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An Inside Review Of *Myristica Fragrans* Houtt. – A Potential Medicinal Plant Of India

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ABSTRACT: Herbal medicine is the oldest form of healthcare known to mankind. Herbs had been used by all cultures throughout history. *Jatiphala* (*Myristicafragrans*Houtt.) commonly known as ‘Nutmeg’. It is mentioned under spices and used in various preparations. *M. fragrans* consisting of the seed has a characteristic, pleasant fragrance and slightly warm taste; it used to flavour many kinds of baked goods, confection, pudding, meats, sausages, sauces, vegetables and such beverages as eggnog. Many phyto-constituents of *M.fragrans*Houtt.is responsible for its effect in curing various diseases. These plants are also pharmacologically studied for antioxidant, anti diarrhoeal, aphrodisiac, anticonvulsant effects. This review attempts to highlight the available literature on *Myristicafragrans*sw.s.r to ethno botany, pharmacognostic characteristics, traditional uses, chemical constituents and summary of its various pharmacological activities along with clinical effects. Other aspects, such as toxicology and precautions are also discussed. This will be helpful to create interest towards Nutmeg and may be useful in developing new formulations with more therapeutic and economical value.

KEYWORDS:*Myristicafragrans*Houtt.,Ethenobotany, Phytochemistry, Traditional uses.

INTRODUCTION:

Myristicafragrans is a unique spice as it produces two economically important spices, nutmeg and mace. It is such a wonderful traditional Ayurvedic herbal medicine explained by acharyas for the treatment of various disorders. *M. Fragrans* Houtt. is native of the Eastern Moluccas. World production of nutmeg is estimated to average between 10,000 and 12,000 tonnes (9,800 and 12,000 long tonnes; 11,000 and 13,000 short tonnes) per year, with annual world demand estimated at 9,000 tonnes. *Myristicafragrans* is known to have been a prized and costly spice in European medieval cuisine as a flavouring, medicinal, and preservative agent.¹ It is an tropical evergreen tree that reaches about 65 feet tall. The fruit of nutmeg is similar as that of apricot. Nutmeg was introduced in India for quite a long time. It belongs to the Myristicaceae family with about 18 genera and 300 species. Fatty acids of nut and mace and leaf amino acids were evaluated to establish the variability among the species.

CLASSIFICATION²:

Taxonomical classification of *Jatiphala* (*Myristicafragrans* Houtt.) as follows :

Kingdom – Plantae

Phylum - Tracheophyta

Division – Magnoliophyta

Class – Magnoliopsida

Order – Magnoliales

Family – Myristicaceae

Genus – *Myristica*

Species – *Fragrans*

REGIONAL NAMES³ :

Regional names of *Myristicafragrans* are;

Assam : Jaiphal, Kanivish;

Bengali : Jaiphala, Jaitri, Jayphal, Jotri, Japatri, Jayapatri;

Kannada : Jaji, Jajikayi, jajipatri, jati;

Gujarati : Jaiphala, Jayfar, Jayephala, Javantari, Japatri, Jayapatri;

Hindi : Jaiphala;

Malyalam : Jati, Jatikka, Jaticosam, Jatipatri, Jatiphalam, Surabhi;

Marathi : Jaiphala, Jayapatri;

Oriya : Jaiphal;

Punjabi : Jaiphal, Jauntari;

Sanskrit : Ghatastha, Jaiphala, Jati, Jaticosha, Jatiphala, Jatishasya, Kosha, Koshaka, Madashaunda, Majjasara, Malatiphala, Phala, Puta, Rajabhogya, Shaluka, Sumanaphala;

Tamil : Adiphalam, Attigam, Kosham, Sadi, Sadikkay, Salugam, Samuttirandam, Sidam,

Sinevam, Sirugaridam, Sivagaram, Sivigara, Sivigaram;

Telugu :Jaji, Jajikaya, jajipatri, Jati,

Jatipatri, Jatiphalamu, Lavangamu;

Tulu :Jajikayi, Jakai;

Urdu :Jauzbuwa, Jaiphal;

Uriya :Jaipholo, Jaitri, Joyotri.

