

## Ethnopharmacologic perspectives on diet and medicine in Northern Nigeria

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### RÉSUMÉ

Nous présentons une revue sur l'usage des plantes par les Hausa du Nigeria du Nord. Elle fournit les données spécifiques qui montrent comment l'usage multicontextuel des plantes élargit le champ des circonstances qui exposent les peuples aux constituants pharmacologiquement actifs. Les catégories particulières d'usage de plantes examinées ici sont : médecine, nourriture, cosmétique et hygiène personnelle. La recherche est orientée particulièrement sur une seule classe d'activité — action antimicrobienne — et sur les plantes qui entraînent le plus de chevauchement entre les catégories (« overlapping ») considérées. De plus, nous montrons comment le savoir-faire d'utilisation des plantes par les peuples indigènes aide à conserver la biodiversité.

### INTRODUCTION

Since our pioneering work (ETKIN AND ROSS 1982) which emphasized the significance of overlapping contexts of use for medicinal and food plants, we have advocated a synthetic treatment that fully explores the pharmacologic implications of plant use by contemporary populations. This paper reviews the use of plants by Hausa people in northern Nigeria, to provide specific data that illustrate how the multicontextual use of plants extends the range of circumstances and media that expose people to pharmacologically active constituents. The issue is further problematized to illustrate how this multicontextual use helps to conserve biodiversity.<sup>1</sup>

### RESEARCH SETTING AND METHODS

Since 1975 we have sustained a comprehensive investigation of medicine, diet, and health in a rural Hausa community in northern Nigeria. The research site is a remote rural village located 50 km southeast of the urban center of Kano. The nucleated hamlet numbers approximately 400 residents, whose

which was once interspersed by grasses and is now, after generations of intensive agriculture and grazing, highly disturbed. Over the last several decades local populations have been increasingly influenced by the introduction of biomedicine, nonlocal foodstuffs, and commercial products for cosmetics and manufacture. But despite pressures toward biotic simplification and the availability of nonlocal products, Hausa still have opportunity to select from among a large number of local plant species for medicinal, culinary, and other objectives.

Conceived initially as a study of Hausa plant medicines, the scope of our research was necessarily expanded to include systematic dietary and related surveys, as we acknowledged use of the same plants in these various contexts (for recent discussions of methods, consult ETKIN & ROSS 1991a; ETKIN *et al.* 1990; ROSS *et al.* 1991). In order to address the physiologic implications of plant use, we focused our attention further on plants actually ingested, inhaled, or applied in such a way that contact with the body occurs for sufficient time to convey physiologically active plant constituents to receptive tissues — as, for example, when the

## PLANT MEDICINES

For this Hausa population plant medicines still dominate preventive and therapeutic medicine. This sustains "tradition" — not in a static and passive sense, but as part of a dynamic medical paradigm that retains and transforms conventional elements at the same time that it absorbs such innovations as exotic botanicals and pharmaceutical drugs (ETKIN *et al.* 1990).

Of the 374 plants used in preventive and therapeutic medicine, 345 are used for disorders with overtly physiologic symptoms such as fever, stomach upset, or pain; for these, Hausa invoke naturalistic etiologies which include excess heat, or contamination with dirt. 266 plants figure in the mediation of spirits or malevolent human agency such as witchcraft and sorcery; disorders attributed to these causes typically are ignored in ethnopharmacologic studies because there is no biomedical analogue, and because they are dismissed by researchers as "simple superstition" without empirical basis. I deliberately include treatments and preventives for witchcraft and sorcery because they involve ingestion and other contact with plants that carries the potential of exposing people to physiologically active substances. These categories are summarized in Table 1.

**Table 1**  
Hausa Plant Medicines

Intended use	"Semi-wild" Plants		All plants	
	n plants	n remedies	n plants	n remedies
Overtly physiologic	254	1854	345	2275
Other	215	452	266	526
Totals	272 <sup>a</sup>	2306	374 <sup>a</sup>	2801 <sup>b</sup>

a. Totals are less than the sums due to multiple plant uses.

b. Excluded are 5 remedies that specify plant location or situation rather than species.

## MEDICINAL FOODS

Plant medicines overlap most conspicuously with foods (ETKIN & ROSS 1991b): of the 119 plants that this population identify as food, all but 5 are included among the total 374 medicinals. This does not mean that Hausa intermix the domains food and medicine. In fact, they do not: doing medicine and doing food are conceptually and physically discrete. But Hausa cultural and biological knowledge of plants affords considerable flexibility of use. The same plant, even the same plant part may have both medicinal and culinary functions, so that the category "medicinal foods" is a large one.

A further refinement of these data draws attention to "semi-wild" plants among the Hausa medicinal foods.<sup>2</sup> These are plants that are not expressly cultivated but are affected by

human agency nonetheless: plants that are not removed when they appear adventitiously on farms, or that might be encouraged (but not cultivated) in other locations in which they occur — in compounds, on farm borders, in public spaces (see discussion below on sources and biodiversity). Hausa use 254 semi-wild plants for physiologic disorders and 215 for diseases of other etiology (Table 1).

