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TRAMIL ethnopharmalogical survey in Les Saintes (Guadeloupe, French West Indies): A comparative study

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ABSTRACT

Aim of the study: The aim of this study was a comparison of popular household remedies in primary health care in the communities of Terre-de-Haut and Terre-de-Bas, the inhabited islands of 'Les Saintes' archipelago (Guadeloupe, French West Indies).
Methods: Twelve ailments, with higher prevalence, were chosen in each island and a total of 216 families were interviewed using TRAMIL participative ethnopharmacological interviews.
Results: According to TRAMIL methodology (frequency over 20%), twenty-two plants uses were recorded for Terre-de-Haut and eighteen for Terre-de-Bas. The islands share only ten significant plants uses and four of them have notable different frequencies. The informant consensus factor in the use of many specific remedies was fairly high, that gave an additional validity to these popular medicines.
Conclusion: The data presented in this study show that popular knowledge on medicinal plants uses is still alive in the studied area. The difference between the two nearby islands is very narrow but on the other hand, there exist some differences possibly due to a probable declining of plant resources and a more important flux of migration and its provision of other practices of healthcare in Terre-de-Haut.

1. Introduction

Ethnopharmacology is an interdisciplinary and recent science including medicine, botany, chemistry, toxicology, pharmacognosy and anthropology. The purpose of this social and natural science is to better understand the bases and principles of traditional medicine (Edwards et al., 2005; Heinrich et al., 2009) and to develop a good and larger use of them. Moreover ethnopharmacology plays a more significant role in developed countries because they have begun to turn to alternative therapies (Aburjai et al., 2007) and it is considered as a source of potentially important new pharmaceutical substances (Magassouba et al., 2007).

Medicinal plants were used in all Caribbean countries including the French West Indies since the pre-colonized period when the first inhabitants of these areas learned from their environment by tasting and using what was available (Longuefosse and Nossin, 1996). Caribbean popular medicine is a familial self-medication based on the humoral theory, which comes from the Amerindian, European and African cultures. This popular medicine is essentially characterized by plants uses (Bougerol, 1983; Goldwater, 1983; Robineau and Weniger, 1990). At the present time, medicinal plants continue to be used as treatments for several illnesses in these areas. It is thus important to document their uses and perform studies about their pharmacological activities to assure their efficacy and safety (Andrade-Cetto, 2009). Moreover, because of the success and diffusion of modern medicine, practices and products, there is a risk of disappearance of traditional medicine in Caribbean countries, like in several countries in the world (Magassouba et al., 2007; Guarrera et al., 2005). This probable disappearance may be also due to the fact that this knowledge is principally orally inherited (Inngjerdingen et al., 2004; Kosalge and Fursule, 2009). This is the reason why ethnopharmalogical studies are also considered important for the conservation of cultural patrimony.

TRAMIL (Program of Applied Research to Popular Medicine in the Caribbean), created in 1982, is a network program of applied research on the traditional and medicinal plant resources of the Caribbean zone. TRAMIL's mission is to validate the traditional uses of medicinal plants for primary health care. Scientific validations

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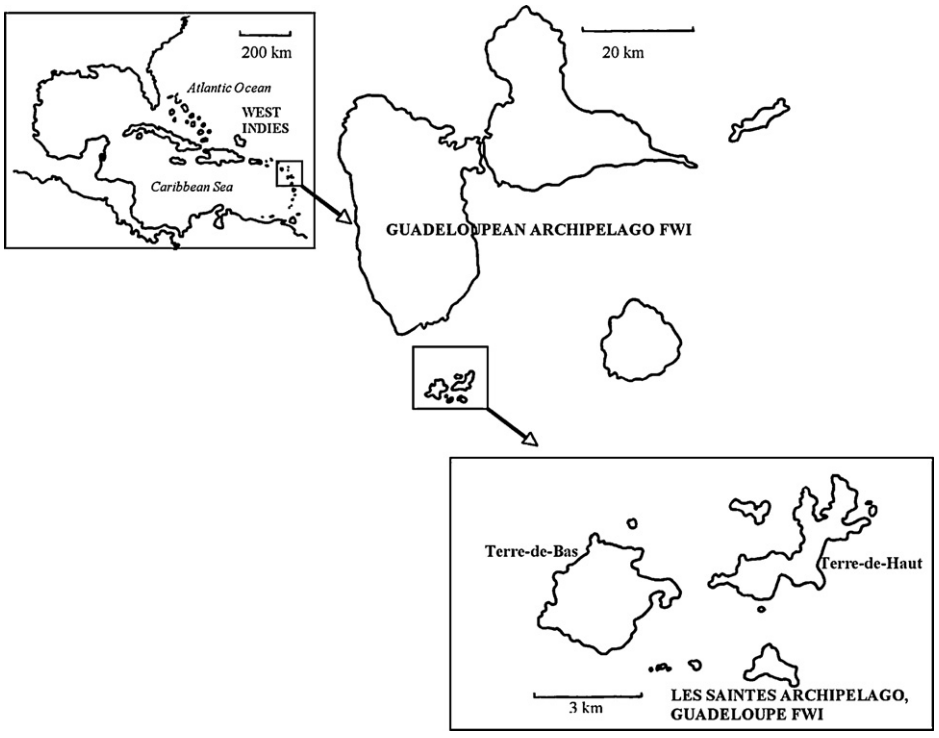

Fig. 1. Survey area: Les Saintes (Guadeloupe, FWI).

of traditional health practices are based on criteria for safety and efficacy.

