Collection of edible wild fruits in Eastern Region of Ghana

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ABSTRACT

Edible wild fruits were collected in the Eastern Region of Ghana. Interviews and group discussions were the methods used to know the locations and subsequent collecting of the fruits. Twelve accessions of fruits were collected of which most were from trees. Cash crop (cocoa) farms were the habitats for most fruit trees in the region. *Chrysophyllum albidum* and some trees were deliberately planted in farms for income and sale. Some fruit trees were being domesticated.

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RÉSUMÉ

BOATENG, S. K., OSEKRE, E. A., ABOAGYE, L. M. & YEBOAH, E. A.: *Collection des fruits sauvages comestibles dans la région de l'Est du Ghana.* La collection des fruits sauvages comestibles était entreprise dans la région de l'Est du Ghana. Les entrevues et les discussions en groupe étaient les méthodes adoptées pour connaître les emplacements et par la suite, la collecte des fruits. Douze accessions des fruits étaient ramassées dont la plupart étaient cueillies des arbres. Les champs de culture commerciale (cacao) étaient les habitats pour la plus grandes parties des arbres fruitiers dans la région. *Chrysophyllum albidum* et quelques arbres étaient délibérément plantés aux champs pour le revenu et le commerce. Certains des arbres fruitiers étaient en train d'être domestiqués.

Introduction

In Ghana, numerous edible wild fruits have provided nutrition and income to the indigenous people for many years. The fruit trees sometimes serve medicinal purposes for the people. The edible wild fruit trees are found in forests, farms and in home gardens. In some farms they are not deliberately planted; but once found growing, they are protected and maintained. Some of these fruits have high economic returns; so they are intentionally planted in farms and in home gardens. Usually, the potential of the fruits are yet to be exploited (Osman *et al*., 1997).

Kwesiga *et al*. (2003), researching in some southern African countries, reported that indigenous fruits in the region had the potential to improve nutrition and generate income for the rural families. A study in Zimbabwe by Mithofer & Waibel (2003) indicated that most people in the rural areas benefited from the sale and consumption of indigenous fruits. Wild edible fruits form an important part of traditional diets in the Himalayan region, and the nutritive value of some wild fruits is comparable with some commercial fruits (Sundriyal & Sundriyal, 2004). *Morrenia odorata*, a liana found in Paraguay and Argentina, has its fruits and other parts of the plant eaten and the foods prepared from it are highly valued. This has led to the plant being protected and cultivated (Arenas, 1999). Parmer (1989) reported that some edible wild fruits could be grown as orchard crops and ornamental trees along road sides. From the above, it becomes important to survey, collect and conserve these wild fruits for further studies.

Materials and methods

Most edible wild fruit trees are in season during the dry season; nonetheless, some fruit in the rainy season. In view of this, edible wild fruits were collected during both seasons in the Eastern Region. Districts in the Region with forest cover

were visited, and District Forestry and Agricultural Officers in each district were contacted to know the locations to collect edible wild fruits. This information was supplemented with that of the local people. Towns and villages within the collection area were sampled and visited. The places visited were at least 5 km apart.

The collecting team usually visited the towns and villages early in the morning before the farmers departed for their farms. On reaching a town or village, interviews and group discussions were held. In villages, the team was divided into two groups; while one group contacted the chief to inform him of the mission, the other engaged some people in the village in interviews and group discussions on the streets and in homes. The chief normally summoned some people in the village and a group discussion ensued. Afterwards, if there were some edible wild fruits in the area, the authors were led to the sites. In towns, the chiefs were not normally contacted; nonetheless, interviews and group discussions were held on the streets and in some homes.

For germplasm collection, fruits that had fallen onto the ground from tall trees were collected. For shrubs and small trees, fruits from basal, middle and upper parts were collected. Fruits from each plant were taken as one accession. Herbarium specimens of leaves and other parts of the plants were collected and pressed. Passport data on latitude, longitude, altitude, drainage, associated plant species and population size, among others, were recorded on all the accessions collected.

The fruit samples collected were kept in moist sawdust in polyethylene bags. The seeds were depulped 2 days after arrival at the base station. The seeds were sown after various treatments had been applied to enhance germination.

Results

Table 1 shows the locations of edible wild fruits collected from the Eastern Region of Ghana. These lie within latitude 06° N and longitude 000° W.

Twelve accessions were collected in the Region. These included popular edible wild fruits like *Chrysophyllum albidum, Vitex doniana, Dacryodes klaineana* and *Spondias mombin*. Eleven out of the 12 accessions collected were trees. With the exception of *Cola gigantea*, which was a tall tree, the rest were either medium-sized (M) or small (S) trees. The only shrub was *Carpolobia lutea*.

Most edible wild fruit trees were found in cash crop farms. The cash crop was cocoa. Eight accessions were found in cocoa farms, one accession was found in plaintain and cassava farm (food crop farm), and three accessions in secondary forests (Table 2). Suhum-Kraboa-Coaltar District was the area where most fruits were found (Table 1). The fruits were found in well-maintained cocoa farms (Table 2). *Chrysophyllum albidum* trees, which had been deliberately planted, were abundant in the cocoa farms.

