

**Abubakar Ahmed^{1*}, Hadiza D. Nuhu¹, Hamisu Ibrahim² and Habila Emmanuel Mshelia³**¹Department of Pharmacognosy & Drug Development Ahmadu Bello University Zaria, Nigeria²Department of Chemistry Ahmadu Bello University Zaria, Nigeria³Department of Pharmacognosy & Ethnopharmacy Usmanu Danfodio University Sokoto, Nigeria*Correspondent author: abua@abu.edu.ng, abukeana@gmail.com**Received:** November 05, 2018 **Accepted:** February 14, 2019

Abstract: The plant *Tacazzea apiculata* Oliv (Periplocaceae) is widely distributed in tropical West Africa. It is claimed to have multiple uses in traditional medicine among which are its use to treat hemorrhoids, inflammations and cancers. Ethnobotanical survey through interview and using *show-and-tell* method of data collection were conducted among Hausa and Fulani tribes of Northern Nigeria with the view to document useful information on the numerous claims by the local people on the plant. The results revealed that the plant *T. apiculata* has relative popularity among the herbalist (38.2%), nomads (14.8%) and fishermen (16.0%). The most important uses of the plant in traditional medicine are inflammation (Fidelity level: 25.7%) and Haemorrhoids (Fidelity level: 17.1%). These results suggest the relevance of *T. apiculata* in traditional medicine and as a good candidate for drug Development.

Keywords: Ethno-botany, periplocaceae, *Tacazzea apiculata*, traditional medicine

Introduction

The plant *Tacazzea apiculata* Oliv is a woody climber widely distributed in tropical Africa. In South Africa, the twig is powdered and taken in milk or water as “tonic” to improve the general health condition of the body. The leaf is used for skin diseases (Burkill, 1997). The flowers are considered edible (Peters *et al.*, 1992). In Nigeria it is known by the Hausa tribe as *yadiyar kada* (meaning: crocodile vine) where the powdered root mixed with milk or honey is taken orally as remedy to relief pains in pile, inflammatory conditions and cancers (Abubakar *et al.*, 2007).

Botanical studies of *Tacazzea apiculata* showed that the leaf has dorsiventral lamina with characteristic anatomical features which include unicellular, uniserrate and non-glandular trichome, anomocytic stomata and the leaf (Ahmed *et al.*, 2003). Preliminary phytochemical screening of methanol extract of the root bark revealed the presence of triterpenoids/stEROIDS, saponins, and flavonoids in the plant and the extract gave a medium lethal dose (LD_{50}) of 118.3 mgkg⁻¹ i.p (Ahmed *et al.*, 2006). Anti-inflammatory property (Ahmed *et al.*, 2004) and analgesic effects (Ahmed *et al.*, 2007) have been reported. Recently, Ahmed *et al.* (2010) also reported the presence and concentration of some micronutrients, essential elements including Mn (1110±28.4 ppm) in leaves, Cu (28.2±6.47 ppm) in twigs, Fe (1310±26.6 ppm) and Zn (177±6.69 ppm) in root of *T. apiculata*.

The aim of this work is to document information on the traditional uses of the plant specifically, to see whether the uses of the plant were fairly consistent over the project area, or if they change from village to village or between the two ethnic groups (Hausa and Fulani) or even among the traditional medical practitioners.

Materials and Methods

Study site

The survey was conducted in Kangimi village, Igabi Local Government, Nigeria. Kangimi village is a famous settlement of the Hausa and Fulani tribes. Kangimi is located off Kaduna-Jos road 31 kilometer away from Kaduna. It comprises of four major settlements and other small hamlets and several settlements of Fulani nomads closer to Kangimi Dam. Although Kangimi is an ancient village, it lacks most of the social amenities. There is no provision for primary health care; hence the inhabitants depend solely on traditional medicine. The village depends on a well built since 1949 and perhaps stream water and no light. Until recently (2000-2007),

there was no access road, no school, and no market. The population of Kangimi is between 10,000-12,000 people. The major occupation of the community is farming followed by fishing and hunting.

Respondents/informants

The survey was conducted among Hausa and Fulani tribes found in the study site. All the respondents/informants were categorised according to specialty. Each category is recognised and accepted by the communities as knowledgeable and competent to provide health care using natural resources such as plants. The respondents/informants included herbalists, healers, spiritualists, hunters, farmers, nomadic pastoralists etc. They were in the age range of 45–85 years and are a total of 81 (71 men and 10 women).

