

## Melons: A power house of health promoting bio actives

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### Abstract

**Introduction & Statement of the Problem:** Nutritional disorders and nutritional deficiencies is a major and severe problem all around the world. Out of 9-10% of population are prone to under nutrition and malnutrition globally. Fruits and vegetables are the best source of nutrients and are enriched with all sufficient bioactive compounds and enzymes which can repair even the oxidative stress in cells. Melons have become the fourth most commercially and nutritionally important fruit in the world after oranges, bananas and grapes. Important indicators of melon market quality and consumer preference are sweetness (sugars), nutritional factors (antioxidants, vitamins and minerals) and texture of fruit and color of flesh.

**Methodology & Results:** Our extensive study was focused on the nutritional aspects of melon fruit, mainly all varieties and different flesh-colored melons such as watermelon and muskmelon. In watermelon different varieties studied, icebox watermelon showed highest nutritional constituents. Nutritional Biochemistry components were analyzed in different rates of ripening of melon sp. such as sugars and their metabolizing enzymes, antioxidants and their related enzymes etc. The study also focused on fruit ripening related hormones such as ethylene which was identified by gas chromatography. Various metabolites were localized in melon mesocarpic tissue histologically.

**Conclusion & Significance:** The study of bioactive compounds and antioxidant activity is of great relevance both to human health and commercial purposes as it provides valuable information about their synthesis thereby evaluating the best harvest period to reach highest antioxidant potential. Ultimately the accumulation of carbohydrates and bioactive compounds in the ripe muskmelon fruit suggests its use to the food scientists to maximize the nutritional value, thereby confirming muskmelon fruit as a nutritionally balanced source of dietary antioxidants and also essential in revealing the biosynthetic pathways of these compounds in melons. Moreover, the outcome of this study provides additional and informative data for targeted patient specific management of nutritional needs by consumption of fruits and for exploiting it to prevent chronic diseases.

### Professional Biography

Dr. Soumya V Menon is currently working as Professor in [Chemistry and Biochemistry](#) department at [Jain University](#). She earned her Masters at Bharathidasan University, Tamilnadu, India, 2008 and PhD in Biochemistry from Sardar Patel University, Gujarat, India in 2015. In the thesis work, she pioneered the first ever report on the biochemical, nutritional and histoarchitectural aspects of different varieties of icebox watermelon, yellow fleshed melon and non-netted muskmelon. After the completion of PhD, Soumya worked in different research institutes and academic institutes and handled both undergraduate and postgraduate students. She also guided five MSc. Students for their curriculum-based projects. She successfully published various papers from their work in reputed international journals. She has 16 publications in peer reviewed journals and one book to her credit. She has more than 80 citations of the research articles published. Soumya have received young scientist award in 2013, two times best poster award and three oral presentation awards in different national/international conferences, symposiums and supervises various R & D projects as principal investigator. Dr. Soumya also received the first prize in ideation contest, 2023.

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