

are traded. Data collection phase took place in
naire solicited information on the socio-demographic
e use of this plant species by the populations, the
as well as the quantity sold per day.
ritional, therapeutic and cosmetic purposes with the
l. Respondents were predominantly female over 55
of this plant is by purchase and the average amount
at various organs of *B. sapida* are used by the
e valorization of plant resources.

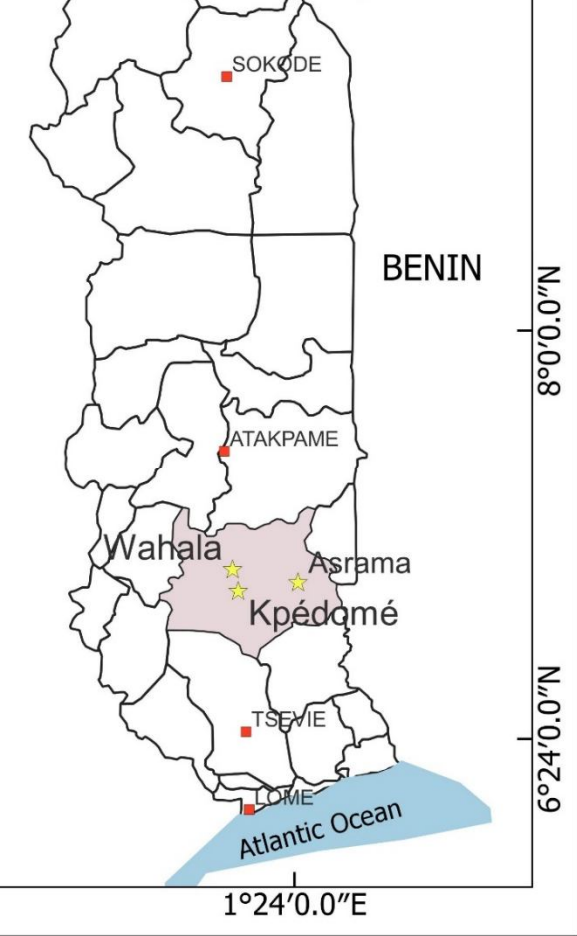
Survey; Vegetable species.

and therapeutic plants in the world, food insecurity
oping countries. According to FAO data, the number
the world is approximately 855 million, including 820
million is in transition and 10 million in so-called
-Saharan Africa is seen as one of the poorest regions

special place because they are involved in livelihood
d, agricultural and even socio-economic value [2].
ns are needed to capture indigenous knowledge
that this orally conveyed knowledge is subject to loss
nowledge would also assist in the development of
ood formulations containing macronutrients and
been a growing interest in food plants in recent
s nutraceuticals. Thus, the potential beneficiation of
pecially rural populations is of immense value as
lations are not within the reach of these populations.
s pesticides [3]. Notwithstanding, the therapeutic and

almost non-existent. Nevertheless, some work has been done on the physicochemical composition of the arils of *B. sapida*. Due to the importance of this fruit for the Togolese population and the lack of knowledge on the immature arils, it is therefore urgent to carry out a scientific study to discover the real therapeutic and food value of this fruit and deepen knowledge of its use, and subsequently to determine the main objective of this work was to carry out an ethnobotanical survey on *B. sapida* to understand the value of this

three prefectures (Kozah, Haho and Tône) of Togo were selected based on three main reasons: i) the geographical distribution of *Blighia sapida* in the local botanical flora of Togo [9], and the water and forest service inventory phase, ii) the presence in these localities of traditional knowledge of the *Blighia sapida* plant, and iii) the fact that these species are sold.



collection

Information concerned the habitat and management demographic characteristics of the respondents (age, sex, education, roots, fruits, leaves), places of supply, routes of transport, uses, prohibitions, and the side effects linked to each

The survey was conducted using the semi-structured interview method in the markets. The sample size of our respondents was 45, evenly distributed in the three villages of Dagnelie [10]. Thus, per village, 15 people were interviewed, as well as their age. This survey also collected data on the quantities sold per day, quantitative and qualitative socio-economic characteristics of the actors involved,

The socio-economic data were coded and inserted into the Excel spreadsheet. The data were analyzed using Minitab 17.0 and GraphPad Prism 7 software. The analysis was done by village and by sociolinguistic group in order to compare the quantities sold (using the Chi-square) between ethnic groups and the quantities sold of *B. sapida*. Finally, the quantitative and qualitative data were subjected to an analysis of variance to compare the quantities sold.

