Ethnobotany of *Agdestis clematidea* (Phytolaccaceae) in Two Municipalities of Las Tunas Province, Cuba

Orlando A. Abreu, D. Piloto, R. Velázquez and S. Prieto

Research

Abstract

A survey of the ethnobotany of *Agdestis clematidea* Moç. & Sessé ex DC. (Phytolaccaceae) was carried out in Puerto Padre and Amancio Rodríguez Municipalities of Las Tunas Province, Cuba. The first records of medical use of this plant were obtained and related to the genitourinary system; new vernacular names were also reported. This species has not yet been studied; hence, the need for pharmacological and phytochemical approaches for this plant.

Resumen

Se realizó una encuesta etnobotánica sobre *Agdestis clematidea* Moç. et Sessé ex DC. (Phytolaccaceae) en los municipios Puerto Padre y Amancio Rodríguez de la Provincia de Las Tunas, Cuba. Por primera vez se obtienen reportes de empleo como medicinal de esta planta, los cuales se relacionan con el sistema genitourinario; también se refieren nuevos nombres comunes para la misma. Debido a que esta especie no se ha investigado antes se sugiere que se estudie desde el punto de vista farmacológico y fitoquímico.

Introduction

The Phytolaccaceae family has well known medicinal species in the Caribbean Basin such as *Petiveria alliacea* L., (Guinea Hen Weed in Jamaica, **Namú** or **Anamú** in Cuba) and *Phytolacca icosandra* L. (Southern Poke-weed in English speaking West Indies, **Bejuco Carbonero** in Cuba) (Roig 1975). However, *A. clematidea* has not been reported to be used traditionally as a medicinal plant. This Phytolaccaceae species was introduced from Mexico as an ornamental plant (Roig 1988) and was classified by Ricardo, Pouyú and Herrera (1995) as a hemiagrophyte-epecophyte intentionally introduced. Since it is subspontaneous all over the island, it was included in the later Flora of Cuba, where it is described as: “a climbing dense vine, mainly herbaceous; its foliage completely covers its support and reaches several meters in height. Bulky root with turnip form” (Greuter 2002). Roots can be very large and heavy. Figure 1 shows a root that is 44 cm long and weighs 8.7 kg.

All parts of the plant have a disagreeable smell when they are crushed; hence the vernacular names, **Flor del Pedo** and **Pedo de Chino** (Flatulence Flower and Chinese Flatulence). In the last centuries, it has been reported that at some farmers’ parties people spread the flower on the floor, causing the dancers to leave the house to avoid the irresistible stink (Roig 1988). More recently, one of the authors (OA) has heard reports in Camagüey Province of a similar use for fun by children and teenagers in the classroom of the school.

The aim of this work is to survey populations from the two municipalities of Las Tunas Province, at the near east of Cuba in order to find possible ethnomedical use of *A. clematidea*.

Correspondence

Orlando Alejandro Abreu,Departamento de Alimentos, Facultad de Ingeniería Química, Universidad de Camagüey, Camagüey 74650, CUBA
orlando.abreu@reduc.edu.cu

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Figure 1. *Agdenstis clematidea* Moç. et Sessé ex DC. roots.

Materials and Methods

The study area was in Puerto Padre and Amancio Rodríguez Municipalities at the northwest and southwest, respectively, of Las Tunas Province. Las Tunas Province is located in the Eastern part of Cuba. The survey model used by Fuentes and Granda (1988) were adapted to interview people on the particular use of *A. clematidea* as a medicinal plant. After the objective of the work was explained to the participants, oral informed consent was obtained. Voucher specimens were deposited at the Herbarium of Centro de Investigaciones de Medio Ambiente de Camagüey and Universidad Pedagógica "José Martí" (HPVC). The voucher specimens, Abreu_10883 (HACC) and del Risco_8204 (HIPC), were authenticated by specialists E. Martínez and R. del Risco, respectively.

A wide search of the available literature and the Internet, including Napralert Database, was conducted with respect to the ethnobotany, biological activity and phytochemistry of this species.

Results

In total, 33 interviewees, 22 in Puerto Padre and 16 in Amancio Rodríguez, provided information. The ethnobotanic data documented are presented in Table 1. Four new common names were recorded from both places. Ethnomedical reports were found only in Amancio Rodríguez, and all of them related to the genitourinary system. The root is the only part of the plant used, taken internally.

In both municipalities, the plant is reported to repel the Cuban leaf cutting ant, *Atta insularis* Guérin-Ménéville (Hymenoptera: Formicidae), commonly called **bibijagua**, which is known to damage crops.

No publications related to the traditional use of this vine were found.

Discussion and Conclusions

Reports concerning the medicinal use of *A. clematidea* are new to Cuba (Fuentes & Expósito 1995, V. Fuentes, pers. comm. 2004) and the world as well.

