



# INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

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## MYRISTICA FRAGRANS (NUTMEG) REVIEW

Guide - Prof.Shital sangale mam

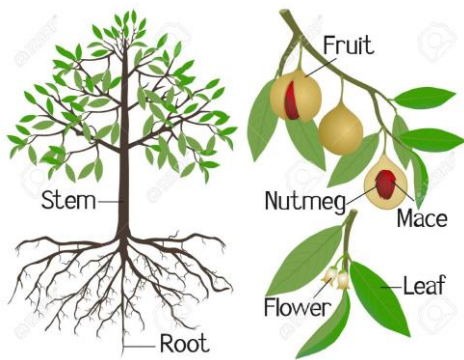
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- **Abstract** :-The first type of healthcare that humans have ever used is herbal medicine. Throughout history, all cultures have utilized herbs. An evergreen tree with the common name "nutmeg," Myristica fragrans, is native to Sri Lanka, India, and Indonesia. It is the primary source of spices, has a delightful perfume, and is frequently used as a flavoring agent .capacity to improve food's flavor. Due to its complex makeup, it possesses a wide range of therapeutic benefits.molecular make-up. The therapeutic effects of M. fragrans in treating a variety of disorders, includingmemory booster, antibacterial, anticonvulsant, aphrodisiac, hypolipidemic, antioxidant, and antidiarrheal as well as hepatoprotective qualities. This study makes an effort to emphasize the existing literature, its historical context, and it Myristica fragrans's medicinal properties. This is beneficial.
- **Keywords** :-Nutmeg, Nutritional Facts, Antioxidant, Anti-cancer,myristica Fragrans,Myricitin
- **Introduction** :-Myristica fragrans, an evergreen tree in the myristicaceae family, is the source of nutmeg. The nutmeg tree is indigenous to Spice Island or the Moluccas. In the West Indies, nutmeg is grown especially. Several species of the genus Myristica's seeds produce nutmeg.Nutmeg trees can grow up to 20 meters (65 feet) in height. Alkaloids, flavonoids, and tannins are chemical compounds found in plants that are physiologically active and have pharmacological effects. Nutmeg. Proteins, lipids, and essential oils are all present in nutmeg. Starch and other residues are also present.The main components of nutmeg essential oil include myristicin and elemicin. Nutmeg helps reduce swelling when used sparingly.

- **Morphological characteristics of Nutmeg :-**



1. **shape** - Broadly oval
2. **Length**- 2-3 mm, **Breath** -2 cm
3. **Colour**- Braun / grayish Reticul ated furrowed
4. **odour** - strong and aromatic ,pungent
5. **Taste** -Slightly bitter