Noncultigens have been overlooked by researchers of human diet — perhaps not so much deliberately, but because the field methodologies applied in food surveys are insufficiently rigorous to identify items that have no counterpart in western cuisines (*e.g.*, something other than "starches," "vegetables," and the like) and do not appear in existing published compilations of "Foods of X Region." This reflects a tacit, shared perception that wild plants do not contribute substantially to routine food intake, whereas, in fact, wild foods are customary and meaningful features of cuisines worldwide: noncultigens are used variously as full meal elements, as snacks, or to stretch, flavor, garnish, or otherwise mark other foods. As it relates to health, some researchers propose that the value of wild foods lies in their amplification of diet by increasing the range of available nutrients generally. More specifically they identify certain nutrients that have an established link to immune competency — for example, vitamins, minerals. Discussion later in this paper reveals that while conventional nutrient quality deserves attention, there are other, pharmacologic implications of consuming these "wild" species.

In keeping with the central theme of this discussion, I emphasize again that the use of plants in more than one context — here food and medicine — has significant implications for the extent to which people are exposed to pharmacologically active constituents. It merits examining medicinal plants used for hygienic and cosmetic objectives as well.

## PLANTS AS ITEMS OF PERSONAL HYGIENE

Recorded for use in personal hygiene are plants included in such activities as general bathing and attending to hair, teeth, and skin. To the extent that these are routine activities, performed several times per day, this context offers regular and substantial exposure to whatever active constituents occur in the substances used. Plants are concocted into soaps, oils, media for oral lavage, hair treatments, and chewing sticks. Of the 16 plants so identified, all are used as medicines, 6 also as foods, and 3 also as cosmetics (Table 2).

## COSMETIC PLANTS

Cosmetic plants are used principally by women, whose objectives include the adornment of eyes (typically with black or blue colors), highlighting designs that have been cicatrized or drawn onto the skin, and pigmentation of skin and lips with red color agents. Girls learn cosmetics at an early age; boys and men imitate this adornment rarely, and irregularly.

**Table 2**  
Hausa Plants Used for Personal Hygiene:  
Overlapping Contexts of Use

Genus species	Hausa	Med	Food	Cos	Hyg
<i>Anogeissus leiocarpus</i> (DC) Guill & Perr	MARKE	●			●
<i>Arachis hypogaea</i> L.	MAN GYADA	●	●	●	●

Paradoxically, most — 46% — of Hausa semi-wild medicinals occur on farms, where they have been intentionally disregarded during weeding in order to reserve them for use in diet, medicine, and other anticipated or actual needs. This identifies the Hausa farm as something considerably more complicated than monocropped or intercropped stands of domesticated plants. It is instead the locus of significant botanical diversity that has been deliberately constructed and maintained. Through

texts results in significant exposure to whatever constituents are contained within those plants.

At this juncture, a more fruitful exercise is to redirect attention to the pharmacologic potential of these plants in order to assess the health implications of their use. This too is complex, especially as such activity is mediated by differences among plant parts, growing locations, season, and mode of preparation (including combination with other plants). Whereas a full pharmacologic assessment is beyond the scope of this paper, it is possible to further refine the inquiry by focusing on a single class of activity, antimicrobial action, and on plants that demonstrate the most overlap among the use categories considered – *i.e.*, plants to which people are exposed on a more regular and sustained basis by virtue of their multiple uses.

I direct attention now to the 8 plants used in 3 or more of the contexts addressed in this paper: medicine, diet, personal hygiene, and cosmetics (Table 4). Antimicrobial activity has been demonstrated for 7 of these, the exception being *Arachis*

**Table 4**  
Hausa Plants Used in at Least 3 Contexts

Genus species	Hausa	Med	Food	Cos	Hyg
<i>Anacardium occidentale</i> L.	KANJU	●	●	●	
<i>Arachis hypogaea</i> L.	MANGYADA	●	●	●	●
<i>Commiphora africana</i> (A Rich) Engl	DASHI	●	●	●	●
<i>Diospyros mespiliformis</i> Hochst	KANYA	●	●	●	
<i>Indigofera arrecta</i> Hochst ex AR	BABA	●	●	●	●
<i>Salvadora persica</i> L.	SHIWAKA	●	●		●
<i>Vernonia colorata</i> Drake	SHIWAKA	●	●		●
<i>Vernonia amygdalina</i> Del	SHIWAKA	●	●		

### CONCLUSION

Applying a multicontextual perspective to inquiry on medicinal plants reveals more about the physiologic significance of these plants than do the single-use studies that are constrained

## NOTES

1. Some of the data that were presented to the European

## REFERENCES

ETKIN N.L., 1994a, Consuming a therapeutic landscape: a multicontextual framework for assessing the health significance of human plant in