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Evaluation of Dabur Refined Coconut Oil In Comparison With Untraded Oil

KL Senthilkumar, Rajiv Bajracharya, Patel Ankur Dilipbhai, Trivedi Divyang Bipinbhai,
Mohamed Yasin B

Padmavathi College of Pharmacy and Research Institute, Periyanahalli, Dharmapuri -635205, Tamil Nadu.

ABSTRACT

Oils are the most important lipids found in nature. They are one of the three major 'food factor' needed for human body, the other two being proteins and carbohydrates. Oils are widely distributed in foods and are of great nutritional value. Coconut oil is also of great nutritional value and as well as therapeutic values. Many oils are available in the market with different brand name. These oils are variable in quality and some are liable to adulteration by cheaper varieties. It is not, as a rule, possible to judge the purity of oil by a determination of any one chemical constituents, and the evidence of quality is usually dependent upon determination of various tests such as refractive index, acid value, iodine value, saponification value, unsaponifiable matter, peroxide value, etc. In order to ensure the safety of consumer the concern authorities like who has prescribed some specification for coconut oil. Our evaluation studies on different brand of coconut oil shows that the quality of coconut oil manufacture by Dabur India Pvt. Ltd. is of superior quality than other branded and untraded locally available coconut oil.

Keywords: Coconut oil, peroxide value, unsaponifiable matter, iodine value, acid value.

**Corresponding author*

E-mail: Klsenthilkumar1969@yahoo.co.uk



INTRODUCTION

Evaluation is systematic determination of merit, worth, and significance of something or someone using criteria against a set of standards. Similarly evaluation of coconut oil means confirmation of its identity and determination of its quality and purity and also involves detection of adulterants.

The evaluation of coconut oil involves determination of physical and chemical properties or values which are commonly known as constants. In physical properties, analysis (evaluation) is carried out for weight per ml, refractive index, optical rotation, melting point, congealing point while for chemical properties the determinations are carried out for acid value, saponification value, iodine value, unsaponifiable matter, peroxide value, etc. in general these value or constants indicate the purity of these samples. the various pharmacopoeias give monograph for each oil or fat separately.

Coconut oil is not only used for its Medicinal properties but also used as Edible oil in their daily recipe. Since it is highly used as Edible oil and Medicinal purpose, the standard of oil should be carried out to ensure the quality of oil and safety of consumers.

Due to its high popularity as Edible oil and Medicinal properties such as antimicrobial, anticarcinogenic, etc. the practice of adulterants is very high. Owing to the medicinal properties attributed to a coconut oil, it is necessary to maintain its Quality and Purity in commercial matter. It is however observe that the Coconut oil in Commerce are frequently adulterated and do not comply with the standard prescribe for authentic oil.

A variety of adulterant are found in natural products (drugs including oil) by which the methods employed for such adulterated practices can be enumerated. During the routine quality control, various tests are employed for their detection. Authentic authorities like WHO has prescribe some Specification to promote the standard of oil and ensure safety for consumption of oil as edible oil and various other medicinal uses.

MATERIALS AND METHODS

Methods of Oil Analysis

- Physical Measurements – Melting point, Refractive Index, etc.
- Qualitative Or Limit Tests for substances likely to be Employed as Adulterants.
- Determination of certain arbitrary chemical constant- Acid value, Iodine value, Saponification value, Acetyl value, Ester value, Hydroxyl value, Peroxide value, Unsaponifiable matter etc.

As Coconut oil is gaining its popularity as edible oil and Medicinal properties such as antimicrobial, anticarcinogenic, antigenotoxic, antidandruff, etc. the practice of adulterants is very high. So the evaluation of coconut oil is necessary to ensure the safety of consumer. According to WHO the standard evaluation test for coconut oil involved following test.

1. Acid value
2. Free fatty acid value
3. Insoluble Impurities
4. Unsaponifiable matter
5. Saponification value
6. Refractive index
7. Colour
8. Iodine Value
9. Peroxide value
10. Specific gravity
11. Preservative test
12. Test for mineral oil
13. Moisture content

Comparative Studies

Comparative studies was carried out between the coconut oils collected from Dabur India Pvt Ltd. and untraded coconut oil collected from the different places of Tamil Nadu.

The standard tests prescribed by the concerned authorities like WHO and IS include free fatty acid value, insoluble impurities, saponification value, unsaponifiable matter, refractive index, color, iodine value, peroxide value, specific gravity, preservative test, mineral oil and moisture contents. These tests are determined in two branded and one untraded locally available coconut oils and compared the results.

RESULTS AND DISCUSSION

The evaluation studies on the different samples of Dabur refined coconut oil and untraded locally available coconut oil is carried out using the standard procedure and test specified as per WHO. The various standard tests are performed and the test shows following results as in table.

Table: Comparative Studies between Dabur Refined Coconut Oil and Untraded Oil

Tests	Specification	Average of 10 sample of Dabur Refined coconut oil	Average of 10 sample of untraded coconut oil
Free fatty acid value	Not more than 0.5%w/w	0.36%w/w	0.49%w/w
Insoluble impurities	Not more than 0.05%w/w	0.026%w/w	0.06%w/w
Unsaponifiable matter	Less than 0.8%w/w	0.42%w/w	0.78%w/w
Saponification value	Not less than 250	274	250

Refractive index	1.448- 1.449	1.448	1.448
Iodine value	7.50 – 10.0	8.2	9.8
Peroxide value	Not more than 1.0	0.5	1.2
Specific gravity	0.915 – 0.920	0.916	0.922
Preservative test	Positive	Positive	Negative
Test for mineral oil	Should be negative	Negative	Positive
Moisture content	Not more than 0.15 %w/w	0.09%w/w	0.22%w/w

CONCLUSION

Our evaluation studies on different brand of coconut oil shows that the quality of coconut oil manufacture by Dabur India Pvt. Ltd. is of superior quality than other branded and untraded locally available coconut oil.

Coconut oil is used in India as cooking fat, hair oil, body oil and industrial oil. Owing to its high therapeutics and medicinal values, it is necessary to maintain the quality of oil. Our studies concluded that the quality of coconut oil produced by Dabur India Pvt. Ltd. is of high quality as different batches of samples of oil collected from the Dabur India Pvt. Ltd. complies with the standard specification specified by WHO.

Dabur India Pvt. Ltd. is one of the leading herbal and cosmetic producers with worldwide reknown reputation. We strongly recommend consumer to use the coconut oil manufactured and marketed in the brand name of Dabur India Pvt. Ltd. and utilize benefits and properties of high quality coconut oil.

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