

Phytochemical screening of Costa Rican plants: Alkaloid analysis. V.*

by

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Abstract: A total of 82 species of Costa Rican plants were tested for their alkaloid content in both acid and alkaline layers; eight are reported for the first time as containing alkaloids.

MATERIAL AND METHODS

Roots, leaves and stems of Costa Rican plants were used, processed and analysed following procedures already described. Herbarium vouchers of each species studied were prepared and placed in the Herbarium of the Dept. of Biology, of the University of Costa Rica.

We have followed in this report the same criteria of previous papers (Sáenz, 1964; Sáenz & Nassar, 1965, 1968, 1970).

RESULTS

A summary of the results is detailed in Table 1.

DISCUSSION

From the comparison of the above results with the literature at hand (Willaman, 1961) it appears that the qualitative alkaloid analysis of the following plants is reported for the first time: *Prosopis chilensis* DC., leaves and stem; *Exostema caribaeum* (Jacq.) Roem & Schult., leaves and stem; *Guettarda macrosperma* Donn. Smith., leaves; *Bumelia Austin-Smithii* Standl., leaves; *Solanum umbellatum* Mill., leaves; *Capparis incana* H. B. K., leaves; *Capparis odoratissima* Jacq., leaves and stem; *Trichospermum mexicanum* (DC.) Bail., leaves and stem.

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TABLE 1

Qualitative alkaloid analysis

Species	Folk name	Locality	Plant part	Alkaloid Analysis	
				H + Layer	OH- Layer
ANNONACEAE					
<i>Annona reticulata</i> L.	"Anona"	Guanacaste	Leaves	-	-
<i>Desmopsis Oerstedii</i> Safford. Bull	"Guineo"	San Ramón	Leaves	-	-
			Stem	-	-
ARACEAE					
<i>Monstera Friedrichsthali</i> Schott.	"Piñanona", "Ventanilla"	Turrialba	Leaves	-	-
<i>Philodendron radiatum</i> Schott.		Turrialba	Stem	-	-
ARALIACEAE					
<i>Dendropanax arboreum</i> (L.) Dec.	"Zopilote", "Cacho de vena- do"	Volcán Poás	Leaves	-	-
<i>Sciadodendron excelsum</i> Griseb.	"Chile"	Atenas	Whole plant	-	-
BOMBACACEAE					
<i>Ceiba aesculifolia</i> (Br. & Baker)	"Pochote pelota"	Guanacaste	Leaves	-	-
			Stem	-	-

BORAGINACEAE

Cordia glabra L.

"Muñeco", "Boriogre"

C. Universitaria

Leaves

-

-

Stem

-

-

BURSERACEAE

Bursera tomentosa (Jacq.) Triana
& Planch.

Guanacaste

Leaves

-

-

Stem

-

-

CAESALPINIACEAE

Haematoxylon Brasiletto Karst.

"Palo de tinta"

Guanacaste

Leaves

-

-

Stem

-

-

Swartzia cubensis (Britt. et
Wils) Standl.

Guanacaste

Leaves

-

-

Stem

-

-

CAPPARIDACEAE

Capparis incana H. B. K.

Guanacaste

Leaves

+

-

Stem

-

-

Capparis odoratissima Jacq.

Guanacaste

Leaves

++

-

Stem

+

-

CONVOLVULACEAE

Ipomoea neei (Spreng) O'DonnellS. Pedro de
Montes de Oca

Whole Plant

-

-

ERYTHROXYLACEAE

<i>Erythroxylon lucidum</i> H. B. K.		San Ramón	Leaves	+	+
			Stem	-	-
<i>Erythroxylon havanense</i> Jacq.		Guanacaste	Leaves	-	-

EUPHORBIACEAE

<i>Sapium macrocarpum</i> Muell.	“Yos”	Guanacaste	Leaves	-	-
<i>Croton niveus</i> Jacq.	“Copalchí”	San José (Escazú)	Bark	-	-
<i>Sapium pachystachys</i> Schum & Pitt.		C. Universitaria	Stem	-	-
<i>Phyllanthus Pittieri</i> Pax		C. Universitaria	Stem	-	-
<i>Gymnanthes lucida</i> Sw.		Guanacaste	Leaves	-	-

