

Prevalence and distribution of Tsetse fly (mainly *Glossina palpalis palpalis* and *Glossina tachinoides*) in BICOT Project area in Lafia Local Government of Nassarawa State, Nigeria – Implication for sustainable Agricultural development.

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Citation

R Oluwafemi. *Prevalence and distribution of Tsetse fly (mainly Glossina palpalis palpalis and Glossina tachinoides) in BICOT Project area in Lafia Local Government of Nassarawa State, Nigeria – Implication for sustainable Agricultural development.*. The Internet Journal of Parasitic Diseases. 2008 Volume 4 Number 1.

Abstract

A survey was conducted between May and June 2000 to study the prevalence and distribution of tsetse fly in the Biological Control of Tsetse fly project (BICOT) area. The project area covering approximately 1500km² of land is located within Lafia Agricultural development project (now Nasarawa Agricultural development) in Lafia Local Government area of Nasarawa State, Nigeria. The area is regarded as one of the food basket of the nation due to its abundant crop and livestock resources, yet tsetse fly, which is one of the major constraints to effective utilization and the development of these resources, is found in the study area. Tsetse fly are vectors of African trypanosomes (that causes trypanosomosis) in humans and animals. Two major species of tsetse fly (*Glossina*) encountered during the study were *Glossina palpalis palpalis* and *G. tachinoides*. The total number of tsetse flies recorded was 466 comprising of 454 *G.p.palpalis* and 12 *G.tachinoides*. The distribution of tsetse flies in the study area as revealed by the result of this survey showed a high population of tsetse flies in Maisamari, Feferuwa, Ganye, Ehula, Bukankwato, Kurikiyo and Awuma areas. The economic importance of tsetse flies towards sustainable livestock and agricultural development, rural development, poverty alleviation, women and youth empowerment to mention a few cannot be overlooked. The author therefore wish to appeal to all stakeholders and decision makers to justify the decision of Heads of States and Governments of African Countries of July 2000 at the OAU Summit in Lome, Togo by coming up with sustainable measures of tsetse fly eradication from the continent of Africa.

INTRODUCTION

Insect-borne diseases exact a high public health burden and have a devastating impact on livestock and agriculture. One of such disease that has plagued sub-Saharan Africa is caused by protozoan African trypanosomes (the trypanosome species) and transmitted by tsetse flies (Akysoy et al, 2005). Tsetse flies are confined to sub-Saharan Africa mostly in the rural areas and their deleterious effects on livestock production are enormous.

According to Lehane et al (2003), tsetse flies transmit African trypanosomosis leading to half a million cases annually and that the diseases known as Nagana in animals remains a massive break on African Agricultural development. Over the past 100 years, a lot of efforts have been put on initiatives aimed at controlling the tsetse fly. There has however been limited impact in terms of reducing

the problem (Anon, 2002). Some of the areas where tsetse fly populations were considerably reduced have become re-infested due in most cases to lack of consolidation of achievements (Oluwafemi, et al, 2001, Anon, 2001). The present study area being a typical example where gains made were not sustained.

The present study area and even the entire Nasarawa State is an area with huge agricultural potentials. The area can be referred to as one of the food baskets of the Nation due to its abundant crop and livestock resources, yet the prevalence and distribution of tsetse flies (*Glossina* spp) mainly *Glossina palpalis palpalis* and *Glossina tachinoides* constitutes a serious constraints to effective utilization of these resources (Oluwafemi, et al, 2001, Ilemobade, 1994 and Anon, 1977).

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The positive impact of the first phase of the Biological Control of tsetse fly project (BICOT) in the study area was evident. Some forest areas, which serves as habitats for tsetse flies were now cultivated for farming purposes and ruminant animal production activities increased. According to Oluwafemi (2006), this relief is being threatened by re-infestation as tsetse flies population is gradually building up.

African Heads of States and government, having being under pressure from their communities to do something about the tsetse flies problem and realizing that individual country solutions would not work, came to the conclusion that the tsetse problem had to be tackled on a continent-wide basis. Therefore, in the light of the above decision, the author wish to present to present the prevalence and distribution of tsetse fly in the study area and to appeal to all stakeholders in the implementation of the decision to come up with sustainable measures of tsetse fly control/eradication from the continent of Africa.

