SAAFoST
SOUTH AFRICAN ASSOCIATION for FOOD SCIENCE & TECHNOLOGY
CONGRESS 2021
Welcome to SAAFoST's 24th Biennial International Virtual Congress
20 – 22 September 2021

# Maturation and Quality Properties of Fresh Watermelon Juice

Makaepea Maoto[1,2], Afam Israel O Jideani[3,4]

[1]University of South Africa, Johannesburg, South Africa. [2]University of Venda, Thohoyandou, South Africa. [3]University of Venda, Thohoyandou, South Africa. [4]Post harvest handling group, Vienna, Australia

## Abstract

There is an increase in consumption of natural fruit juice as an alternative to traditional caffeine-containing beverages such as coffee, tea or carbonated soft drink. Watermelon (*Citrullus lanatus*) juice is a nutritional beverage containing essential minerals and amino acids. Besides, it contains lycopene, ascorbic acid, β-carotene and polyphenols as antioxidants against inflammation, and certain cancers. In addition, colour, acidity, and total soluble solids are important physicochemical properties to be considered when evaluating the quality of the watermelon fruit juice. However, the quality properties of watermelon juice undergo some chemical changes during maturity stages. As a result, monitoring these quality properties during maturity is becoming very important. Three (3) watermelon per row were manually and randomly picked at different stages of maturity. The flesh was put in the table juice extractor (Russell Hobbs Juice Sensation Model no: RHJM01. 220-240 V - 700 W, UK) to extract the watermelon fruit juice. Analysis of color was determined using Lovibond colorimeter (LC/00 Spectro-colorimeter & SV 100kit, UK) while ºBrix was determined using a digital refractometer (Smart-1, ATAGO, CO, LTD, Thailand) and acidity was done using pH meter (LCD Display Bench-top, Sper Scientific, China). The red colour was more dominant in the fully - ripe sample as indicated by the Chroma (C*) and the hue (hº) values. The highest hº value was recorded in unripe (83.89), followed by the fully - ripe (76.03). The fully - ripe watermelon fruit juice had the highest red colour intensity as indicated by the highest (7.35) C* value. The same trend was observed for ºBrix, the lowest (2.26) value was recorded from the at unripe sample while the fully – ripe sample showed a higher (8.41) value. Quality properties of the watermelon juice are dependent on the maturity stage. Watermelon juice should be consumed at the fully ripe stage as it contains more quality properties than at any stage.

## Biography: Makaepea Maoto

MSc Food Science and Technology, PhD candidate (University of South Africa).