FAGACEAE

<i>Quercus copeyensis</i> Muller	“Roble Blanco”	Cartago	Leaves	-	-
			Stem	-	-
<i>Quercus borucasana</i> Trelease	“Roble”	Cartago	Leaves	-	-

FLACOURTIACEAE

<i>Laetia thamnia</i> L. Amoén.		Guanacaste	Leaves	-	-
			Stem	-	-
<i>Xylosma aff flexuorum</i> (H. B. K.) Hemsl.		Guanacaste	Leaves	-	-
			Stem	-	-
<i>Zuelania guidonia</i> (Sw.) Br. & Millsp.		Guanacaste	Leaves	-	-

GRAMINEAE

<i>Bambusa vulgaris</i> Schrad.	“Bambú”	C. Universitaria	Leaves	-	-
			Stem	-	-

GUTTIFERAE

<i>Rheedia edulis</i> Triana & Planch.	“Jorco”	Ciudad Colón	Leaves	-	-
			Stem	-	-

HERNANDIACEAE

<i>Gyrocarpus americanus</i> Jacq.	“Bailarina”	Atenas	Leaves	++	++
			Stem	++	++

JUGLANDACEAE

<i>Alfaroa costaricensis</i> Standl.	“Gaulin”	C. Panam. Sur	Leaves	-	-
			Stem	-	-

LAURACEAE

<i>Licaria limbosa</i> (R. & P.) Kosterms.		C. Universitaria	Leaves	-	-
			Stem	-	-

MALPIGHIACEAE

<i>Malpighia</i> aff. <i>lundellii</i> Morton		Guanacaste	Leaves	-	-
			Stem	-	-

MELASTOMACEAE

<i>Miconia argentea</i> (Swartz) DC.	“Santa Ma.”, “María”	Guanacaste	Leaves	-	-
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MELIACEAE

<i>Trichilia trifolia</i> L.		Guanacaste	Leaves	-	-
			Stem	-	-
<i>Swietenia macrophylla</i> King.	"Caoba"	Guanacaste	Leaves	-	-
			Stem	-	-
<i>Ruagea caoba</i> C. D. C. Harms		Turrialba	Leaves	-	-
			Fruit	-	-
<i>Guarea turrialbana</i> L. León		Turrialba	Leaves	-	-
MIMOSACEAE					
<i>Inga edulis</i> Mart.	"Cuajiniquil", "Guabo"	S. Pedro de Montes de Oca	Leaves	-	-
			Stem	-	-
<i>Pithecolobium costaricense</i> (Britt. & Rose) Standl.	"Cocobola", "Lorito"	Cartago	Leaves	-	-
			Stem	-	-
<i>Inga spuria</i> (Hum. & Bonpl.)	"Cuajiniquil"	Guanacaste	Leaves	-	-
			Stem	-	-
<i>Inga mortoniana</i> J. León	"Guaba María"	C. Universitaria	Leaves	-	-
			Stem	-	-
<i>Inga oerstediana</i> Benth.	"Cuajiniquil"	Cartago	Leaves	-	-
<i>Prosopis chilensis</i> DC.		Guanacaste	Leaves	++	+
			Stem	+	+
<i>Lysiloma seemannii</i> Britt & Rose		Guanacaste	Leaves	-	-
			Stem	-	-

MONIMIACEAE

<i>Siparuna paralleloneura</i> Perk.		Cartago	Leaves	-	-
			Stem	-	-

MORACEAE

<i>Brosimum costaricanum</i> Liebm. Dansk. Vid. Selsk.	"Ojoche"	Guanacaste	Leaves	-	-
			Stem	-	+

<i>Castilla costaricana</i> Liebm. Dansk. Vid. Selsk. Skrivt.	"Hule"	Guanacaste	Leaves	-	-
			Stem	-	+

<i>Ficus velutina</i> H. B. K.	"Higuerón", "Chilamate"	Cervantes, Cartago	Leaves	-	-
			Stem	-	-

