A comparison of the lipid and fatty acid profiles from the kernels of the fruit (nuts) of Ximenia caffra and Ricinodendron rautanenii from Zimbabwe

Eliton Chivandi, Bruce C.Davidson, Kennedy H. Erlwanger

Abstract

The lipid profile of nuts from Ximenia caffra and Ricinodendron rautanenii was determined and compared. Although the total oil content of X. caffra and R. rautanenii nuts was similar (47.6 ± 7.5% versus 53.3 ± 13.7%), the fatty acid profiles differed significantly. X. caffra had a higher content ($p < 0.05$) of saturated fatty acids than R. rautanenii (20.19 ± 1.07% versus 13.87 ± 3.68%) and contained C22:0 and C24:0 which were lacking in R. rautanenii. Total monounsaturated fatty acids were higher in X. caffra than R. rautanenii (71.48 ± 0.99% versus 36.66 ± 1.95%). Oleic acid (C18:1n9) was the major monounsaturated fatty acid (MUFA) in X. caffra whereas erucic acid (C22:1n9), the major MUFA in R. rautanenii, was undetectable in X. caffra. R. rautanenii had a greater polyunsaturated fatty acid content than X. caffra which contained C18:3n3 (α-linolenic acid) and nervonic acid (24:1n9). X. caffra is potentially an important source of essential fatty acids.