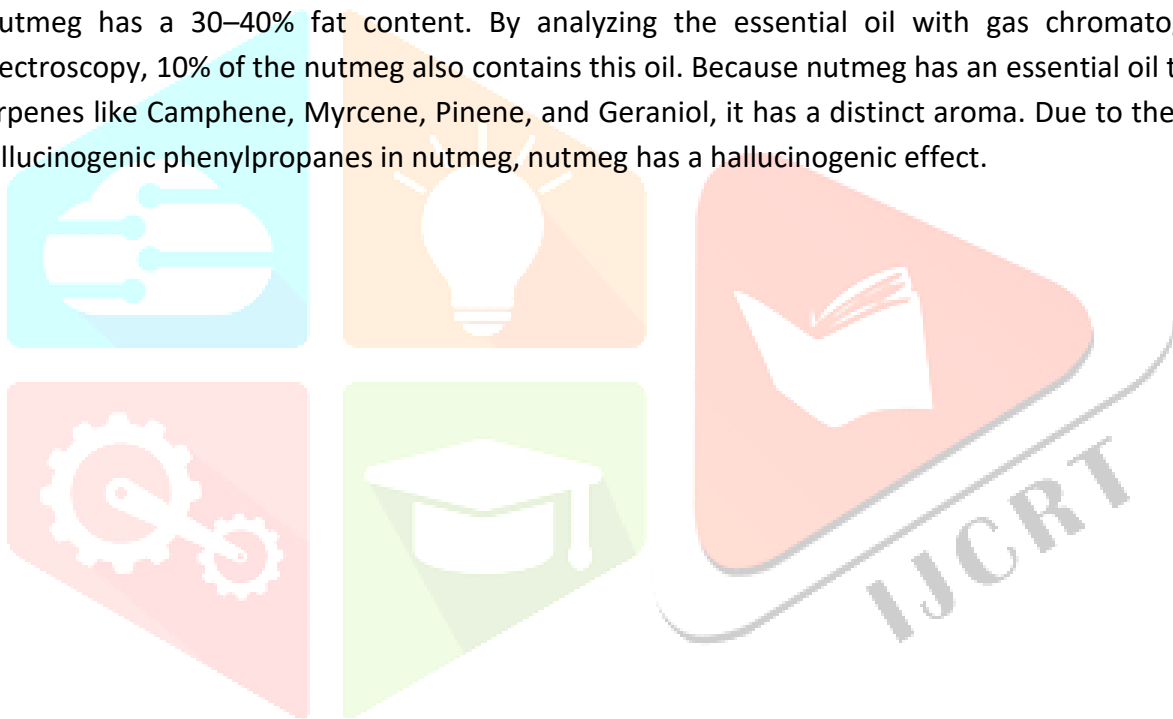


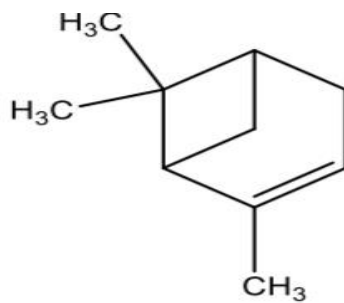
- **Botanical classification :-**

- **Botanical name**- *Myristica fragrans*
- **family name** - myristicaceae
- **kingdom**- plantae
- **class** - magnoliopsida
- **Order**- Magnoliales
- **Genus** - *Myristica* Gronov
- **Species** - *Fragrans*
- **common name** - Jaiphal, jatiphala

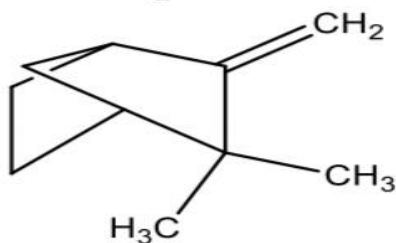
- **Divisn/ phylum** - Tracheophyta
- **Vernacular names of nutmeg :-**
  1. **English** - Nutmeg
  2. **Hindi**- Jaiphal
  3. **Malayalam** - Jathika
  4. **Gujrat/Marathi** - Jaiphal
  5. **Telgu**- Jajikaya
  6. **Tamil**- Jatikkai
  7. **Kannada**- Jakai
  8. **Bengal**-Javitri
- **Chemical constituents:-**

Nutmeg has a 30–40% fat content. By analyzing the essential oil with gas chromatography-mass spectroscopy, 10% of the nutmeg also contains this oil. Because nutmeg has an essential oil that contains terpenes like Camphene, Myrcene, Pinene, and Geraniol, it has a distinct aroma. Due to the presence of hallucinogenic phenylpropanes in nutmeg, nutmeg has a hallucinogenic effect.

