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Comparative Nutritional Analysis of Paste Developed from *Tricosanthes cucumerina* Linn and *Lycopersicon esculentum* L. Mill. in Nigeria

OLAIDE RUTH ADERIBIGBE¹, FOLASADE OLABIMPE ADEBOYEJO², MARY OLUWAKEMI AFOLABI²,
JOSEPH KUDADAM KORESE³, SOLOMON KOFI CHIKPAH⁴

¹National Horticultural Research Institute, Product Development, Nigeria

²University of Ibadan, Food Technology, Nigeria

³University for Development Studies, Agricultural Mechanization and Irrigation Technology, Ghana

⁴University of Kassel, Agricultural and Biosystems Engineering, Germany

Abstract

Tricosanthes cucumerina Linn. is one of the indigenous underutilised vegetables found in South-Western Nigeria and is used in rural areas as a substitute for vine tomato (*Lycopersicon esculentum* L. Mill.) due to its sweet tasting, aromatic, and deep red endocarp pulp. It is known as snake gourd, viper gourd, snake tomato or long tomato in many countries. Little attention is being paid to this crop despite its rich nutrient content and ease of cultivation. This study explored the potential of the crop in development of tomato paste; its beta-carotene, lycopene, vitamin C and mineral content was compared to that of vine tomato paste. The fully ripe fruits of the two vegetables were harvested from a local farm in Ibadan, Nigeria. The pulp of the snake tomato was extracted, concentrated, poured into a sterilized glass jar and corked. As for the vine tomato, wholesome fruits (roma variety) were washed, milled, concentrated, poured into sterilized glass jars and corked. All laboratory analyses were done using standard procedures. Paste from snake tomato had significantly ($p < 0.05$) higher content of β -carotene, vitamin C and lycopene (2.02, 0.30 and 1.34 mg g⁻¹, respectively) than paste from vine tomato (1.03, 0.14 and 0.42 mg g⁻¹, respectively). Likewise, mineral elements such as Fe, Zn, Ca and K were significantly ($p < 0.05$) higher in paste from snake tomato (3.44, 0.86, 13.38, and 320.25 mg/100g, respectively) than paste from vine tomato (2.69, 0.24, 12.01 and 179.6 mg/100g, respectively). However, sodium was significantly ($p < 0.05$) higher in vine tomato paste than snake tomato paste (59.2mg/100g vs 6.35mg/100g). In conclusion, the paste from snake tomato pulp has higher bioactive compounds and minerals than vine tomato paste. These essential nutrients contained in snake tomato make the fruit and its paste of nutritional and health importance. Thus, it can serve as a good substitute or complementary raw material for tomato paste industry.

Keywords: Bioactive component, mineral, tomato paste, underutilised plant