Arabic :Jiansiban, Jouzbawwa;

Cambodia :Bochkak;

Chinese :JouTouK'ou, TouK'ou;

English : Common Nutmeg, True Nutmeg,

False Aril, Fragrant Nut-Tree, Mace-Tree,

Nutmeg;

German :Muskatnuss, Muskatnussbaum;

Greek :Kaaryonaromatikon,karyonmyristicon,

Mochokaryon, Moscharion;

Italian :Moscatero, Nocemoscata;

Russian :Muskatnoetrava;

SYNONYMS⁴ :

Jatiphala, Jaticosha, Malatiphala, Jatisasya, Shaluka, Madashunda, Puta, jatisuta, Malatisuta, Jatisara, Jatishuka, Jati, SumanaPhala, Jatika, Dhavana, Majjasara, Shaluka, Rajabhogya, Janani, Koshakam, Phalajati, Jatishruna, Jatyavha

DISTRIBUTION / HABITAT⁵ :

It is a native of Moluccas, now cultivated in many tropical countries of both hemisphere. In India, it is grown in Nilgiri, Coimbatore, Salem, Ramanathapuram, Tirunelveli, Kanyakumari and Madurai districts of Tamilnadu; a few trees are found in various localities of Kerala, Assam and some other states also.

PROPAGATION AND CULTIVATION:

M. fragrans can be usually cultivated near the sea along the eastern and western coasts of India. It grows in widely different type of soil. pH of the soil should be 7.1 to 7.2 with 66 to 75 in. rainfall annually. Nutmeg requires hot and moist climate with 150 to 300 cm rainfall per annum. The plant is propagated by seeds. Generally, seeds are used for sowing. Fresh seeds are collected from fruits which have burst on the tree are sown within 24 hours under the shade. Fresh seeds are collected from mature fruit, dried for a days and sown directly on the site or in prepared nursery beds, 30 cm apart and 25 cm deep in soil.

The tree starts bearing fruits after 7 years onward. Fruiting is more or less throughout the year but they are harvested during June to October. Fruit with splitted pericarp are only collected. Each tree yield about 1250 fruits per year. As much as 4000 fruits per tree may be obtained in certain years.⁶

Nutmeg is commonly propagates through seeds. The tree being obligatory cross pollinated (Deinum 1949), variation exist in its seedling

progenies. Wild variability is observed in fruit shape, size, colour (Krishna moorthy et. al. 1991b; & Krishnamoorthy et. al. 1994c), Quality (Gopalam & Sayed 1988) and yield (Krishnamoorthy et. al. 1991b). Propagation of Nutmeg through cuttings is difficult. However rooting and establishment of such plants in the field were very poor. Grafting is the most successful vegetative propagation method in Nutmeg and epicotyls grafting is widely used for commercial multiplication.

Identification of sex at the seedling stage on the basis of leaf form and venation, colour of young sprouts, seedling vigour, chromosome,

morphology, shape of calcium oxalate crystals of leaf epidermis and chemical constituents are not reliable. The sex of the tree can be identified only after 6-7 years when they begin to flower. Generally, male and female trees are produced in a 1:1 ratio. Since one male tree is sufficient for every 10 female trees for pollination, the rest of the male trees available in the plantation can be made productive by converting them to female trees by working.⁷

DIFFERENT VARIETIES⁸ :

M. Fragrans which is commonly taken as nutmeg (seed) & Mace (aril). The other species in the family are ;

Table no. 1 – Table showing different varieties of *M. fragrans* with the description about morphological characters.