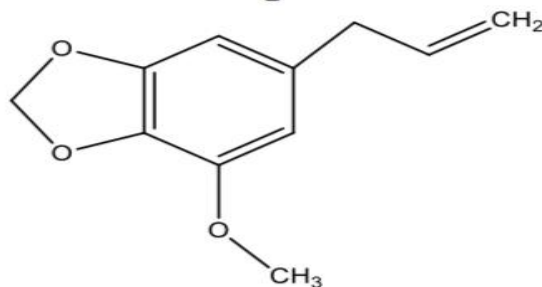




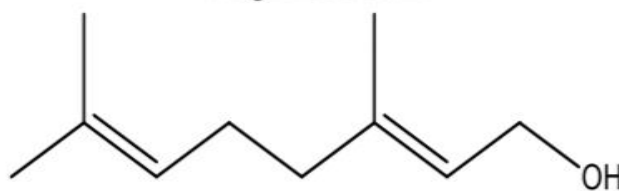
**$\alpha$ -pinene**



**Camphene**



**Myricetin**



**Geraniol**

- **Varities of Nutmeg:-**

- 1) **Viswasree**



- **Morphology characters-**

1. Colour of mace-Dark Red
2. Size of seed- Bold
3. colour of seed - Shining black
4. Special characteristics - A high yielding, High quality.

## 2) keralashree



1. Shape of nut- Bold
2. Colour of ripe fruit- yellow
3. Colour of seed Brownish black
4. Special characteristics-wide adaptability.
5. First nutmeg variety developed by Farmers.
6. very bold nut with thick mace.

## 3) kokan swad



1. Shape -Bold
2. Colour -yellow
3. Special character - Medium size nut, High yielding.

## ● Nutritional Facts :-

Nutmeg is rich source of Fiber.

- 1 Carbohydrates-38%
- 2 Protein-10%
- 3 Cholesterol-0%
- 4 Energy-26%
- 5 Dietary fiber-55%
- 6 Vitamin C-5%
- 7 Vitamin A-3.5%
- 8 Sodium-1%
- 9 Potassium-7.5%
- 10 Calcium-18%
- 11 Iron-38%
- 12 Zinc-20%
- 13 Phosphorous-30%
- 14 Magnesium 46%
- 15 Manganese-126%

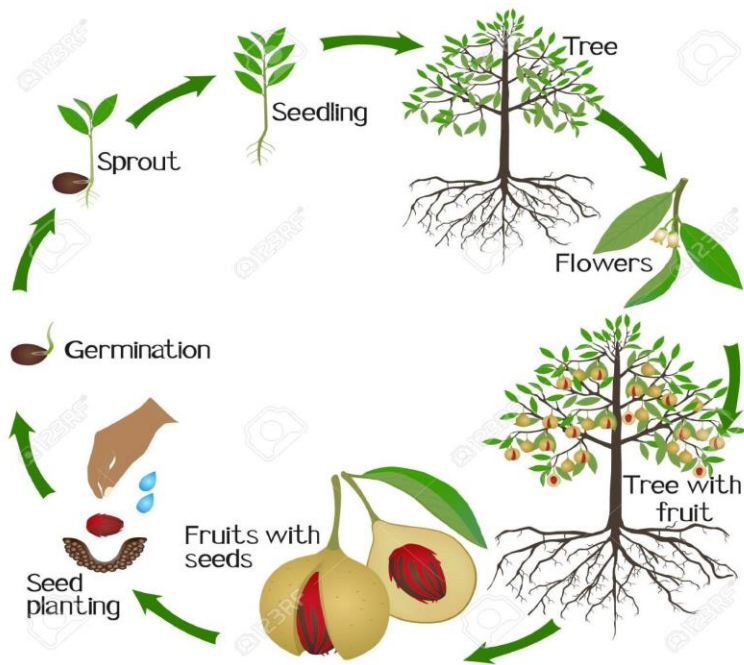
## ● Geographical distribution :-It is Cultivated in World

- India
- Srilanka
- Malaysia
- Grenada
- Taiwan
- China

It is also cultivated in India

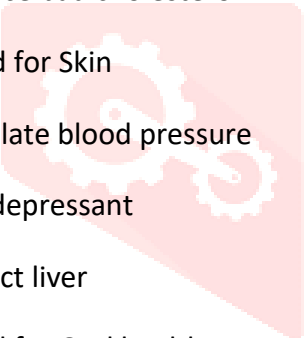
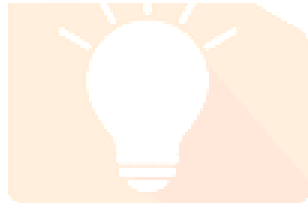
- Tamil nadu
- Thrissur
- Kanyakumari
- Kottayam

