

NUTRITION HEALTH BENEFITS AND ECONOMICS OF WATERMELON

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In recent years an increase in snacking has risen dramatically. Compared in previous years, customers are mindful of their health because of the heavy burden of non-communicable diseases such as obesity, diabetes, cancer and cardiovascular diseases (CVD). As a result, their understanding of food has progressed from being influenced solely by taste and appearance to recognizing the idea of optimum nutrition by avoiding nutritionally deficient foods.

Recent dietary guidelines to increase diet rich in natural antioxidants have created an interest in replacing energy-dense snacks per day with antioxidant fruits. This trend also creates demand in the food industry for the production of nutritious foods, preferably of natural origin, to satisfy the needs of consumers. Consumers are urged to snack on nutritious foods like fruit and vegetables, in this sense. Watermelon (*Citrullus lanatus*) is a quintessential exotic fruit stated to be beneficial to human health, containing nutrients and phytochemicals. It is a good source of vitamins B, C, and E and minerals like phosphorus, magnesium, calcium, and iron. Epidemiological studies have shown that it possesses antioxidants with anti-inflammatory, antihypertensive properties and a protective effect against toxicity caused by carbon tetrachloride

Background

Watermelon (*Citrullus lanatus*) is a member of the family Cucurbitaceae native to tropical Africa near the Kalahari Desert. Botanists refer to it as a "pepo," a fruit with a thick rind and a fleshy centre. It is commonly consumed as a refreshing summer fruit, much appreciated by consumers for its refreshing ability, attractive colour, delicate taste and high water content to quench the summer thirst. Watermelon's sweetness is due primarily to a

mixture of sucrose, glucose, and fructose. Sucrose and glucose account in a ripe watermelon for 20–40 per cent and fructose for 30–50 per cent of total sugars.

Health benefits

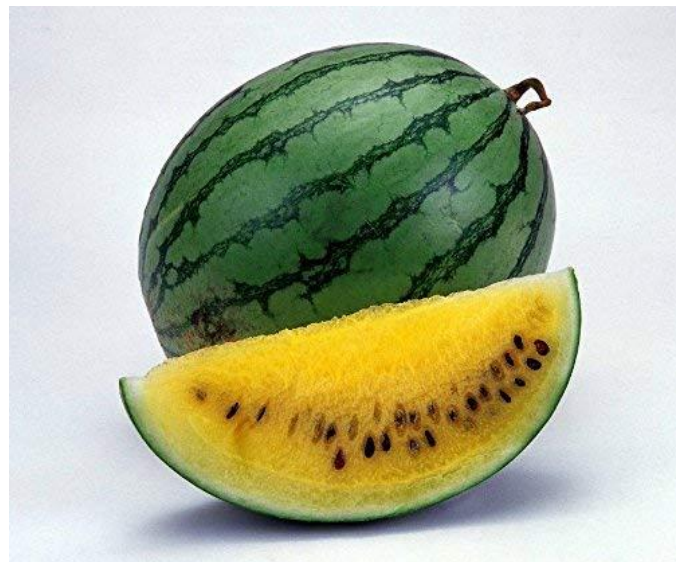
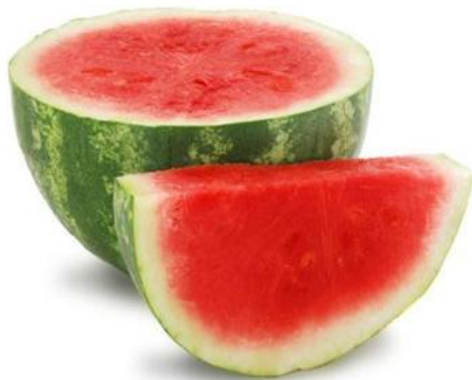
The latest dietary recommendation to increase diet-rich intake of natural antioxidants has created interest in replacing energy-dense snack per day with antioxidant-possessing fruit. Watermelon juice and pulp contain considerable amounts of fibre and carbohydrates. Fibre plays a significant role in blood cholesterol, which helps in the prevention of large bowel diseases, while carbohydrates are the source of energy for the cells. Watermelon is a quintessential exotic fruit containing nutrients and phytochemicals which have been reported to support human health. It is a good source of B, C, and E vitamins, as well as minerals like phosphorus, magnesium, calcium, and iron. Watermelon has been identified as a good source of vitamin C (3.72 mg/100 g). Vitamin C also has the potential to cut off the blood supply to growing cancers and therefore inhibits cancer cell growth. Epidemiological studies have shown that it has antioxidants with anti-inflammatory, antihypertensive properties, and a defensive effect against toxicity caused by carbon tetrachloride. **Bailey *et al.*** found that supplementation with watermelon juice improves aspects of vascular health in an individual with hypertension.

All the biochemical processes that occur in the cells and organelles of our bodies maintain a stable and normal human body. **Ijah *et al.*** stated that an oxidation reaction in a human body contributes to the formation of free radicals. Free radicals are highly unstable atoms, ions, or molecules that interfere aggressively with other molecules, affecting the normal functioning of deoxyribonucleic acid (DNA) and cell membranes. The cellular redox cycle of free radicals and reactive molecules contributes to the development of reactive oxygen species (ROS), which as toxic as well as beneficial compounds, play a double role. In addition, chemical reactions, free radicals and certain redox reactions are a cause of oxidative stress of macromolecules in living cells. This results in damage to cellular components like lipids, DNA, and proteins. Disorders such as CVD, cancer, and neurodegenerative diseases arise from this degradation. CVD is estimated to be the largest cause of death in European countries; the number of deaths due to cardiovascular diseases is further expected to be around 23.6 million by 2030.

Economic

Marketing efficient distribution of watermelon [*Citrullus lanatus*] is required to optimize economic returns for marketers and consumers. Around January and February 2018, an economic study of watermelon marketing was carried out in Lagos State, Nigeria. Data were collected using a questionnaire to obtain information from 56 study area marketers. Half of the advertisers used urban markets as points of sale and were supplied regularly with watermelon. Marketing for watermelons has been successful. The main restriction marketers have faced their inability to access credit. Regardless of educational level, ample consumer knowledge improved the economic returns of watermelon marketers.

Figure 1. Images of different watermelon cultivars.





Conclusion

In recent years snacking has become a phenomenon among consumers. Together with unhealthy lifestyles, these snacking trends may promote the formation of ROS and free radicals which lead to non-communicable diseases. Also, the quality parameters have the ability to promote the body's own natural healing process, playing a role in both the prevention and the amelioration of various diseases by suppressing the free radicals, decreasing oxidative stress leading to decrease in the risk of chronic diseases such as cancers, hypertension, diabetes, skin problem, CVD, and asthma. As a result, it is recommended to replace energy-dense foods with fruits. Because of the important nutritional parameters,

snacking 1 cup/152 g of watermelon juice per day over a lifetime will help to preserve good health and avoid potential ailments.

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