Sr. No.	Botanical names	Description of plant
1.	<i>M. anadmanica</i> Hook. F.	Leaves are three to four inches in diameter, pale silvery or coppery beneath. Fruit has the size and shape of a hen's egg. Pericarp is thick and brown with blood-red seed.
2.	<i>M. malabarica</i> . Lamk.	tree reaching 50 ft. in height with a diameter of 1.5 ft. The aril is reddish yellow, irregularly lobed, lacinate and extending to the apex of the seed. The ripe fruits are called Bombay nutmeg and Bombay mace, They have no odour and taste.
3.	<i>M. magnifica</i> Beddome Fl. Sylv.	An immense gregarious tree, 100 feet high. The fruit is oblong; up to four inch long, densely tomentose with a much deeply lacinate orange-red arillus. The seeds yield oil that is used for burning and making candles

4.	<i>M.amygdalina</i> , Wall.	A tall perfectly glabrous tree. Fruit is shortly peduncled and 1½ inch long. The pericarp is rather thin and glabrous. Aril is yellow and lacerate at the tip only
5.	<i>M.beddomeii</i>	A large tree reaching 90 ft. in height with a diameter of about 2.5 ft. Fruit is globose, 2 to 2.5 inch in diameter with a fleshy pericarp. The arillus is orange-red and lacinate with their ends separate. This tree has been used as a root stock for the vegetative propagation of <i>M. fragrans</i>
6.	<i>M. prainii</i>	leaves of six to twelve inches long, elliptic to oblong. Flowers are small and fruit is ovoid. It is 1½ inch long with a thick pericarp with a red lacinated seed
7.	<i>Knemaandamanica</i> , Warb.	<i>Myristicaattenuata</i> , Wall. - The fruit is ovoid, 1.5 inch long and the aril has a brilliant crimson color.
8.	<i>Myristicaargentea</i> Warb. ⁹	Both wild and cultivated, 10-20m long, bark is dark & blackish grey, leaves lower surface is silvery, 9-13 pairs of veins, fruit is ellipsoidal, slightly narrow at both end, seeds are oblong cylindrical 4 cm long. The red aril is thin.

DISCRIPTION OF THE PLANT¹⁰

a) Macroscopic

Seed ellipsoid, 20-30 mm long and about 20 mm broad, externally greenish brown sometimes marked with small irregular dark brown patches or minute dark points and lines slightly furrowed reticulately, a small light-coloured area at one end indicating the position of the radicle a groove running along the line of

raphe to the darker chalazae at the opposite end, surrounded by a thin layer of perisperm with infoldings appearing as dark rumination in the abundant greyish-brown endosperm, embryo, in an irregular cavity, small with two widely spreading crumpled cotyledons and a small radicle odour, strong and aromatic, taste, pungent and aromatic.

b) Microscopic

Transverse section of endosperm shows peripheral perisperm, of several layers of strongly, flattened polyhedral cells with brown contents, or containing prismatic crystals, inner layer of perisperm of thin-walled parenchyma about 40 μ thick, infolding into the tissue of the endosperm to form the ruminations containing numerous, very large oil cells with brown cell walls, vascular strands, in the peripheral region, numerous small spiral vessels, large celled, endosperm,

parenchymatous With occasional tanninidioblasts with thin brown walls, containing numerous simple, rounded and compound starch grains, with upto about 10 components usually 2-8 individual grains, upto 20 μ in diameter present, most of the cells with crystalline fat and often a large aleurone grain in each cell, containing a rhombic protein crystal upto 12 μ and small aleurone grains without regular crystalloids, embryo, of shrivelled and collapsed parenchyma.

PART USED¹¹ :

Seed and Aril



Figure 1

Seeds of *Myristica fragrans* Houtt.¹²



Figure 2 *Myristica fragrans* Houtt. tree

PROPERTIES :

The Ayurvedic Properties of the plant based on the following parameter;

Rasa – Katu, Tikta

Guna – Laghu, Tikshna, Ushna

Virya – Ushna

Vipaka – Katu

Doshaghata : Kaphavata Shamaka¹³

Karma¹⁴ – Jatiphala alleviates kapha & vata dosha.