B. sapida has nutritional potential. It is usually eaten raw, or cooked. *Blighia sapida* oil contributes significantly to the diet of a certain tribe to improve the taste of dishes. During the storage of food, dried arils of this plant are significantly used. The immature fruit is used to catch fish. In the

held by women.

ents, in addition to these different uses mentioned
s: providing firewood to households, protects the soil
ates in synergy with d 'other plants to the practice of

tics of respondents

were of several ethnicities and different age groups.
ics relating to the ethnic group, the religion, the level
pondents. The ethnobotanical investigations focused
female against 11% male. In addition, the age group
95 years old with an average age of 50 years old.
more than a third of the study population. The analysis
are more in the majority (60%) while the Kabyè
p (48%).

stics of respondents during the survey

	Respondents (%)			
	Kozah	Haho	Tone	Average
0 years [	20	25	15	20
0 years [	20	15	15	16.67
0 years [	30	40	30	33.33
5 years]	30	20	40	26.67
	15	2	15	10.67
	85	98	85	89.33
	90	85	66	80.33
ool	5	15	14	11.33
School and above	5	0	20	8.33
	80	30	70	60

of	Preparation method (Frequency of citation)	Administration route
	Decoction (100%)	Oral route
	Decoction (80%), infusion (20%)	Oral route
	Decoction 100%	Oral route
	Cooking (80%), drying (20%)	Oral route

and prohibitions related to the use of *Blighia*

found in its natural habitat range as a fruit and shade tree. It grows in deep and well-drained soils, but it is also found on shallow and sandy soils. In dry areas, it is often present on termite mounds and logged soils, and does not tolerate water-logged soils. Side effects associated with the use of this plant, only unripe fruits, which includes vomiting, diarrhea, and nausea.

Prices vary from 50 FCFA (≈ 0.08 €) to 100 FCFA (≈ 0.16 €) per kg per season; and that the sum sold daily was on average 1000 FCFA, not significant between the prefectures ($p > 0.05$). In Togo, it is generally done by purchase.

CONCLUSION

Our study revealed that *B. sapida* is used for nutritional purposes. This plant can therefore be qualified as a food. Despite the side effects, they are almost non-existent in Togo; this state of affairs

of Dadaïwa et al. [13] who revealed similar results. In addition, the survey sampled several people with different levels of knowledge about malnutrition, the consequences of the level of education of the respondents. According to the survey, in the population market the products of *B. sapida* to meet the health problem, the schooling of children and the results are consistent with those of Dossou et al. [4]. The financial assets from *B. sapida* are invested in schooling.

1.3.1. Beliefs and prohibitions related to the use of *Blighia*

It was found that the method of cooking would have a significant influence on the value of this plant. This was also reported by Vodouche [14] who found that boiling water increased the protein and lipid contents of *Blighia macrocarpum* lipids and the proteins of *Ocimum sanctum*, a medicinal species acclimatized in Benin. Apart from the medicinal value, *Blighia* has a significant therapeutic potential and can therefore be used to treat various pathologies. According to the survey, the main route of administration is the oral route because most of the diseases affect the digestive organ.

It was also found that this plant species is known by more than 80% of the population, estimated by 82% of them. These results are consistent with previous studies that estimated the recognition and consumption rate of wild vegetables in the population. Regarding the availability of fruits and the picking of vegetables harvested in the rainy season, it was found that they are preserved to cover the dry season or lean seasons. According to [15], the nutritional value of wild vegetables would be high because they are rich in vitamins, proteins and mineral salts. This is important for the nutritional balance, especially during lean periods. The medicinal value of the species is represented by the fruits in their natural state. The medicinal part is full of enormous nutritional potential.

When collected, the women involved in the marketing of *B. sapida* obtain a considerable financial income. This state of affairs is

ity standard, Participants' written consent has been
(s)).

ng interests exist.”.

performed the statistical analysis, wrote the protocol,
ript. 'AN, TS, MM and FTB' managed the analyses of
naged the literature searches. All authors read and

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