-Megrin, 2010; Amaechi *et al.*, 2016; Akinseye et al., 2017.

CONCLUSION

It is conclusive that the vegetables, *Amaranthus viridis* and *Corchorus olitorius* collected in Nupe land, North Central, Nigeria are significantly contaminated with human-infesting parasites. This poses a public health challenge to both consumers and agricultural workers alike.

RECOMMENDATION

- Treatment of wastewater and animal manure before utilizing them for farm irrigation
- Mass education of the populace on the inherent dangers in eating inadequately washed and not well cooked vegetables.
- Improving individual hygiene practices through constant vegetable washing prior to consumption.
- Provision of good sanitary system to prevent contamination of soil and water with parasites from poor deposition of faeces.

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THANKS
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