



Full Length Article

Analysis of Bites and Stings by Snakes, Insects and other Animals among Rubber (*Hevea brasiliensis*) Tappers in Southern Nigeria

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ABSTRACT

The study examined the impact of bites and stings by snakes, insects and other animals on rubber tappers in Southern Nigeria and the resultant effects on the Natural rubber (NR) production in the study areas. A structured questionnaire was used to solicit information from 230 tappers in 10 Communities of Edo and Abia States of Nigeria. The data collected were subjected to descriptive statistics for analysis. The result showed that 46.15% and 26% of the respondents were victims of bites and stings among tappers in Edo and Abia States, respectively. The paper concluded with recommendations on how to minimize the identified hazards among rubber tappers for more economic efficiency and sustainability of natural rubber production in Nigeria.

Key Words: Tappers; Natural rubber; Sting and bites

INTRODUCTION

Natural rubber (*Hevea brasiliensis*) is a tree crop, belonging to the family *Euphobiaceae*. It grows well in rainforest zones with temperature ranges from 21°C–30°C and a well distributed annual rainfall of 2000 mm or more on a well drain soil with pH value between 4.0 and 6.5 (Aigbekaen *et al.*, 2000). These physical climatic conditions are found mostly in the Southern parts of Nigeria (Ojo, 1981). Domestication and cultivation of Natural rubber (NR) in Nigeria is believed to have started in about 1913 (Okanye, 1985), as was introduced into the Southern parts of the Country from Kew garden, England in 1895 (Ogowewo, 1986). The rubber tree grows up to 25 m high with a straight smooth light-grey bark of 6-15 cm thick (Giroh *et al.*, 2006). NR cultivation has thus been practiced over many decades in Edo, Delta, Imo, Abia, Rivers, Akwa-Ibom and Cross-River States of Nigeria, called the Rubber Belt of Nigeria (Abolagba, *et al.*, 2003). The agronomic practices include land clearing, raising of seedlings, weeding, budding, transplanting, pruning and tapping to produce latex. This shows that rubber industry is labour intensive. Aigbekaen and Alika (1984) in their study reported negative but significant correlation between production cost and output of rubber in Nigeria. High labour intensity has forced majority of the plantation owners to either abandon or adopted a share cropping system of management with the willing tappers. This arrangement resulted to the act of “slaughter tapping” of the rubber trees by the tappers in order to maximize profit at the expenses of poor bark regeneration of the trees and declining

productivity and life-span (RRIN, 1983).

Although rubber trees entirely have potential economic value, Nigeria laid much emphasis on rubber production for latex. This may be due to the fact that majority of the stakeholders in natural rubber industry (about 70%) are peasant farmers and are economically poor, cannot go into the rubber-seed and rubber wood exploitation at commercial scale. Unfortunately, the prices of rubber latex and coagula are determined by the buyers who are believed to be exploitative on the farmers, this has led to the decrease in rubber cultivation from about 200, 000 ha in 1980s to about 145, 000 ha currently in Nigeria (Udofia, 2006).

Tapping is a crucial factor in rubber production. Tren *et al.* (1993) defined tapping as the controlled wounding of the bark of matured tree to extract latex and at the same time preserving the economic life of the tree. Considerable research has been made in various fields on NR improvements e.g., high latex yield and diseases resistance, but it is observed that little or no study has been conducted on the hazards of rubber tappers who are one of the significant factors in the sustenance of the NR industry. The objective of this study therefore was to examine the possible hazards rubber tappers in Nigeria are mostly exposed to which might be responsible for the decline in tappers productivity in Nigeria.

MATERIALS AND METHODS

The study was conducted in the southern part of Nigeria. Edo and Abia states were purposively sampled for the study due to their predominant activities in rubber

industry in Nigeria. The states also represent different cultural background of southern people of Nigeria. There were 300 structured questionnaire administered in 10 communities among rubber tappers. The communities were Iyanomo, Obaretin, Obayator, Uhie, Ogbekpen, (Edo state), while Akwete, Umunteke, Obohia, Umuebulungwu and Obegu were considered in Abia state. A total of 230 questionnaires were properly filled in and hence used for the study. Descriptive statistics such as percentage and means were used to analyze the data collected.

RESULTS AND DISCUSSION

Age distribution. The age distribution of the respondents (Table I) shows that majority of the tappers (24.35%) were between the ages of 32-37 years, this was followed by those in the age bracket of 38-43 years (20%) and the least were those in 62 years and above,(8%). This implies that the tappers are young and strong to carry out the tapping job effectively when properly managed. Output is also expected to be high.

