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Processing and Analysis of Sinapis Alba (Yellow Mustard) Seeds Oil Obtained by Cold Pressed Method

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ABSTRACT

Mustard oil is versatile cooking oil that adds a distinct flavor and aroma to dishes. However, there are different varieties of mustard oil available, with yellow and black being the most common. In this comprehensive guide, we will delve into the differences between yellow and black mustard oil, including their flavors, health benefits, culinary uses, and where to find them.

Yellow mustard oil is made from the seeds of the yellow mustard plant, scientifically known as Sinapis Alba. The seeds are cold-pressed to extract the oil, ensuring that the natural flavors and nutrients are preserved. This traditional method of extraction, known as cold pressed method, allows the oil to retain its natural properties and distinct flavor.

Yellow mustard oil is rich in monounsaturated and polyunsaturated fats, including omega-3 and omega-6 fatty acids. These healthy fats contribute to cardiovascular health, reducing inflammation, and supporting brain function. Additionally, yellow mustard oil contains essential vitamins like vitamin E and vitamin K, which are important for overall well-being.

Keywords: Production, Chemical Analysis, Fatty Acids Profile of Sinapis Alba (Yellow Mustard Oil)

Introduction

Mustard Seeds

Mustard Seeds are the small round seeds of various mustard plants. The seeds are usually about 1 to 2 millimeter in diameter and may colored from yellowish white to black. They are an important spice in many regional foods and may come from three different plants.

Black Mustard (Brassica Nigra), Brown Mustard (Brassica Juncea), Yellow/White Mustard (Sinapis Alba)

Black mustard is an annual plat cultivated for its dark brown to black seeds, which are commonly used as a spice. It is an upright plant with large stalked leaves. It is found in North Africa, Tunisia, India, Iran etc.

The flowers have four yellow petals, which are twice as long as the sepals. Each stem has around four flowers as the top, forming a ring around the stem.

Brassica juncea, commonly brown mustard, Indian mustard, leaf mustard, oriental mustard and vegetable mustard is a species of mustard plant. The leaves, seeds and stems of this mustard variety are

edible.

The mustard condiments made from the seeds of the brassica juncea is called brown mustard and is considered to be spicier than yellow mustard.

Yellow Mustard is an annual plant of the family Brassicaceae. It is sometimes also referred to as Brassica Alba. Yellow Mustard is an annual, growing to 70 centimeters (28 inch) high with stalk less pinnate leaves. It can be found worldwide most common in Europe, North Africa, Middle East and Central Asia.

The yellow flowers of the plant produce glabrous or sparsely bristled seeds pods. Each fruit contains roughly roughly a half dozen seeds. The plants are harvested for their seeds just prior to the seed pods becoming ripe and bursting open (dehiscing). Yellow mustard seeds are hard spheroid seeds, usually around 1.0 to 1.5 mm diameter, with a color ranging from beige or yellow to light brown.

CULTIVATION OF SINAPIS ALBA (YELLOW MUSTARD) SEEDS

Yellow mustard is also sown as cash crop like toriya between Rabi and Kharif. Additional profit can be earned by its cultivation.

Preparation of Field, Quantity of seed, Seed Treatment, Sowing Time, Quantity of Fertilizer, Method of sowing, Weeding and Hoeing, Irrigation, Crop Protection, Soil Treatment, Foliar Treatment, Harvesting and Thrashing.

PROCESSING OF YELLOW MUSTARD OIL OBTAINED BY COLD PRESSED METHOD

Cold pressed mustard oil is made using a specialized machine known as a Cold pressed mustard oil machine. This process involves extracting oil from yellow mustard seeds without the application of heat, preserving the oil's natural flavors, aroma, and nutritional qualities.

Seed Selection, Cleaning and Grading, Seed Preprocessing, Loading the Cold Pressed Machine, Pressing, Separation, Filtration and Storage.

QUALITATIVE ANALYSIS OF COLD PRESSED YELLOW MUSTARD OIL

Preparation of Test Sample, Determination of Moisture Content, Determination of Specific Gravity, Determination of the Refractive Index, Determination of Flash point., Determination of Color, Determination of Melting Point of Fat, Determination of Saponification Value, Determination of Unsaponifiable Matter, Determination of Acid Value, Determination of Iodine Value, Test for presence of Argemone oil, Determination of Fatty acid composition of Oils and Fats by Gas Liquid Chromatography.

Results

Commodity: Yellow Mustard Oil

Sr. No.	Parameters	Results
1	Moisture Content	0.0136 %
2	Specific Gravity	0.910
3	Refractive Index	1.4657
4	Flash Point	270° C
5	Color in ¼ “Cell	30.0 Unit
6	Saponification Value	172.33

7	Acid Value	0.27
8	Unsaponifiable Matter	0.75
9	Iodine Value	107.72
10	Argemone Oil	Negative
11	Palmitic Acid	1.8536
12	Stearic Acid	0.9528
13	Oleic Acid	10.2415
14	Linoleic Acid	15.1820
15	Linolenic Acid	9.8864
16	Arachidic Acid	4.2217
17	Erucic Acid	45.6478
18	Behenic Acid	1.8569

CONCLUSION

With numerous health benefits and a versatile range of uses, cold pressed mustard oil is a must-have in every kitchen. It is a healthy cooking oil with a host of benefits for the hair and skin. The ayurvedic properties of this oil make it an excellent choice for massage and aromatherapy. Buy cold-pressed mustard oil online from a reputed seller to get the best quality product.

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