



## CHEMICAL PROPERTIES AND USES OF HOHOBA

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### ABSTRACT:

In this research work, we have identified chemical properties and its derivative of Hohoba. Commonly known as Jojoba. It is the sole species of the family Simmondsiaceae. Also, Jojoba is used as a bio diesel fuel as well as bio degradable lubricants. It is a new solution of fuel in coming days.

**KEY WORD:** *Jojoba, chemical properties and uses.*

### INTRODUCTION:

Jojoba grows to 1-2 m tall, with a broad, dense crown. The leaves are opposite, oval in shape, 2-4 cm long and 1.5-3 cm broad, thick waxy glucose grey-green in colour. The flowers are small, greenish-yellow, with 5-6 sepals and no petals. Each plant is single-sex, either male or female, with hermaphrodites being extremely rare. The fruit is



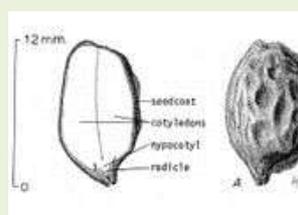
CARROT PLANT

an acorn-shaped ovoid, three-angled capsule 1-2 cm long, partly enclosed at the base by the sepals. The mature seed is a hard oval, dark brown in colour and contains an oil (liquid wax) content of approximately 54%. Jojoba is grown for the liquid wax (commonly called jojoba oil) in its seeds. This oil is rare in that it is an extremely long (C36-C46) straight-chain wax ester and not a triglyceride, making jojoba and its derivative jojoba esters, more similar to sebum and whale oil than to traditional vegetable oils. Jojoba oil is easily refined to be odourless, colourless and oxidative stable, and is often used in cosmetics as a moisturizer and as carrier oil for specialty fragrances. It also has potential use as both a bio diesel fuel for cars and trucks, as well as a biodegradable lubricant. IT is unique in producing wax esters rather than triacylglycerols in its seeds, and it has become a significant crop. It consists mainly of 18:1 (6%), 20:1 (35%) and 22:1 (7%) fatty acids linked to 20:1 (22%), 22:1 (21%) and 24:1 (4%) fatty alcohols. Therefore, it contains C38 to C44 esters with one double bond in each alkyl moiety. As methylene-interrupted double bonds are absent, the wax is relatively resistant to oxidation.

**MATERIALS AND METHOD:**

Several chemical compound and uses of various parts of Jojoba are popular. Chemical compound of Jojoba is abstracted with some different fraction from leaf, bark, root, seed and oil by customery method.

The purpose of this study was to establish a new methodology to remove the toxic compounds present in Jojoba meal and flour. Also, to perform the biological evaluation of the detoxified products and to chemically characterize the protein fractions. Jojoba meal and seed without testa were defatted with hexane and detoxified with a 7:3 isopropanol-water mixture which removed 86% of total phenolic compounds and 100% of simmondsins originally present, NPR values obtained for diets containing such products were significantly different from those obtained with the casein control. Total protein was made up of three different fractions: the water-soluble fraction was the most abundant (61.8%), followed by the salt-soluble (23.6%), and the alkaline soluble fraction (14.6%). The nitrogen solubility curves showed that the isoelectric point for the water-soluble and salt-soluble fractions was pH 3.0, while that of the alkaline fraction fell in the range of 4.5-5.0. All fractions had a maximum solubility at pH 7.0. The methodology reported here, offers a viable solution to eliminate toxic compounds from jojoba meal or seeds, and upgrades the potential use of products such as animal feed or raw material for the production of protein isolates.

**RESULTS AND DISCUSSIONS:**

## Parts used

The whole plant, aerial parts, roots, seeds, and oil extracted from Jojoba.

## Chemical analysis of Jojoba oil

Fatty acids	Range
Palmitic	3.0 % max
Palmitoleic	1.0 %max
Stearic	1.0 %max
Oleic	5.0 - 15.0 %
Linoleic	5.0 % max
Linolenic	1.0 % max
Arachidic	0.5 % max
Eicosenoic	65.0 - 80.0 % max
Behenic	0.5 % max
Erucic	10.0 - 20.0 % max
Lignoceric	5.0 % max

Crude protein 14.03 and 25.24%; ether extract, 48.89 and 14.73%; crude fibre, 10.03 and 10.07%; ash, 1.59 and 4.72, and nitrogen-free extract, 25.46 and 45.25. Jojoba oil contains many important nutrients,

such as vitamin E, B complex vitamins, and the minerals silicon, chromium, copper, and zinc. Jojoba is grown for the liquid wax (commonly called jojoba oil) in its seeds. This oil is rare in that it is an extremely long (C36-C46) straight-chain wax ester and not a triglyceride, making jojoba and its derivative jojoba esters, more similar to sebum and whale oil than to traditional vegetable oils. Jojoba oil is easily refined to be odourless, colourless and oxidative stable, and is often used in cosmetics as a moisturizer and as carrier oil for specialty fragrances. It also has potential use as both a for cars and trucks, as well as a biodegradable lubricant.

#### USES:

Jojoba used in cosmetics , skin care, cleanser, scars marks, rashes; chaffing; roughness; windburn; sunburn; elbows, and heels, cold sores bruises , acne, scalp & hair cleansing, hands & nails. Some of the potential uses for jojoba nuts and plants are as lubrication, cosmetics, pharmaceuticals, salad oil, vegetable oil, shortening, waxes, animal feed supplement (20-30% protein content of oil less meal), animal browse food, ornamental plant, and human food. The roasted nuts smell and taste like roasted coffee beans.

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