

Fixed Oils of Mexico. III. Habilla de San Ignacio (*Hura polyandra* Baill.)¹

RODOLFO RUIZ MUNGUIA, RICARDO MILLARES, N. F. GURLEY, and W. R. LLOYD,
Armour Research Foundation, International Division, Mexico, D. F.

HABILLA de San Ignacio (*Hura polyandra* Baill. Family Euphorbiaceae) is a little known tree native to the Mexican states of Sinaloa, Coahuila, Guerrero, Oaxaca, Chiapas, Yucatán, and Veracruz. The tree grows to a height of 40 to 50 feet and is said to live 100 years or more. The latex of the plant is reputedly toxic due to its irritant properties, but the leaves of the plant are apparently innocuous.

The fruit of the habilla is quite interesting. It occurs in a form somewhat similar to a small pumpkin, about 2 to 3 inches in diameter, the outer shell consisting of 12 to 16 segments. The fruit remains on the tree after the leaves have fallen; on drying, the shell of the fruit ruptures with explosive violence, throwing the dried seeds as far as 50 feet from the tree. The seeds are round, flat, oily white kernels surrounded by a thin brown shell (1).

Habilla is also known in Mexico by the following native names: "habilla"; "ovillo"; "jabilla"; "solimanché"; "haba de San Ignacio"; "pepita de San Ignacio"; "árbol del diablo"; "haba de Guatemala"; "haba de Indio"; "coatatachi"; and "quauhtlatlatzin." The literature does not disclose that a complete study of the oil has ever been made.

Experimental

The seeds used in this study were obtained in the field from trees growing near Tapachula, Chiapas, Mexico. The sample consisted of seeds gathered from the ground and seeds from mature fruit still on the tree. Quantitative yield of oil was determined from seeds crushed in a mortar and extracted in a Soxhlet extractor with petroleum ether (B.P. 30°-60°C.). Triplicate determinations gave an average yield of 47.4% of the dry weight of kernels.

TABLE I
Physical Characteristics of Habilla Oil

Specific Gravity 25/25.....	0.9188
Refractive Index N _D ²⁰	1.4761
Melting Point.....	6.7°C.
Melting Point of Fatty Acids.....	36.2°C.

Larger samples of oil were prepared by extracting the kernels, previously milled in a Wiley mill, with petroleum ether in a large Soxhlet extractor. After removal of the solvent, a pale, yellow oil was obtained. The physical characteristics of the oil were

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determined by A.O.C.S. Methods (2). The results are given in Table I.

The chemical characteristics were determined by A.O.C.S. Methods (2), with the results reported in Table II.

TABLE II
Chemical Characteristics of Habilla Oil

Saponification Number.....	188.4
Acid Number.....	1.38
Unsaponifiable Matter.....	0.72%
Iodine Number (Wijs 1 hr.).....	103.1
Thiocyanogen Number.....	61.4
Acetyl Number.....	13.4
Saturated Fatty Acids.....	30.87%

The composition of the oil was calculated according to the A.O.C.S. Method using the iodine number, thiocyanogen number, and unsaponifiables (2). The results of these calculations are given in Table III.

The composition of the saturated acid fraction will be reported in a later paper.

TABLE III
Composition of Habilla Oil (%)

Linoleic Acid as Glycerides.....	51.5
Oleic Acid as Glycerides.....	16.1
Saturated Glycerides.....	31.7
Unsaponifiables.....	0.7

Discussion

Although the oil of the habilla seed is suitable for various uses, the habilla does not offer promise for commercial production due to the problems of collecting the seeds.

Summary

The physical and chemical characteristics of the oil of the seed of habilla de San Ignacio (*Hura polyandra*, Baill.) have been reported.

The composition of the oil has been calculated.

Acknowledgment

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