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A REVIEW ON MEDICINAL PROPERTIES OF CUCUMIS MELO

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Abstract

Cucumis melo is an excellent, succulent, scrumptious product of the Cucurbitaceae family. Muskmelon is grown on the whole tropical and subtropical territories of the world for its nutrition and therapeutic worth. It is acquiring parcel of significance because of its brief span, high production potential with high nutritive worth, taste, delicacy and furthermore its appropriateness for development under irrigated and rainfed conditions consistently. The bioactive compounds of muskmelon are terpenoids, flavonoids, carbohydrates, amino acids, phospholipids, fatty acids and minerals. Cucumis melo are used to analgesic, hepatoprotective, antiinflammatory, antioxidant, diuretic, antifertility antiplatelet, antimicrobial, antiulcer, anthelmintic and anticancer properties. The present study review of literature to establish medicinal properties of Cucumis melo which makes it well suited for therapeutic interventions as well as food applications..

Keywords: Cucumis melo and Medicinal properties.

1. Introduction

Cucumis melo are commonly called as muskmelon, is a member of the Cucurbitaceae family. Consumer preference for this fruit is determined largely by its sweetness flavor or aroma, texture and more recently as a rich source of phytonutrients. The word 'Musk' is derived from Persian literature which means "Perfume" and other word "melon" is fresh from the Latin Melope meaning "apple-shaped melon"[1]. Cucumis melo originated in Asia and diverse wild and primitive melons are found on that continent, particularly in India. Musk melon fruits vary in size, shape and rind. The outer skin may be smooth, netted, ribbed, furrowed, yellow-brown, green, flesh yellow or pink. Ripe Musk melon fruit is nearly round, yellowish green, and rough textured. An immature Musk melon is green with a smooth rind, and may have shallow grooves depending on the cultivar [2]. The fruits are many seeded Muskmelons are relatively low in calories, fats, sodium and good source of potassium and it is recommended dietary allowance for vitamin A and vitamin C. In muskmelons there are many phytochemicals that have a potential health benefit. Three such compound found in Musk melons are Cucurbitacin-□, lithium and zinc which is helpful in prevention of cancer, fighting against depression, ulcer, dandruff and stimulating the immune system[3].

2. Origin and Distribution:

In many specific regions cost is maximum and yield is low due to increasing demand and popularity of fruit. It urges many business companies to develop muskmelon plants. The morphology of Musk melon is remarkably stable for some characters whereas, the morphology of the same organ in different fruits can be highly variable [4].

Musk melon vines trail along the ground, though they can be trained on a trellis or other support. Most musk melon vines are quite large and but breeders are developing more compact cultivars. Root systems are large and superficial. Stems are ridged or striate. It sprawling branches produce broad green leaves, bright yellow flower, and tendrils. Seed are whitish or buff, flat, smooth, 5- 15 mm long [5].

2.1. Fruit:

Fruits very in size, shape and rind, the outer skin may be smooth, netted, ribbed, furrowed, yellow- brown, green, flesh yellow or pink. Ripe Musk melon fruit is nearly round, yellowish green, and rough textured. An immature Musk melon is green with a smooth rind, and may have shallow grooves depending on the cultivar [6].

2.2. Leaf:

The Musk melon leaf is large, dark green, and rough. It is somewhat heart- shaped, orbicular, ovate or angled with 5-7 lobes. They have 5-8 cm diameter. They are dentate and base cordate. The petioles are 4-10 cm long with simple tendrils. Musk melon leaves are sometimes confused with cucumber however, cucumber leaves (left) have sharply-pointed and toothed lobes [7].

2.3. Flower:

Musk melon flower are yellow and have separate male and female flowers on the same plant. The female flower is easily identified by the small fruit (ovary) below the petals. The male flowers lack the fruit stracture and falls of the plant after the pollen. Flowers are staminate,

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clustered, pistillate, solitary, hermaphrodite with 1-3 cm diameter. Calyx is 5- lobed, 6-8 cm long. Petals are free, round in shape, 2 cm long with 3 stamens [8].

2.4. Seed:

The Propagation is done by seeds and vegetative method. Main parts used are pulp, root, seeds and seed oil. The seeds of melon contain multiflorenol, isomultiflorenol, 24-methylenecycloartenol, α- and β-amyrin, teraxerol, lupeol, euphol, 24-methyl25(27)-dehydrocycloartanol,24-methylene-24-dihydrolanosterol,24-methylene-24-dihydroparkeol, tirucallol and cycloartenol [9].

3. Vernacular Names:

Hindi: Karbhooja; English: Muskmelon,
Kannada: Kekkarike; Tamil: Tumatti kai
Sanskrit: Madhupala; Marathi- Chibunda,
Tulu-Chipppad.