Interviews

Interaction with participants and interviews were carried out in their homes and/or clinics. The Information on the uses of *T. apiculata* was collected from May to November. Generally, the interview was conducted in Hausa which is commonly understood and spoken by the two tribes. As a rule some of the responses to questions were probed further for more details taking precautions to avoid leading questions and things that could be misinterpreted by the respondents. Some of the participants were visited twice. The participants were assured that their responses would be used only for research purposes and the information given would be treated with utmost care and confidentiality. Responses were recorded in a field book and tape recorder for analysis.

Show-and-tell method of data collection

The show-and-tell method and personal interviews involved carrying standard herbarium specimen that shows all the important structures (leaves, flowers, fruits, etc.) during the survey to be examined by the villagers as the center piece of the study. A fresh sample of the plant was also taken in case, the villagers may find it difficult to identify.

Fidelity levels (FL)

Fidelity levels (FL) (Friedman *et al.*, 1986; Alexiades, 1996) were also determined to identify the usefulness of *T. apiculata* to treat a particular ailment. This index measures the degree of consensus between informants and the relative importance of *T. apiculata* within each group. It was calculated according to the formula:

$$FL (\%) = (Np/N) \times 100$$

Where: Np was the number of informants that claim a use of *T. apiculata* to treat a particular disease and N was the number of informants that claim the use of *T. apiculata* as a medicine to treat any given disease.

Plant collection and identification

Samples of *T. apiculata* were collected from Kangimi and transportation to the Department of Biological Sciences, Ahmadu Bello University Zaria for authentication of identity via taxonomic means. Voucher No. ABU-6975 was used for comparison.



Fig. 2: *Tacazzea apiculata* in its natural habitat

Results and Discussion

Respondents (mostly hunters and fishermen) were able to identify the plants. The name of the plant varies slightly from one respondent to another; however the names mostly reflect the structure of the plant yadiya. The most common Hausa names identified by the survey include *yadiyar kada*, *yadiyar rafi*, *yadiya dawa*, or simply *yadiya*.

Relative popularity of *T. apiculata* among traditional medical practitioners

Out of the 81 traditional medical practitioners interviewed, 47(58%) gave positive responses on the identity of *T. apiculata* and 35(43.2%) respondents gave positive responses on the uses of the plant. Detailed distribution of popularity rate (% Pr) within each category is presented in Table 1 and Fig. 1. *T. apiculata* is more popular among herbalists, barbers/surgeons and nomads while the plant appears to be less popular or not known by the bone setters and spiritualists within the survey site (Fig. 2).

Table 1: Some local uses of *Tacazzea apiculata* in Hausa/Fulani traditional medicine

Used locally for	Local names	Part used	Mode of preparation	Mode of admin.
Haemorrhoids	<i>Basir</i>	leaves/root	boiling in water	oral/bath
Worms expulsion	<i>Tsutsan ciki</i>	leaves	boil with natron	oral
Abdominal pain	<i>Ciwon ciki</i>	leaves	boil with natron	oral
Wound healing	<i>Gyanbo</i>	root bark	powder applied	topical
Cancer	<i>Daji</i>	Root /leaves	boil with natron	oral
Inflammations	<i>Kumburi</i>	root	powder/milk	oral
Venereal diseases	<i>Sanyi</i>	aerial part	boiling in water	oral
Food/vegetables	<i>Kwaddo</i>	flowers	vegetables	oral
Excess phlegm	<i>Majina</i>	leaves	soak in water	oral
Epilepsy	<i>Farfadiya</i>	leaves/root	burnt powder	oral/Inhalation

Table 2: Level of consensus on uses of *Tacazzea apiculata* in Hausa/Fulani traditional medicine

Used locally for	Local names	Part used	Mode of preparation	Mode of admin.
Haemorrhoids	<i>Basir</i>	leaves/root	boiling in water	oral/bath
Worms expulsion	<i>Tsutsan ciki</i>	leaves	boil with natron	oral
Abdominal pain	<i>Ciwon ciki</i>	leaves	boil with natron	oral
Wound healing	<i>Gyanbo</i>	root bark	powder applied	topical
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Venereal diseases	<i>Sanyi</i>	aerial part	boiling in water	oral
Food/vegetables	<i>Kwaddo</i>	flowers	vegetables	oral
Excess phlegm	<i>Majina</i>	leaves	soak in water	oral
Epilepsy	<i>Farfadiya</i>	leaves/root	burnt powder	oral/Inhalation

