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Thin layer chromatographic analysis of capsaicin and moisture contents from three varieties of capsicum peppers

Ekwere Mercy R
University of Calabar, Nigeria

Levels of pungency of capsicum species depends on the concentration of alkaloid compound, capsaicinoids, primarily of capsaicin found in the fruit and only in the plant genus, capsicum. In detecting capsaicin, taster fatigue occurs and tasters are not able to distinguish between the different capsaicinoids, therefore the organoleptic test has been replaced with instrumental methods. The work sought to employ a cheap, affordable and readily available method. Crude capsaicin extracted previously from three varieties of capsicum genus [Bird eye pepper, X₁- (*Capsicum frutescens*), chilli pepper -X₂ and sweet pepper -X (*Capsicum annum*)] by a modified method of Kosuge et al. (1958) were separated and identified by means of thin layer partition chromatograph impregnated with silica gel G plates (SiO₂) and developed in a closed chamber with 95% methanol. The pungent fractions for bird-eye and chilli peppers showed dominant spots at R_f 0.59±0.21, 0.95±0.03 and 0.67±0.01, 0.92±0.10 respectively. While bird-eye pepper had a third spot at R_f 0.93±0.00, a third spot for chilli pepper was not detected. However, sweet pepper had a spot at R_f 0.82±0.02, similar to the third spot as that of bird – eye. The separated fractions were identified by comparing their R_f values with those of authentic capsaicin standards and literature data. TLC method appears to be adequate for routine analysis and could suffice as an essential preliminary purification of capsaicin where scarce equipment and most reagents are unavailable.

Biography

Ekwere Mercy R is a Senior Lecturer and a PhD student. He has a teaching and research experience in biochemistry for 20 years.

tomercyudoh@yahoo.co.uk

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