

#### Abstract:

Lycopene pigment provides the red color found in some plants, notably tomato and watermelon fruit. Lycopene is a highly efficient oxygen radical scavenger and has been implicated in many epidemiological studies as providing protection against cardiovascular disease and some cancers, particularly of the prostate. Human uptake of lycopene from tomato-based products is thought to be more effective after heat and processing treatments. Watermelons contain as much or more lycopene than tomatoes but have been little studied as a source of lycopene. Over the last three years, we have conducted numerous studies with watermelon to determine maturity, storage, and minimal processing effects on lycopene levels. Additionally, a human clinical study with watermelon juice and tomato juice was done to determine lycopene uptake in humans. Watermelon cultivars exhibited a range of lycopene values, with seeded and seedless red fleshed types having 36 to 78  $\mu\text{g/g}$  lycopene, and orange or yellow watermelons having less than 5  $\mu\text{g/g}$  lycopene. Underripe and overripe melons had as much as 20% less lycopene than fully ripe melons, with maturity effects dependent on the variety. Storage of whole or cut melons for 2 to 10 days reduced lycopene by 6 to 10%. Assays of human plasma after lycopene ingestion indicate that lycopene was as efficiently obtained from watermelon juice as from tomato juice.