Local uses of *Tacazzea apiculata* in Hausa and Fulani traditional medicine

The most common uses of *T. apiculata* according to the survey are presented on Table 2. They were identified according to their fidelity level (FL). These include inflammation (*kumburi*) 25.7% and pains associated with haemorrhoids (*basir*) 17.1%. Other respondents claimed that it could also be effective in treatment of wounds (*gyanbo*) 5.7%, cancers (*daji*) 11.4%, epilepsy (*farfadiya*) 11.4%, helminths or wound expulsion (*tsutsan ciki*) and excess phlegm (*majina*) 5.7%. Different parts of the plant are used for different purposes and oral administration is common (Table 2). The fidelity level (Table 3) revealed that there is high consensus among the respondents on the use of *T. apiculata* to treat Hemorrhoids, *Basir* (17.1%), Cancer, *Daji* (11.4%) and Inflammation, *Kumburi* (25.7%).

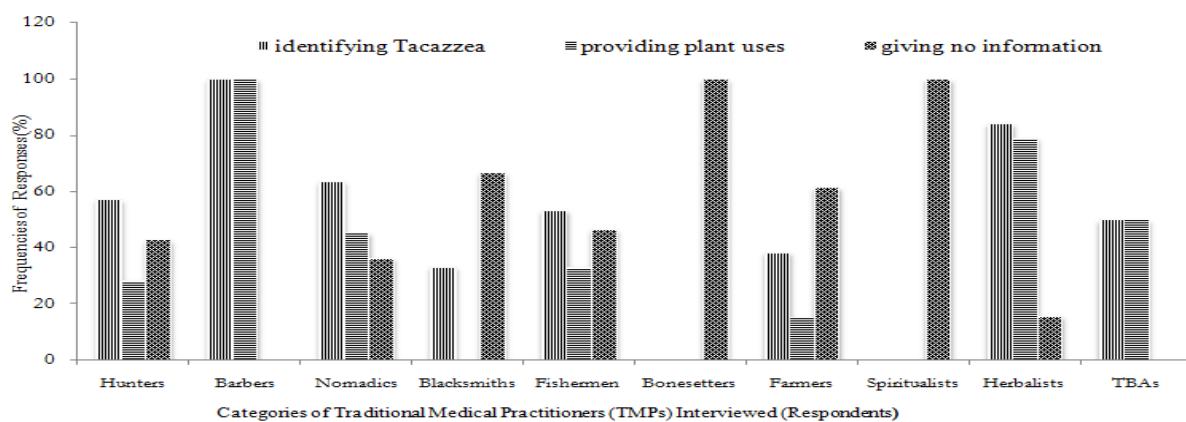


Fig. 1: Response levels from TMPs on the ethnobotanical uses of *T. apiculata*

Table 3: Distribution of responses on uses and relative popularity of *T. apiculata*

Category	Rrespondents interviewed	Respondents identifying Tacazzea	Respondents providing plant uses	Relative popularity (% Pr)
Hunters	<i>Mafarauta</i>	7	4 (8.5%)	2 (5.7%)
Barbers	<i>Wanzamai</i>	5	5 (10.6%)	5 (14.3%)
Nomads	<i>Makiyayya</i>	11	7 (14.9%)	5 (14.3%)
Blacksmiths	<i>Makeri</i>	3	1 (2.1%)	0 (0.0%)
Fishermen	<i>Masunta</i>	15	8 (31.9%)	5 (14.3%)
Bone setters	<i>Madaura</i>	1	0 (17.0%)	0 (0.0%)
Farmers	<i>Manoma</i>	13	5 (10.6%)	2 (5.7%)
Spiritualists	<i>Bokaye</i>	5	0 (0.0%)	0 (0.0%)
Herbalists	<i>Magorawa</i>	19	16 (34.0%)	15 (42.9%)
TBAs	<i>Angwarzoma</i>	2	1 (2.1%)	1 (2.9%)
Total	81	47	35	-

Conclusion

The traditional uses of *Tacazzea apiculata* have been documented for the first time to the best of our knowledge. The high degree of consensus between informants and the relative importance of *T. apiculata* within each group of the interviewees is an indication that the plant is important in Hausa and Fulani folkloric medicine. This result has provided a good platform for further research in order to provide detail scientific justification for the speculated uses of the plant.

Acknowledgment

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Conflict of Interest

The authors declare that there is no conflict of interest related to this study.

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