It is Deepana, Pachana, Vrushya, Shothahara, Vedanasthapaka, Uttejaka, Madaka, Yakruduttejaka, vata anulomaka, Swasahara, Kasahara, Vamana, Hrudya, Trushnahara,

Krimighna, Svarya, Kannthya, Grahi, Ruchya, Sugandhi, MukhadaurgandhyaHar, Mala daurgandhyakrushnatahara.¹⁵

Rogaghnata¹⁶ :Shirashoola, Sandhishotha, Amavata, Charmaroga, Vrana, Swasa, Kasa, Vatavyadhi, Sukradosha, Shosha, kshaya, daurbalya, Pinasa, Hrudroga, Atisara, Kantharoga, Prameha, Akshepaka,Rajorodha, Jwara, Grahani, Krimiroga, Chardi, Trushna.

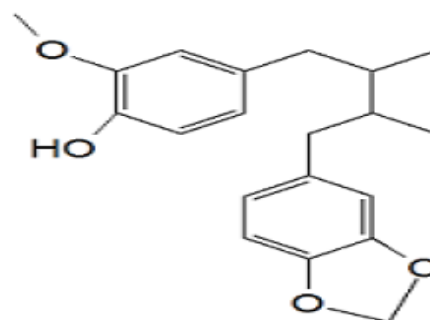
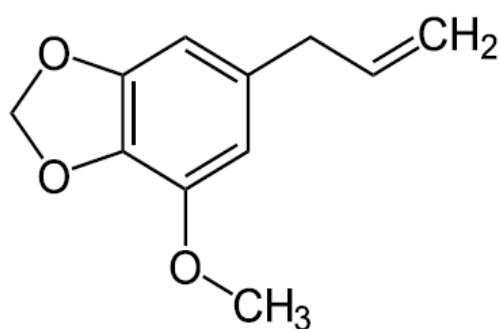
PHYTOCHEMISTRY¹⁷ :

The chief constituent of *Myristicafragrans* is Myristicin. Other than that, these are the following phytochemicals present in different parts of *Myristicafragrans*.

Seed :Jatiphala seed possess following chemicals in seeds:

1.8-Cineole, Acetic –acid, Alpha phellandrene, Alpha-terpinene, Alpha-thujene,

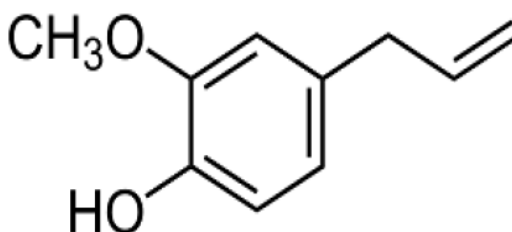
Amylodextrin, Arsenic, Boron, Calcium, Camphene, Caprylic-acid, Carbohydrates, ceratinic acid, chromium, Cis-P-ment-2-EN-1-ol, Cis-piperitol, Cis-sabinene-hydrate, cobalt, copaene, Copper, Cymene, D-alpha-pinene, D-beta-pinene, D-borneol, Dipentene, Elemicin, Essential oil, Eugenol, Fat, Fiber, Formic acid, Furfural, Furfurol, Gamma-terpinene, Geraniol, Geranyl-acetate, Hexadeconoic acid, Iron, Isoeugenol, lauric acid, Limonene, Linalool, Linoleic acid, Magnesium, Malabaricone-B, Malabericone-C, Manganese, Methoxyengenol, Methylengenol, Methylisoengenol, Myrcene, Myristic acid, Myristicin, oleanolic acid, oleic acid, P-cymene, Palmitric acid, Pectin, Pentosans, Phosphorus, Phytosterols, Pinene, Potassium, Protein, Riboflavin, Sabinene, Safrole, Sclareol, Sodium, Starch, Stearic acid, Terpinen-4-ol, Terpinen-4-yl-acetate, Terpeneol, Terpinolene, Thiamin, Trans-sabinene hydrate, Water, Zinc.



