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**Topic:** Food and nutrition security

**Title:** Mineral nutrients essential to human health and their status in fresh and processed foods collected from the greater Cape Town area, South Africa.

**Presentation Type:** Oral

The latest estimates by the FAO indicate that approximately 795 million people are undernourished and more than two billion people are suffering from mineral nutrient deficiencies. Agricultural crops have been receiving increasing attention due to the growing amount of evidence indicating insufficient amounts of mineral nutrients, essential for human health, in their edible portions. In South Africa, very little information regarding the mineral nutrient composition of the produce grown in the country exists, especially in relation to the mineral nutrients essential to human health. This study therefore assessed the mineral nutrient composition of fresh and processed foods collected in the greater Cape Town area of the Western Cape province, South Africa. Thereafter their contribution to the daily recommended intakes of Cu, Mg, Mn, Cr, I, Se, F, V and Zn, in humans were evaluated. A large proportion of produce collected was found to be lacking certain essential mineral nutrients. Even though some products contained sufficient amounts of certain mineral nutrients, no one single product collected contained sufficient concentrations of all the mineral nutrients to satisfy our daily needs. Leafy vegetables, tubers and green beans were identified as the products that generally contained higher concentrations of most mineral nutrients. In most instances, processed foods, especially maize meal, had the lowest, or one of the lowest concentrations of several mineral nutrients. We therefore suggest that the mineral nutrient composition of available foods should always be taken into consideration when assessing food security, and not only the availability and diversity of foods consumed.