The Table 1 and Fig.1. shows the Scientific classification and parts of *Cucumis melo .*

Scientific classification	
Kingdom	*Plantae*
Clade	*Tracheophytes*
Clade	*Angiosperms*
Clade	*Eudicots*
Clade	*Rosids*
Order	*Cucurbitales*
Family	*Cucurbitaceae*
Genus	*Cucumis*
Species	*Cucumis melo*

Leaf & Flower

Fruit

Fig. 1. *Cucumis melo & its Parts*

4. Medicinal properties of *Cucumis melo:*

4.1. Antiangiogenic Effect:

Muskmelon seeds have the purified trypsin inhibitor which were analysed by utilizing a method and by using 3-D cultures of HUVECs, determination of the viability of anti-angiogenic action was done. Muskmelon seeds are rich in trypsin, urease, lipoxygenase and lipase inhibitor which is well known for the inhibition of many enzymes [10].

4.2. Antimicrobial Activity:

The acetone, petroleum ether, heptane, and aqueous, concentrate of *Cucumis melo Linn*, was evaluated for the antifungal and antibacterial movement by the most elevated Zone of Inhibition [11]. The entire plant and fruit concentrate of muskmelon with acetone and aqueous have shown zone of Inhibition as 12mm in E. coli and 8mm in *C. albicans*. Other contagious and bacterial stain have shown very poor response towards the aqueous and acetone concentrate [12].

4.3. Haemolysis and Haemagglutination:

The analysis of haemagglutinating action of muskmelon seeds lectins were done on erythrocytes of bunny, human, pig, goat, pony, chicken, monkey, dog, cow, guinea, and sheep. The results have shown that lectins have only haemolysed the red cells of monkeys, dogs and hares [13].

4.4. Antidiabetic Effect:

Albeit, fruit strip concentrates of Cucumis melo turned around the diet enhanced with 0.5% 2-thiouracil, 1% cholic acid and 4% cholesterol, instigated increment in the degrees of creatinine kinase-MB, peroxidation of lipids in tissue, glucose, serum lipids [14]. Moreover, Muskmelon expanded the thyroid hormones and insulin degree, showing their capability to enhance the eating routine actuated adjustments in diabetes mellitus, serum lipids, and thyroid dysfunctions. The helpful impacts could be because of the large amount of ascorbic acids and polyphenols in the strip removes. The oxykine, a compound present in muskmelon, decreased cell injury by renal mesangial and oxidative stress prompted diabetes. Nephropathy caused by diabetes might be treated by oxykine [15].

4.5. Antiulcer Effect:

The Muskmelon seeds methanolic concentrate displayed hostile to ulcerogenic action. The decrease in vascular penetrability, rummaging of free-ions and reduced peroxidation of lipids alongside mucosal boundary fortification may be the component of its gastro-defensive action. Triterpenoids, phytoconstituents and sterols presence is liable for such activities [16].

4.6. Antivitiligo Effect:

A product containing acetyl cysteine, *Cucumis melo* concentrate and phenylalanine have been observed in an open study to study the safety and adequacy of the item. The products were analysed with narrow band micro phototherapy (311nm), in combination or individually. In this evaluation, patients around 38% to 73% showed phenomenal re-pigmentation of about more than 75% depending on the treatment routine. Patients treated with clobetasol ointment (0.05%) have shown moderate side-effects [17].

4.7. Free radical scavenging and Antioxidant action:

The methanolic concentrate of melon revealed that hydroxyl radicals and DPPH scavenging action. This action of melon extricates is especially because of phenolic compounds particularly flavonoids [18]. In the leaf and stem concentrates of melon have shown high level of antioxidant properties. The seeds methanolic concentrate has the most elevated DPPH radical scavenging action as compared to methanol concentrates of pulp, skin, stem, and leaf of the melon. Methanol-water and water concentrate contains a large volume of caffeic acid which

may be the reason behind the high antioxidant activity [19].

4.8. Anti-Inflammatory and Pain relieving Action:

The methanolic concentrate of muskmelon seeds has intense pain relieving property. *Cucumis melo* decreases LTB4 levels by repressing the leukocyte convergence which creates antiinflammatory impact [20].

5. CONCLUSION:

Cucumis melo is a worldwide appreciated fruit that offers multiple benefits to human health. However, besides the pulp, its by-products, such as peels and seeds, may also be used in the production of extraction of oils, since they contain phytochemicals of high nutritional and functional capacity. For decades, it has played key roles in the field for its medicinal values as it holds extraordinary promise for the future in management of claimed disease. Since, no side-effects have been reported till date, Musk melon can be looked upon as a unique, affordable, safe and tasty fruit medicine.

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Conflict of Interest: Nil

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