Myristicin

Mecelignan

Eugenol



Structure of Constituents in MyristicafragransHoutt.¹⁸

Aril :-Jatiphala aril contain following chemical composition.

5-methoxydehydrodi-isoeugenol, Calcium, Carbohydrates, Chromium, Cobalt, Copper, elemene, Essential oil, Fat, Fiber, Guaiacin, Iron, Macilenic acid, Macilolic acid, Mangneshium, Manganese, Phosphorus, Phytosterols, Potassium, Protein, Riboflavin, Sodium, Starch, Thiamin, Water, Zinc.

Plant :-Whole plant of Jatiphalacontain following chemicals:

1-(3,4,5-trimethoxyphenyl)-2-(4-Allyl-2,6-Dimethoxypropane), Propanel(3,4-methylenedioxyphenyl)-2-(4-Allyl-2) Propyl Acetate 1- (3,4-methylenedioxyphenyl)-2-(4-allyl-2) propylbenzoate), 1-(4-Hydroxy-3-methoxylphenyl)-2-(4-Allyl-2,6Dipropan-1-ol) 1-(5-Acetoxy-3,4-dimethoxyphenyl)-2-(4-Allyl), Propyl-Acetate, 2-(4-Allyl-2,6-dimethoxyphenyl)-1-(3,4,5-trimethoxyphenyl)-Propane, 2-(4-Allyl-2,6-Dimethoxyphenoxy)-1- propanol 2-(4-Allyl-2,6-dimethoxyphenyl)-1-(4-Hydroxy-3-methoxyphenyl)-1-Propanol, Genol, Cynidin, Dehydroisoeugenol, Kaempferol, Quercetin.

Leaf :-Leaf ofJatiphalacontains following chemical composition.

Essential oil, Myristicin

Bark :-Bark of Jatiphala contains following chemical composition.

Essential oil

PROCESSING¹⁹ :

Nutmeg tree yields up to three times in a season. Once harvested from the tree, the outer coat or husk is removed and discarded. Just underneath the tough husk is the golden-brown color aril, known as "mace," enveloping nutmeg kernel. Mace is gently peeled off from the kernel surface, flattened into strips, dried, and sold either as whole or finely ground. The nutmeg kernels are then dried under sun for several days to weeks. At larger commercial set-ups, this process is done rather more rapidly over a hot drier machine until the whole nutmeg rattles inside the shell.

The shell is then broken and shriveled nutmeg kernel is taken out. Finally, nuts are dipped in limewater in order to prevent insect infestation and seed germination.

QUALITY STANDARD²⁰ :

Foreign matter - Not more than 1%

Total Ash - Not more than 3%.

Acid-insoluble ash - Not more than 0.5%

Alcohol-soluble extractive Not less than 11%

Water-soluble extractive Not less than 7%

Ether soluble extractive Not less than 25%

Volatile oil Not less than 5%

SUBSTITUTES AND ADULTRANTS^{21,22} :

Kernels of *Myristicamalabarica* Lam. Are sometimes mixed with the material. These, however are distinguished by their larger size and narrowed shape and absence of any odour. Some of the commercial materials consists of limed nutmegs (kernel dipped in milk of lime and dried to avoid insect attack). These are whitish in colour and have a subdued aroma.

Along with Fruits of *Myristicamalabarica* Lamk., *Myristicadactyloides* Gaertn. (Syn. *M. beddomei* King) is also used as adulterant to *Myristicafragrans*.

ACTION & USES²³ :

The nutmeg is bitter, aromatic, astringent, They are useful in inflammations, cephalgia, helminthiasis, halitosis, dyspepsia, flatulence, nausea, vomiting, diarrhoea, dysentery, colic, asthma, catarrh, neuralgia, lumbago, stangury,

amenorrhoea, menorrhagia, dysmenorrhoea, ulcers, liver and splenic disorders, eye diseases, impotency, skin diseases, freckles, cracks in feet, insomnia, delirium tremens, hyperdypsia, cardiac disorders, fever and general debility. Concrete oil of nutmeg is used in cases of mild ringworm, chronic rheumatism, paralysis and sprains.

