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Conservation of *Ocimum gratissimum* in rural communities of Ekiti State of Nigeria and its use in self-medication

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ABSTRACT: The ethnomedicinal use of *Ocimum gratissimum* was valued against some socio-economic features which include household size, educational status, farm size holdings and economic status.

Results obtained revealed that respondents as prerequisites did not consider these features to their consciousness to the efficacy of the extracts and its relative affordability. At present, households, homesteads and farms constitute the major primary and secondary sources respectively. The relative abundance test, however, indicated that the plant was of rare occurrence at these sources, hence could be said to be endangered at the study area.

The present report is on the need for the conservation of *O. gratissimum* in the study area. Strategies toward the achievement of this goal are proposed.

Key Words: *Ocimum gratissimum*; Ethnomedicine; Socio-economic status; Conservation.

Introduction

Ekiti State which is situated between latitude 7°25' and 8°20' N and longitude 5°00' and 6°00' E, in the Southwestern part of Nigeria, has a contiguous landmass of about 7,000 sq. kilometres (Kayode, 1999). Two climatic seasons prevail in the state: a rainy season from March to October and a dry season from November to February. Annual rainfall is about 1,150mm (Kayode and Faluyi, 1994).

Recent estimates revealed that over 75 percent of the 1.6 million inhabitants of Ekiti State are farmers (EKSG, 1997) most of whom are rural dwellers. The farmers in Ekiti preserve *Ocimum gratissimum* growing on their farms because of the belief that the plant possesses the ability to repel termites (Kayode and Akande, 1998). Extracts from the leaves of the plant can also be used for the treatment of cough and diarrhoea.

The present study aims at determining the demographic status and ethnomedicinal uses of this plant with the aim of proposing strategies for the conservation of the species.

Materials and Methods

Five rural communities were selected from each of the three existing geopolitical zones of Ekiti State. The zones are Ekiti North (A), Ekiti South (B) and Ekiti Central (C). In each village, twenty households were randomly selected and used for this study which spanned a period of five years. The heads of households were identified and interviewed with the aid of semi-structured questionnaires which were directly administered by the researcher. The interviews were conversational and two-way in nature.

The ethnomedicinal uses of *O. gratissimum* in each household were valued against some socio-economic features which include household size, educational status, farm size and economic status. The relative abundance of the plant at the various sources of collection utilized by the respondents was determined according to the method of Kayode (1999). A response from less than 5 individuals was considered as rare (R), 5 to 10 as occasional (O), 1 – 30 as frequent (F), 31 – 100 as abundant (A) and over 100 individuals as very abundant (VA).

Results and Discussion

The term ‘household’ as used in this study was defined by Mehl (1990) to mean the actual consumption and production unit, which differs from the family unit. Thus, non-family members living under the same roof were considered as part of the household while family members living elsewhere, though temporarily, were not. Consequently, households of less than ten individuals were considered in this study as being small while those consisting of more than ten individuals were considered as being large.

The use of *O. gratissimum* cuts across small and large households. Table 1 shows that over 90 per cent of each household category confirmed using the extract from the leaves of this plant to treat cough and/or dysentery. In all, one hundred and forty (93%) of the respondents admitted using the plant for the purposes stated above. These respondents consist of literate and illiterate rural dwellers.

Table 1: Ethnomedicinal utilization of *O. gratissimum* among household categories in rural communities of Ekiti State.

Household Category	Proportion (%) of respondents utilizing <i>O. gratissimum</i>			
	A	B	C	Total
Small	80 (15)	100 (10)	92 (13)	91 (38)
Large	94 (35)	95 (40)	97 (77)	95 (112)

*Figures in brackets represent the number of respondents in each category.

Table 2 shows that literacy, like household size, is not a prerequisite to the awareness of the respondents on the efficacy of the extracts from the leaves. A relatively large proportion of respondents in each of the literacy status utilize the extracts from this plant.

Similarly, ownership of farmlands and the size of land holdings were not considered as prerequisites to the utilisation of *O. gratissimum* by the respondents. Table 3 shows that over 90 per cent of the respondents in each land size categories utilize this plant. The landless households were those that neither owned nor farmed land. The small farm households were those with small-scale holdings either inadequate or just enough to meet their household consumption needs. The medium farm households had enough land to meet their minimal needs and occasionally possess a small surplus land, while the large farm households had significantly more than enough land to meet their needs (Mehl, 1990).