Tapping experience. Table I also depicts the tapping experience among the respondents. Majority (69.56%) had tapping experience ranging, 1-12 years. Those having 13-21 years tapping experience were only 14.79%, while those over 21 years were 15.66%. This implies that most of the tappers did not stay long in the tapping profession. This may be due to poor wage or irregular payment as well as the hazards associated with the job, which the tappers are exposed to. The consequence of this may lead to inefficiency in the tapping techniques, usually manifested in destructive of the rubber trees resulting to premature death and low productivity of the trees. Thus policies should encourage provision of incentives to the tappers who wake up very early in the morning to tap rubber so as to remain in the system. This may be through the organization of training workshop to equip them to be more efficient and good remuneration to enhance their productivity.

Table I. Tapping experience and Age distribution of the respondents

Variables	Frequency Percentage	
Tapping Experience (age in years)		
1 – 3	26	11.30
4 – 6	44	19.13
7 – 9	48	20.87
10 – 12	42	18.26
13 – 15	10	4.35
16 – 18	14	6.09
19 – 21	10	4.35
22 – 24	4	1.74
25 – 27	8	3.48
28 – 30	14	6.09
31 – 33	8	3.48
34 – 36	2	0.87
Age distribution		
20- 25	22	9.57
26 – 31	42	18.26
32 – 37	56	24.35
38 – 43	46	20.00
44 – 49	22	9.57
50 – 55	18	7.83
56 – 61	16	6.96
> 61	8	3.48

Prevalence of bites and stings. The analysis showed that 41.74% of the respondents had one form of bites and stings during the tapping activities. There was higher incidence in Edo state, where 53.85% of the respondents were victims, while 24% of respondents in Abia state were victims (Table II). This include incidences of ants and honey bees attack, 29.23% and 10.0%, respectively. The result also showed that 46.92% and 24% of the victims received treatment in Edo and Abia state, respectively. It was observed that none of those victims were treated by their employers; rather the medical bills were either paid by themselves, friends or relatives. This might have built a kind of negative confidence in the tappers towards their employers.

Table II. Prevalence of accidents and diseases among rubber tapper in the Southern Nigeria

Characteristics Variables/ Incidences	EDO			STATE		ABIA		STATE		
	Total	% Victims	TR	TP 1,2,3	BP 1,2	Total	% Victims	TR	TP 1,2,3	BP 1,2
Tappers population	130	53.85	70	61	61	100	26.00	24	24	19
No. bitten by snakes	10	7.69	10	3	2	8	8.00	8	3	2
No. stung by scorpion	8	6.15	6	1	2	6	6.00	4	1	2
No. bitten by ants	22	16.92	16	1	2	6	6.00	3	1	2
No. stung by honey bees	16	12.31	15	1	2	4	4.00	4	1	2
No. with all of the above	4	3.08	4	3	2	2	2.00	2	3	2
No. not affected by any of the above	60	46.15	9			74	74.00	7		

TR = Number that received treatment

TP = Type of Treatment received

1 = native treatment

2 = orthodox treatment

3 = both 1 and 2 treatment.

BP = Treatment bill paid by

1 = Employer

2 = Victim/friend's/relations.

No. = Number

Table III. Number of absenteeism from tapping due to sickness among the respondents

Absenteeism Duration/month	Frequency
1–2 days	24
3–4 days	14
5–6 days	2
7–8 days	6
3 weeks	2
2 months	4

Absenteeism from tapping due to sickness among respondents. The study analyzed the level of absenteeism from tapping due to sickness among the tappers in the study area. It was found that 24 respondents were absent for 1-2 days per month, 14 had 3-4 days absent per month and this followed by six who were absent for 7-8 days per month (Table III). There were also four tappers that were absent for two months consecutively during the period of study from tapping due to sickness. This indicates that sickness and diseases had distributed quite a number of tappers in the study areas. This ought to have posed negative contributions to natural rubber production in the country's economy.

Recommendations. Base on the findings of this study, the following recommendation were made: maintenance of clean plantations, provision of adequate dressing kits to the tappers including raincoats, rain boots hand gloves e.t.c. The provision of equipped health centers with easy accessibility to the tappers and it is also important to provide means of mobility to the tapper through soft loans to ease the stress associated with long trekking to and fro plantation.

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