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Watermelon as a potential nutritional horticultural crop: A comprehensive review

Sagar Vasant Theurkar [1,*], Dhanesh Prakash Gawari [2] and Dinesh Namdeo Birhade [3]

[1] *Department of Zoology, Hutatma Rajguru Mahavidyalaya, Rajgurunagar, Tal Khed, Dist Pune, Savitribai Phule Pune University, Pune, India.*
[2] *Department of Chemistry, Dr. Prataprao Kadam Mahavidyalaya, Ramnandanagar, Burli, Tal. Palus, Dist. Sangali, University of Kolhapur, India.*
[3] *Department of Zoology, Hutatma Rajguru Mahavidyalaya, Rajgurunagar, Tal Khed, Dist Pune, Savitribai Phule Pune University, Pune, India.*

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Abstract

Watermelon possesses anticancer, anti-inflammatory and anti-oxidant properties due the phytochemicals like lycopene, vitamin C and polyphenolic material. Cardiovascular health conscious patients are consuming essential nutrient watermelon. Antioxidant property of watermelon plays an important role in coronary heart disease, cancer, diabetes, tension as well dehydration of body. The present review provides the information about different varieties that gain more production and keep in regulatory dietary source because of their nutritional values. It also supports to the selection of watermelon variety for more production from this ancient fruit. This information will encourage production and consumption of watermelon in worldwide.

Keywords: Anticancer; Anti-oxidant; Hypertension; Nutritional fruit

1. Introduction

In 21st century, trend of snacking has increased in recent years. However, in last few years back consumers are conscious about their health. Due to over doses of chemical fertilizers and chemical pesticides, diseases occurs like hypertension, diabetes, cancer and cardiovascular diseases (CVD) [10].

1.1. Scientific classification of watermelon:

- Kingdom: Plantae
- Clade: Angiosperms
- Order: Cucurbitales
- Family: Cucurbitaceae
- Genus: *Citrullus*
- Species: *lanatus*

1.2. Origin of Watermelon

Watermelon originated from Kalahari Desert of South Africa but now a day's watermelon cultured world widely [8,9,10]**.** Watermelon *C. lanatus* belong to the family cucurbitaceae [3]. Family cucurbitaceae is higher rank of plant families for using human food. Watermelon commonly known as Tarbooj in Hindi and Urdu, Kalingad in Marathi,

* Corresponding author: Theurkar Sagar Vasant

Eipelccha in Telagu, Tormuj in Bengali, Indrack in Gujrat, Tarbuj in Manipuri and Kallangadibali in Kannada. It is an ancient fruit. It has been cultivated since 2000 BC.

1.3. Morphology of Watermelon

It is an annual plant that has a climbing in habitat having diameter about 5-6 feet. It is a large, green colour and having pinnately lobed leaves. It has a large leaves and having light yellow flowers having innocent odour. Flower followed to juicy fruit, which is special kind of berry called pepo. Fruits are variable shape and sizes usually oval or cylindrical and round. They are stripped green or plain green colour. The fleshy, juicy, edible part is red in colour with small black or brown in colour seeds [11]. A single seed plant or nursery plant consists of 2-10 flowers and flower converts into 3-5 valuable fruits and 5-8 are non economical fruits are developed it is a summer fruit having higher water content as well 55.3% juice, 31.5% rineal and 10.4% pomace.

2. Varieties of Watermelon

Watermelon has been hybridised to more yield and be more resistant against the fusarium and wilting fungal diseases. These varieties are so versatile should be grow in different climates. While, they have more resistance power and yielding capacity than ancient melon called good grainages variety. High tonnage and good production varieties available in the Indian market like Sugar queen (Syngenta), Max (BASF Nunhems), Black Boss (Indus), Big Boss (Rizwan seeds), Melody F1 (Kalash Seeds) etc.

Seeds of watermelon grow in sandy loam rich organic matter soil having good drained and pH range capacity [6]. In western India it can be sowed in October heat whereas February- March in Northern India. Optimal temperature ranges from 24-27^0 C for the growth of the vines. It can be directly seeded in field or sow in the nursery for transplantation in the field.

2.1. Worldwide Watermelon Production

Botanist referred as a pepo to watermelon. Production of watermelon in 2020, China was the topmost country for 60% of the total tonnage. Total production of watermelon was 101.6 million tonnes out for 60.1 million productions. Turkey, India, Iran, Algeria and Brazil are leading countries for production of melon.

2.2. Watermelon production in India

In India Andhra Pradesh and west Bengal are leading states for watermelon cultivation. Uttar Pradesh Andhra Pradesh and Tamilnadu are top most states for production of watermelon likewise 685.91T, 557.67T and 381.55T respectively. Maharashtra state is also leading cultivation and production of watermelon to other states.

2.3. Nutritional Values of Watermelon

The recent diet recommendation of increasing diet rich natural antioxidant has generated replacing energy dense snack per day with fruit salads as fruit juice that posses antioxidants [2,4]. It creates a huge demand in the fruit industries for nutritious fruit production from natural origin in order to consumers need. A consumer creates demand to snacks on natural products such as fruit and vegetables. Watermelon is as exotic melon fruit which contains nutrients and photochemical to be beneficial to human health [1,5]. It has good source of vitamin B, C, E as well as calcium, phosphorus, Magnesium, iron, potassium, zinc etc. [10]. Watermelon seeds consist 35%, 50% oil and 5% fibre. The natural photochemical are effective on cell growth, modulation of gene expression and immune response [4,5,9].

3. Conclusion

Watermelon is a one of the commercial and benefited horticulture crop or fruit for human health is focused in this study. This accumulated information will be encouraged more than current watermelon cultivation, production and consumption. Snacks replaced by fruits as an energy source. It is also much helpful to women at the time of menstrual phase and pregnancy. To encourage peoples by pharmacologist for more consumption of summer fruit as a functional food because of their antioxidant, antifungal, antimicrobial, gastrointestinal properties. The agronomists are to encourage the farmers for cultivation and production of watermelon to increase their economical condition.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declare there is no any conflict of interest in this study.

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