The *A. clematidea* agroecologic report is known at the Instituto Investigaciones Fundamentales de la Agricultura Tropical "Alejandro de Humbold" in Havana, where it has been studied as an insecticide against *Mocis latipes* Guenée (Lepidoptera: Noctuidae) and *Musca domestica* L. (Diptera: Muscidae) (González *et al.* 1995).

The new common names of *A. clematidea*, in addition to the ones previously mentioned, are very graphic concerning the shape and smell qualities of this plant, its biological activity against **bibijaguas,** and its use as an aphrodisiac. **boniato**, sweet potato, *Ipomoea batatas* (L.) Lam. (Convolvulaceae), refers to the aspect of the roots. **Aura**, *Cathartes aura* L. (Aves: Cathartidae), is a carrion bird that in Cuba is a popular symbol of disgusting things; this term is also used in reference to *A. clematidea*. In the case of **Congo garañón**, **Congo** refers to people from the

Table 1. Ethnologic report of *Agdestis clematidea* Moç. et Sessé ex DC. (Phytolaccaceae), in Las Tunas Province, Cuba.

Municipality	Use	Part	Form	Common name
Puerto Padre	Repel '**Bibijaguas**', *Atta insularis* Guérin-Ménévill (Hymenoptera: Formicidae)	Root	Planted near crops	**boniato espanta bibijaguas**; **boniato de aura**
Amancio Rodríguez	Repel **bibijaguas**		Pieces introduce in ant hills	**mata bibijaguas**
	Urinary infection		Decoction or macerated in water	**Congo garañón**
	Renal stones			**Congo garañón**
	Aphrodisiac		Macerated in rum (aproximately 40% ethanol Vol/Vol)	**Congo garañón**

Congo area in West Africa, which was one of the sources of slaves at the time of the Spanish colonization of the island, and **garañón** (jackass) is an adjective used by some people when referring to a man with an active sexual life in the sense of male potency. The connotation of the combination of these names is connected with the reported use of *A. clematidea* as an aphrodisiac. Also known as an aphrodisiac, the Cuban plant species, *Morinda roioc* L. (Rubiaceae), has a similar common name of **palo garañón**.

These ethnomedic documented data could bring interesting criteria for pharmacological and phytochemical research of *A. clematidea*, since no research on the biological activity of this Phytolaccaceae has been done.

Recently, the chemical composition of the volatile compounds from the root of *A. clematidea* was determined by using GC, GC/MS techniques; 99 structures were identified, including sulphur compounds. Dimethyl disulfide and dimethyl trisulfide were characterized as the main compounds, 35.1% and 32.2% respectively (Pino & Abreu 2008). These must be the substances responsible for the particular (even irritant) odor of the entire plant.

Previously Salt *et al.* (1991) reported sterols in this plant. More phytochemical studies are needed in the way to achieve the rationale of the folk, and maybe other unknown activities. Currently, some investigations are underway at the University of Camagüey on this new medicinal plant.

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Literature Cited

Fuentes, V.R. & A. Expósito. 1995. Las encuestas etnobotánicas sobre plantas medicinales en Cuba. *Revista del Jardín Botánico Nacional* 16:77-144.

Fuentes, V.R. & M.M. Granda. 1988. Estudios de la Medicina Tradicional en Cuba. III, *Revista Cubana Farm* 22:77-90.

González I., V.R. Fuentes, R. Avilés, J. Estrada, M. González, O. Llorente, Y. Rodríguez, H. Ramos, E. Sotomayor & S. Fraga. 1995. Extract production of *Agdestis clematidea* Moç. et Sessé with insecticide activity. In *INIFAT–MINAG*, Editors, Plaguicidas Biológicos de Origen Botánico, La Habana.

Greuter, W. 2002. Phytolacaceae. In *Flora de la República de Cuba. Seria A, Plantas Vasculares*. *Fascículo 6(3)*. Edited by W. Greuter, R. Rodríguez & H. Manitz. Koeltz Scientific Books, Konigstein.

Pino, J. & O. Abreu. 2008. Volatile compounds from the root of *Agdestis clematidea* Moç. et Sessé ex DC. from Cuba. *Journal of Essential Oil Research* 3:20.

Ricardo N.E., E. Pouyú & P.P. Herrera. 1995. The Synanthropic Flora of Cuba. *Fontqueria* 42:367-429.

Roig, J.T. 1988. *Diccionario botánico de nombres vulgares cubanos*. Editorial Ciencia y Técnica, La Habana.

Roig, J.T. 1975. *Plantas medicinales, aromáticas o venenosas de Cuba*. Editorial Ciencia y Técnica, La Habana.

Salt, T.A., S. Xu, G.W. Patterson & J.H. Adler. 1991. Diversity of sterol biosynthetic capacity in the Caryophyllidae. *Lipids* 26:604-613.