So far, TRAMIL surveys have been conduced in several Caribbean countries such as Antigua, Belize, Barbados, Colombia, Costa Rica, Cuba, Dominica, Guatemala, Granada, Guadeloupe, Haiti, Honduras, Martinique, Nicaragua, Panama, Puerto Rico, Quintana Roo, Dominican Republic, Saint Lucia, Saint Martin, Saint Vincent, Tobago and Venezuela (TRAMIL, 2007).

There has been only one published report on an ethnopharmacological survey in French West Indies (Longuefosse and Nossin, 1996). In these areas, people and their lifestyles change quickly. Thus, it is urgent to encourage, with the help of ethnopharmacological studies, the preservation of the culture, traditional knowledge and sustainable utilization of medicinal plants. The objectives and experience of TRAMIL seem to be the best methodology to continue to study and preserve Caribbean popular medicine.

The aim of the research was to make an inventory and a comparison of traditional household remedies in primary health care in the communities of the two inhabited islands according to TRAMIL methodology. In this work, we focus on two small islands 'Terre-de-Haut' and 'Terre-de-Bas' of the archipelago of Les Saintes (Guadeloupe, French West Indies). Although close, they experienced quite different styles of life, and we hypothesized that they developed different choices and use of medicinal plants to treat the same conditions.

2. Materials and methods

2.1. Survey area

The Guadeloupean Archipelago is located in the Lesser Islands of West Indies at 16°15N of latitude and 61°35W of longitude. It is a French overseas department made up two large islands of Basse-Terre and Grande-Terre and the small dependencies of Marie-Galante, La Desirade and Les Saintes. The archipelago of Les Saintes comprises eight islands: Terre-de-Bas, Terre-de-Haut, Le Pâté, Les Augustins, La Coche, Grand Ilet, La Redonde and Ilet à Cabrit. Only Terre-de-Haut and Terre-de-Bas are inhabited and are the object of the present study (Fig. 1). These islands have an uneven and volcanic relief marked by a coastal and xerophitic vegetation. This vegetation is divided in two facieses: the 'littoral' and the 'hill' vegetation. The 'littoral' vegetation is itself divided in two types of facieses: (i) the 'beach' with halophilic plant species like *Stenotaphrum* sp., *Coccolaba uvifera* or *Hippomane mancinella* and (ii) the 'cliff' with Cactaceae associations. The 'hill vegetation is located in the interior zones and marked by deciduous tree and shrub species like *Lonchocarpus benthamianus*, *Bursera simaruba*, *Tabebuia heterophylla*, *Cassia* sp. and *Acacia* sp. (Bonniol, 1980; Portecop, 1982). This latest vegetation is more developed and preserved at Terre-de-Bas where the area are less urbanized than Terre-de-Haut (IGN, 2002). The soil at Terre-de-Haut is a vertic soil with smectite and magnesite. At Terre-de-Bas we have vertisols due to the less eroded relief (Cabidoche Y.M., personal communication 2010). The climate of Les Saintes is considered tropical with an annual temperature comprise between 19 and 33 °C (data from the France Meteorological Service, http://www.meteo.gp/). Terre de Haut is more dry and arid (annual mean rainfall 500–1000 mm) and Terre de Bas gets a little more rainfall (1000–1500 mm) (Lasserre, 1982). The presence of three 'ravines' (little watercourses) in Terre-de-Bas (Ravine Caraibe, Ravine Grand Fond and Grande Ravine) and no one at Terre-de-Haut (IGN, 2002) also suggest that the first island is more under the rain influence.

According to INSEE (France's National Institute of Statistics and Economic Studies) census of 2006, Terre-de-Bas and Terre-de-Haut now respectively supports 1030 and 1838 inhabitants. The linguistic characteristics of this population are the same of the French West Indies countries with an official French language and a local language, the Creole. The Guadeloupean society is a melting pot of Creole, French, African and Indian cultures. The 'Saintois' of Terre-de-Bas have the same Guadeloupean characteristics. On the other hand, an ethnic specificity could be observed at Terre-de-Haut. Until the seventeenth century white French people inhabited the island. At the present time, the inhabitants are often called 'whites' that are persons of light mixed race. The black color never pre-