Nutmeg and mace spice contains many plant-derived chemical compounds that are known to have been anti-oxidant, disease preventing, and health promoting properties.

The spicy nut contains fixed oil trimyristinand many essential volatile oils such as which gives a sweet aromatic flavor to nutmeg like myristicin, elemicin, eugenolandsafrole. The other volatile oils are pinene, camphene, dipentene, cineole, linalool, sabinene, safrole, terpeniol.²⁴

PHARMACOLOGICAL ACTIONS :

Aphrodisiac, anti inflammatory, anodyne, antipyretic, anthelmintic, deodorant, digestive, carminative, stomachic, expectorant, diuretics, emmenagogue, antispasmodic, febrifuge, narcotic, stimulant, ophthalmic, anticonvulsant, antiseptic, constipating and tonic. Antihepatotoxic, hypolipidemic and antifungal.²⁵

The active principles in nutmeg have many therapeutic applications in many traditional medicines as antifungal, anti-depressant, aphrodisiac, digestive, and carminative functions.

Myristica fragrans is a good source of minerals like copper, potassium, calcium, manganese, iron, zinc and magnesium. Potassium is an important component of cell and body fluids that helps control heart rate and blood pressure. Manganese and copper are used by the body as co-factors for the antioxidant enzyme, superoxide dismutase. Iron is essential for red blood cell production and as a co-factor for cytochrome oxidases enzymes. It is also rich in many vital B-complex vitamins, including vitamin C, folic acid, riboflavin, niacin, vitamin A and many flavonoid anti-oxidants like beta-carotene and cryptoxanthin that are essential for optimum health.²⁶

The ethenolic extract of seeds of *Myristica fragrans* exhibits hypocholesteremic, anti-atherosclerotic and platelet aggregatory activities.²⁷

The essential oils from *M. fragrans* seeds are used in tonics (Purseglove 1968). They showed inhibitory effects against *Bacillus anthracis*, *B. mycoides*, *B. pumilus*, *B. subtilis*, *Escherichia coli*, *Saccharomyces cerevisiae*, *Shigella* spp. I and II and pathogenic staphylococci (Bhat & Broker 1953; Pathak et al. 1979; Satyavathy et al. 1987; Minakshi et al. 1999).²⁸ It also inhibited the carragenan-induced rat paw oedema and reduced the writhing induced by acetic acid in mice.²⁹ The ether extraction of seed of MF shown potential Hypoglycemic and Antidiabetic activity in Normoglycemic and Alloxan- induced diabetic Rats.³⁰

The acetone soluble part *M. Fragrans* possesses anxiogenic, sedative and analgesic activity. Though the drugs having anxiogenic activity cannot have any therapeutic use, it can be uses as a valuable agent to induce anxiety.³¹

The petroleum ether extract showed activities similar to non-steroidal anti-inflammatory activity. The hexane extract of seed of MF also exhibits antidepressant activity (10 mg/kg, orally) in mice using the forced swim and tail suspension tests. The *M. fragrans* hexane extract possesses anticonvulsant activity against the animal model of Grand mal. Petit mal and status epilepticus.³²

M. fragrans seeds (Chloroform extract), as well as nutmeg oil, are reported to inhibit platelet aggregation and hence showed antithrombotic effect . It also showed significant hypolipidaemic, anti-cholesterolaemic and anti-atherosclerotic effect in rabbits. Nutmeg essential oil are powerful antioxidant, anti-diarrhoeal activity and seeds are reported to possess antilipid - peroxidant properties.³³

FURTHER REPORTED ACTIVITIES :

The aphrodisiac activity of nutmeg has been reported (Tajuddin et al. 2003). Nutmeg oil showed antipyretic effects in rats and mice (Olajide et al. 2000). Insulin-like biological activity of *M. fragrans* aqueous extract has been reported (Broadhurst et al. 2000).