Discussion

The habitat in which the fruit trees were found is of great interest. In the Eastern Region of Ghana, most fruit trees were found in cash crop farms. This shows the importance farmers attach to the fruit trees in economic returns and modifying the ecosystem to enhance productivity of the cash crops in providing some amount of shade for the cocoa trees. For example, in the Suhum-Kraboa-Coaltar District where some edible wild fruits were found, the fruit trees were found in well-maintained cocoa farms. It was learnt that the farmers deliberately plant seedlings of *C. albidum* in their farms.

Buyers from the cities come to the rural areas to buy the fruits of *C. albidum* from the farmers. Thus, the farmers are able to generate a lot of income from the sale of the fruits. Some farmers also plant *S. mombin* in their farms as food source and for sale. *Dacryodes klaineana* is a popular fruit among children when in season. These show some positive signs which point to the domestication of some fruit trees. This supports an observation by Aiyelaagbe *et al.* ((1998) that

TABLE 1

Locations of Edible Wild Fruits Collected in Eastern Region of Ghana

Accession no.	*Name of species*	*Location*	*District*	*Lat. °N*	*Long. °W*
GH7432	*Vitex doniana*	Nankese Ningo	Suhum-Kraboa-Coaltar	06° 04.779'	000° 23.139'
GH7427	*Spondias mombin*	Atuakrom	Suhum-Kraboa-Coaltar	06° 04.077'	000° 23.145'
GH7424	*Carpolobia lutea*	Atuakrom	Suhum-Kraboa-Coaltar	06 °03.857'	000° 22.864'
GH7426	*Napoleonaea vogelii*	Atuakrom	Suhum-Kraboa-Coaltar	06° 03.857'	000° 22.804'
GH7428	*Myrianthus arboreus*	Addo Nkwanta	Suhum-Kraboa-Coaltar	06° 04.150'	000° 23.160'
GH7449	*Chrysophyllum albidum*	Mamfe Nkwanta	Suhum-Kraboa-Coaltar	06° 02.504'	000° 24.199'
GH7451	*Chrysophyllum albidum*	Mamfe Nkwanta	Suhum-Kraboa-Coaltar	06° 02.533'	000° 24.177'
GH7455	*Dacryodes klaineana*	Akwadumso	Atiwa	06° 17.611'	000° 41.405'
GH7440	*Cola gigantean*	Akwabooso	Atiwa	06° 20.983'	000° 38.660'
GH7422	*Cola milenii*	Osuobeto	Akwapim North	06° 00.721'	000° 15.254'
GH7389	*Myrianthus arboreus*	Dobidi	Kwahu South	06° 36.681'	000° 37.123'
GH7390	*Spondias mombin*	Manso Hwediem	Kwahu South	06° 36.508'	000° 35.995'

TABLE 2

Habit and Habitat of Edible Wild Fruits in Eastern Region of Ghana

Accession no.	*Scientific name*	*Local name*	*Habit*	*Habitat*
GH7432	*Vitex doniana*	Punyu	Tree (M)	Farm (Cash crop)
GH7427	*Spondias mombin*	Atoa	Tree (M)	Farm (Cash crop)
GH7424	*Carpolobia lutea*	Ofea	Shrub	Farm (Cash crop)
GH7426	*Napoleona vogelii*	Obua	Tree (S)	Farm (Cash crop)
GH7428	*Myrianthus arboreus*	Kwakuoaduane	Tree (S)	Farm (Cash crop)
GH7449	*Chrysophyllum albidum*	Alatsa	Tree (M)	Farm (Cash crop)
GH7451	*Chrysophyllum albidum*	Alatsa	Tree (M)	Farm (Cash crop)
GH7455	*Dacryodes klaineana*	Adwea	Tree (M)	Forest (Secondary)
GH7440	*Cola gigantea*	Watapuo	Tree (T)	Farm (Food crop)
GH7422	*Cola milenii*	Mmoframofra kookoo	Tree (S)	Farm (Cash crop)
GH7389	*Myrianthus arboreus*	Kwasi popuro	Tree (S)	Forest (Secondary)
GH7390	*Spondias mombin*	Atoa	Tree (M)	Forest (Secondary)

Note: (M) is medium-sized tree (S) is small tree (T) is tall tree

an edible wild fruit can be grown to generate cash as well as for home consumption. It is important managing wild fruits on farmers' fields, because a study by Cruz & Casas (2002) found that fruits from managed populations of *Poleskia chende* were larger, heavier, sweeter, and had thinner peels than those from the wild.

Some accessions were found in secondary forests that had been cultivated before, but the fruit trees were not cut down. This supports a study in which it was found that some farmers adopt practices to protect the edible wild fruits when they are clearing the land for cultivation (Fondoun & Manga, 2000). The habits of the edible

wild fruit plants showed that most were trees (11). The small trees are easy to harvest. One tree was tall and big, making it suitable to be felled as timber. Conservation of these becomes very crucial in order not to lose them.

Conclusion

The Eastern Region in Ghana has so many edible wild fruits which have not been fully exploited. It was observed that some fruit trees are being adopted in the traditional agroforestry systems, and the habitats of the edible wild fruits point to domestication of some fruit trees; for example, *C. albidum* is being grown commercially. These plants can be used as sources of germplasm for developing fruit trees for industrial purpose.

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