## • Production of Nutmeg :-



## • Benefits of Nutmeg :

- Effect against diarrhoea
- Reduce bad cholesterol
- Good for Skin
- Regulate blood pressure
- Antidepressant
- protect liver
- Good for Oral health
- Anticonvulsant properties
- improves brain Health
- improves digestion
- Provide relife from insomnia
- provide relife from pain.
- Cure Toothache
- Improving function of kidney
- Improve blood Circulation



- **Side effects of Nutmeg :-**

1) Nutmeg has adverse symptoms that resemble anticholinergic poisoning. When nutmeg is used in big doses, it can cause neurological symptoms like carpal tunnel syndrome, euphoria, and hallucinations.

2) Vomiting, lightheadedness, nausea, headaches, chest discomfort, tremors, and abdominal pain are some of the common irritating side effects.

3) Elemicin and myristicin, which are opioids by nature and have a psychotropic impact through impairing mental activity, are also present in nutmeg.

4) Consuming large amounts of nutmeg can also result in constipation, difficulties urinating, and an increase in liver fat accumulation.

5) Nutmeg powder can be useful as a hallucinogenic remedy, but excessive consumption can result in epileptic seizures.

6) Hypertension and agitation.

- **Pharmacological Role:-**



**1) Anti-oxidants** -Mace and nutmeg are both used to make nutmeg oil, which has been utilized as an antioxidant. Due to its ability to inhibit lipid peroxidase, nutmeg possesses antioxidant properties. Antioxidant Conduct an in vitro experiment: Due to the presence of different components, such as eugenol and hydrogen atoms, nutmeg has antioxidant properties.

**2) Anti-inflammatory**-The rich inflammatory compound present in nutmeg is called monoterpenes. include pinene and terpineol as well. The pharmacological action of nutmeg oil is demonstrated. However, only petrol-ether extract exhibits anti-inflammatory effect. Inflammation is a common strategy for defending sick tissue and removing dead cells. The natural chemical compound phenylpropene, which is found in



nutmeg myristicin, has anti-inflammatory properties similar to those of non-steroidal anti-inflammatory medications.

**3) Anti-tumor And Anti-cancer** -Nutmeg has the advantage of acting as an anti-cancer myristicin molecule. have a cytotoxic effect on human cells when tested for their ability to kill cancer cells in mice.

**4) Anti-Diabetic Activity** -M . Frangans is associated with Anti-Diabetic potential.It activate(PPAR) peroxisome proliferator receptor which help in improving the insulin sensitivity and lipid metabolic disorder.

**5) Weight loss with nutmeg:** Nutmeg also aids in weight loss. Increasing metabolism can aid in weight loss by assisting the body in removing toxins and improving its digestive capabilities. Your body gets rid of impurities thanks to nutmeg.

**6) radioprotective and immunomodulatory actions** :The radio modifying and immunological modulatory characteristics of the lignans found in fresh nutmeg and mace are present in the aqueous extract. These characteristics in cell-free settings preserved the PUC18 plasmid. to protect DNA from radiation-induced damage. The reaction of the mammalian splenocytes to the polyclonal T cell mitogen Con A (concanavalin) is widely distributed. These mace lignans prevent this process, which was caused by the G1 phase of the cell. rise in pre G1 cells indicates an increase in the G1 cycle and an increase in apoptosis. The rise in induced gene activation Depending on the amount, mace lignans caused cell death. The lignans in mace protect splenocytes against radiations. Depending on the amount of intracellular reactive oxygen species produced as a result of these radiations.

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