The antiulcer (capasso et al. 2000) and anti-diarrhoeal (Gupta & Yadav 1992) activities of *M.*

Fragrans seeds have been reported. *M. Fragrans* seed suspension had no harmful effect on blood pressure (Grover et al. 2002).

Anti thrombotic effect of *M. Fragrans* seeds as well as oil are reported to inhibit platelet aggregation and hence showed antithrombotic effects (Janssens&Laekeman 1990) Sastre al. 1996 reported the development of occupational asthma on inhalation of mace dust.³⁴

CLINICAL STUDIES³⁵ :a

Mustong, a commercial preparation containing *Mucunaprurita*, *Glycrrrhizaglabra*, *Withaniasomnifera*, *Tribulusterestris*, *Myristicafragrans* and *Tenosporacordifolia* is claimed to be found effective in improving libido and performance in man on the basis of some uncontrolled clinical studies on patient with sexual inadequacy. It increased sexual desire without showing any side effects.

5-12 years School children suffering from various helminthdisease were treated with an Ayurvedic preparation, kuberakshadi yoga, in a dose of 200mg/kg body wt. In two divided dose in which *M. Fragrance* is one of the ingredient. The drug has been foud effective against *Enterobiumvermicularis* and *Ascarislumbricoides*.

A controlled trial carried out on a compound drug having *M. Fragrans*as one of the ingredients (the other being vangabhasma, shilajatu, berberisaristata, Emblicaofficinale, acoruscalamus and camphor), has shown improvement in 18 out

of 30 patients complaining of premature ejaculation.

DOSAGE³⁶ :

Seed powder - 0.5 – 1gm,

Oil – 1 – 3 drops

MARKETED FORMULATION³⁷ :

Jatiphaladichurna, Jatiphaladivati,Jeerakarishtha, Ahiphenasava, Kumara asava, Ratnagiri rasa, Swalpakasturibhairava rasa, mahagandhaka rasa, Kasturibhairava rasa, Garbhachintamani rasa, Bruhatchandrodaya rasa, Makaradhwaja.

TOXICOLOGY :

The *Myristicafragrans* did not produce mortality even in a dose of 3.0g/kg,i.pThere was no observable effect on the gross behaviour.Toxicological effects reported including weak pulsa, hypothermia, delirium, vertigo and nausea associated with indigestion.³⁸ Aqueous extract of nutmeg is toxic to cockroaches (Hallstrom&thuvander 1997). Zaki& El (1987) reported teratogenic effect of nutmeg in foetus of rats.³⁹ Safrol a minor constituent of nutmeg produced DNA adducts in liver of mice (Randerath et al. 1993).Myristicin enhances the toxicity of pyrethrum to house flies when employed as an additive to pyrethrum.⁴⁰

SAFETY⁴¹ :

The drug when used within the recommended dosage and the treatment period is devoid of any adverse reactions.

CONCLUSION :

Myristica fragrans Houtt. is a hugely available potent medicinal plant used in many disorders of different systems. It is used as a single drug and also as an aromatic spices content in many medicinal preparations like vati, syrups, lozenges, avaleha etc. It is in great demand in domestically as well as internationally as one of the spices and also medicinal and nutritional supplement. *Myristica fragrans* has been used since centuries for diarrhoea, dysentery, insomnia, inflammation, heart diseases and impotency. It is reported to contain essential oil, myristicin, fatty acids, alkaloids and flavanoids. Extract of *M. fragrans* can be found in various herbal preparations that are in market today. The pharmacologic and clinical studies reported in the present review confirm the therapeutic value of *Myristica fragrans*. It is an important source of various types of compounds with different chemical structures as well as pharmacologic properties. Use of such herbal plant in chemical as well as pharmaceutical industries gives scope to a large extent in better treatment modalities.

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