MATERIALS AND METHODS

STUDY AREA

The study was carried out within the Biological control of tsetse fly project area covering approximately 1,500 km² and within Lafia Local Government Area of Nasarawa State, Nigeria. Nasarawa State shares boundary with the Federal Capital Territory of Abuja and its in the central area of the middle belt region along latitude 7oN and longitude 10oE. It is within the Guinea savanna vegetation zone of Nigeria.

DATA COLLECTION

Data for the prevalence and distribution of tsetse fly were obtained from the survey of tsetse fly in the study area. The study area was divided into five blocks for effective coverage. Within each block are five or more blue biconical traps were set along these streams/rivers on a 24 hour monitoring exercise were set along these streams/rivers on a 24 hour monitoring exercise until the entire study area were covered. Trapped tsetse flies were collected, counted and recorded on tsetse trapping record form at the 24hours exercise.

RESULTS

The two species of tsetse flies encountered during the study were *Glossins palpalis palpalis* and *Glossina tachinoides*. In all, 466 flies were caught comprising of 454 *Glossina p.palpalis* and 12 *Glossina tachinoides*. The distribution of tsetse flies in the study area as revealed by the result of this

survey showed a high population of tsetse flies in Maisamari, Feferuwa, Ganye, Ehula, Bukankwato, Kurikiyo and Awuma areas (Table 1). On the other hand, areas of moderate tsetse flies population include Akunni, Tsakwa, Achiba, Dungu, Kirayi and Maiakuya.

The survey also further revealed that forest areas along the rivers in some places have given way to farming activities and these are areas with moderate and low tsetse fly population. Presently, Amba, Dutse and Ombi are almost within Nasarawa State capital as a result of infrastructural development. The overall summary is as presented in Table 1 below.

Figure 1

Table 1. Summary of tsetse flies caught from the month of May to June 2000 on a 24 hour trapping exercise.

LOCALITY (RIVERS)	GLOSSINA TACHINOIDES	GLOSSINA PALPALIS PALPALIS	TOTAL
Akunni	9	7	16
Maiakuya	0	0	0
Maisamari	0	23	23
Kirayi	0	12	12
Tsakwa	0	12	12
Achiba East	0	15	15
Achiba west	0	8	8
Dungu West	0	7	7
Dungu South	0	4	4
Feferuwa	0	28	28
Ganye one	0	61	61
Ganye two	0	38	38
Ganye three	0	44	44
Ehula	0	55	55
Amba	2	0	2
Dutse	1	4	5
Bukankwato	0	23	23
Kurikiyo	0	27	27
Ombi	0	7	7
Agabija	0	15	15
Awuma	0	63	63
TATAL	12	454	466

CONCLUSION AND DISCUSSION

The present study revealed the prevalence and distribution of tsetse flies in an area where the same tsetse flies had earlier been eradicated through the use of Sterile Insect Technique (SIT) by the Biological Control of Tsetse fly project (Anon,1985). The distribution pattern of tsetse flies especially *Glossina p.palpalis* showed that tsetse flies and trypanosomosis complex is still a major hindrance to livestock development in the area. In addition to this, the use

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of work oxen, which is not common in the area will be difficult to practice. Areas with high and moderate tsetse flies population are areas where extensive crop and livestock production activities are being practiced; yet, tsetse fly problem exists and hinders the full utilization of these resources.

According to Swallow (2000), high trypanosomosis risk can largely exclude species and breeds of livestock that are otherwise well-suited to animal traction. For example, very few West African Zebu cattle or horses are used for traction in the wetter semi-arid and drier sub-humid regions of West Africa. This is the case in the present study area with the resultant absence of large scale farming activities. Implementation of a sustainable tsetse fly and trypanosomosis control programme will no doubt encourage crop and livestock farmers to move into such areas and this will eventually lead to raising of more livestock and cultivation of more land for crop farming. Through this, tsetse fly and trypanosomosis control partnership among stakeholders will be established and food and nutrition security achieved.

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