<i>Coussapoa panamensis</i> Pittier		Turrialba	Leaves	-	-
			Stem	-	-

<i>Ficus jimenezii</i> Standl.	"Higuerón"	Turrialba	Stem	-	-
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MYRICACEAE

<i>Myrica cerifera</i> L.	"Arrayán"	Cartago	Leaves	-	-
			Stem	-	-

MYRTACEAE

<i>Eugenia salamensis</i> Donell-Smith. var. <i>rensoniana</i> (Standl.) McVaugh.	"Guijaro", "Guayabillo"	Guanacaste	Leaves	-	-
			Stem	-	-

ONAGRACEAE

<i>Jussiaea erecta</i> L.		San José	Whole plant	-	-
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PAPILIONATAE

<i>Crotalaria incana</i> L.	“Quiebra plato”	San Pedro	Leaves	-	-
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			Stem	-	-
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<i>Erythrina costaricensis</i> Micheli.	“Poró”, “Poró colorado”,	Cartago	Leaves	-	-
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	“Elequeme”				
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<i>Myrospermum frutescens</i> Jacq.		Guanacaste	Leaves	-	-
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			Stem	-	-
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<i>Dalbergia retusa</i> Hemsl.	“Cocobola”	Guanacaste	Leaves	-	-
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			Stem	-	-
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POLYGONACEAE

<i>Coccoloba padiformis</i> Meissn.		Guanacaste	Leaves	-	-
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			Stem	-	-
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RHAMNACEAE

<i>Zizyphus guatemalensis</i> Hemsl.		Guanacaste	Leaves	-	-
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			Stem	-	-
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ROSACEAE

<i>Hesperomeles heterophylla</i> Ruiz &		Hda. Retes, Cartago	Leaves	-	-
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Pavon					
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			Stem	-	-
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RUBIACEAE

<i>Exostema mexicanum</i> (Gray)		Guanacaste	Leaves	-	-
			Stem	-	-
<i>Exostema caribaeum</i> (Jacq.) Roem & Schult.		Guanacaste	Leaves	-	+
			Stem	-	++
<i>Guettarda macrosperma</i> Donn. Smith.		Guanacaste	Leaves	-	++
<i>Psychotria carthagenensis</i> Jacq.		San Pedro Montes de Oca	Leaves	-	-
			Stem	-	-

RUTACEAE

<i>Zanthoxylum Kellermannii</i> P. Wilson	"Lagartillo", "Lagarto"	Guanacaste	Leaves	-	-
			Stem	-	-

SAPOTACEAE

<i>Manilkara achras</i> (Mill) Fosb.	"Níspero", "Zapotillo"	Guanacaste	Leaves	-	-
			Stem	-	-
<i>Pouteria</i> aff. <i>campechiana</i> (H. B. K.) Baehni		Cartago	Leaves	-	-
<i>Bumelia panamensis</i> Standl.		Guanacaste	Leaves	-	-
<i>Manilkara spectabilis</i> (Pitt.) Standl.	Níspero	Ciudad Colón	Leaves	-	-
			Cartago	Leaves	++

SOLANACEAE

Solanum umbellatum Mill.

"Zorrillo"

San Pedro Montes
de Oca

Leaves

+

-

STYRACACEAE

Styrax argenteus Presl."Resina", "Laurel",
"Bracimo"

Guanacaste

Leaves

-

-

Stem

-

-

THEACEAE

Freziera candicans Tulasne

Cartago

Leaves

-

-

Stem

-

-

TILIACEAE

Trichospermum mexicanum (DC.)

Bail.

Golfito

Leaves

+

-

Stem

+

-

VERBENACEAE

Rhedeia trinervis (Blake) Mold.

Guanacaste

Leaves

-

-

Stem

-

-

RESUMEN

Se analizó por alcaloides, tanto en la capa ácida como en la alcalina, un total de 82 especies de plantas de Costa Rica. Se comunica por primera vez el análisis cualitativo positivo de 8 de las especies mencionadas en este trabajo.

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