Table 2: Educational status and ethnomedicinal utilization of *O. gratissimum* among respondents in rural communities of Ekiti State.

Educational Status	Proportion (%) of respondents utilizing <i>O. gratissimum</i>			
	A	B	C	Total
Literates	67 (3)	83 (6)	80 (5)	77 (14)
Illiterates	96 (47)	93 (44)	96 (45)	95 (136)

*Figures in brackets represent the number of respondents in each category.

Table 3: Land size holdings and ethnomedicinal utilization of *O. gratissimum* in rural communities of Ekiti State.

Land size holdings	Proportion (%) of respondents utilizing <i>O. gratissimum</i>			
	A	B	C	Total
Landless	100 (10)	92 (13)	94 (18)	95 (41)
Small	91 (22)	97 (31)	90 (20)	93 (73)
Medium	90 (10)	100 (5)	89 (9)	93 (24)
Large	94 (35)	95 (40)	97 (77)	95 (112)

*Figures in brackets represent the number of respondents in each land size category.

The index of wealth varied from one village to another. However, comparison could still be made across the villages. Respondents were classified into three distinct economic classes (Table 4). The results from this study tend to suggest that the economic status of a respondent does not constitute a prerequisite to the utilisation of *O. gratissimum*.

Table 4: Respondents economic class and ethnomedicinal utilization of *O. gratissimum* in rural communities of Ekiti State.

Economic Class	Proportion (%) of respondents utilizing <i>O. gratissimum</i>			
	A	B	C	Total
Low	94 (32)	93 (41)	95 (18)	94 (111)
Medium	80 (10)	100 (5)	100 (8)	93 (23)
High	100 (8)	75 (4)	100 (4)	92 (16)

*Figures in brackets represent the number of respondents in each economic class.

The sources of collection as well as the relative abundance of the plant at each source were evaluated. Table 5 shows that the major primary source was the household homesteads while the household farms constituted the major secondary source. The relative abundance test (Table 6) revealed that the occurrence of *O. gratissimum* at the various sources was rare on the abundance scale, hence the plant could be said to be endangered.

The wide use of *O. gratissimum* in the study area could be attributed to its efficacy and relative affordability. The main constituents of the extracts include terpenoids, eugenol, thymol, saponins and alkaloids (Gill, 1992). It could be inferred from the enthusiasm demonstrated on the use of this plant that respondents are not likely to discard with its use in the nearest future. There is, therefore, the need to conserve the plant to meet the needs of the present and future generations.

Table 7 shows that presently less than one percent of the respondents have been involved in cultivating *O. gratissimum* and less than 10 percent are willing to cultivate it and are dependent on *O. gratissimum* growing in the wild.

Table 5: Sources of *O. gratissimum* leaves utilised by respondents in rural communities of Ekiti State.

Sources	Proportion (%) of respondents utilizing source*			
	FR	CA	FM	HS
Primary	–	1	2	90
Secondary	–	9	82	2

FR: Forest; CA: Common Area; FM: Household Farm; HS: Household Homestead.

Table 6: Relative abundance of *O. gratissimum* at sources utilized by respondents in rural communities of Ekiti State.

sOURCES	Proportion (%) of respondents utilizing <i>O. gratissimum</i> *		
	A	B	C
FR	R	R	R
CA	R	R	R
FN	R	R	R
HS	R	R	R

*R: Rare.

Conclusion

There is need for the domestication of this species. Strategies for achieving this may include public awareness enhancement, protection of *O. gratissimum* growing naturally (an *in situ* method), cultivation of the species as an *ex situ* device. More research is also needed on the eco-physiology of the species in the study area.

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Table 7: Conservation ethics among respondents in rural communities of Ekiti State.

Ethics	Proportion (%) of respondents			
	A	B	C	Average
Respondents involved in planting <i>O. gratissimum</i> before the study	–	2	–	0.7
Respondents preserving <i>O. gratissimum</i> on their farm/ household area	51	82	67	66.7
Respondents willing to plant <i>O. gratissimum</i> after the study.	4	6	12	7.3

*Figures in brackets represent the number of respondents in each category.

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